ALUMINUM CORP OF CHINA LTD
Form 20-F
April 18, 2017
As filed with Securities and Exchange Commission on April 18, 2017

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

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, 2016
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)

People's Republic of China
(Jurisdiction of incorporation or organization)

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

Yu Dehui
No. 62 North Xizhimen Street, Haidian District, Beijing
People's Republic of China (100082)
(86) 10 8229 8560
(Name, Telephone, Email 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 |
|---|---|
| American Depositary Shares* | New York Stock Exchange, Inc. |
| Class H Ordinary Shares** | |

* 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)

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Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of December 31, 2016:

| | |
|---|---|
| Domestic Shares, par value RMB1.00 per share | 10,959,832,268 |
| 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

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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 website, 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 the 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.

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.

CERTAIN TERMS AND CONVENTIONS

"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;

"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;

"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 HongKong 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, a wholly-owned subsidiary of our Group established under the PRC law;

"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 Shandong" refers to Chalco Shandong Co., Ltd., 100% of the equity interest of which is owned by us;

"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;
"Chalco Trading" or "CIT" refers to China Aluminum International Trading Co., Ltd., our wholly-owned subsidiary established under the PRC law;
"Chalco Xing County Alumina Project" refers to the Bayer process production system and ancillary facilities at Xing County, Lv Liang City of Shanxi Province with production capacity of 800,000 tonnes of metallurgical grade alumina per year;"
"Chalco Zhongzhou" refers to Chalco Zhongzhou Aluminum Co., Ltd., 100% of the equity interest of which is owned by us;
"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;
"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 to Chinalco Finance Co., Ltd.;
"Chinalco Shanghai" refers to Chinalco Shanghai Company Limited, 60% of the equity interest of which is owned by us;
"CSRC" refers to China Securities Regulatory Commission;
"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" refers to the energy-saving and emission reduction goals set out in China's 13th Five-Year Plan for National Economic and Social Development laid out in 2016, by which China expects to cut its per unit GDP energy consumption by 15% compared with the 2015 level by the end of 2020;
"Exchange Act" refers to the U.S. Securities Exchange Act of 1934, as amended;
"Euros" or "EUR" refers to the lawful currency of the Eurozone;
"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;
"Guizhou Development" refers to Guizhou Provincial Materials Development and Investment Corporation, a PRC state-owned enterprise and one of our promoters and shareholders;
"Guizhou Huajin" refers to Guizhou Huajin Aluminum Co., Ltd., 60% of the equity interest of which is owned by us;
"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 Chalco 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" refer 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;
"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;
"Japanese Yen" refers to the lawful currency of Japan;
"Jiaozuo Wanfang" refers to Jiaozuo Wanfang Aluminum Manufacturing Co. Ltd.;
"Ka" refers to kiloamperes, a unit for measuring the strength of an electric current, with one kiloampere equaling 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 from April 2007 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" refer 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;
"MIIT" refers to Ministry of Industry and Information Technology of the PRC;
"Nanchu Price" refers to the independent reference price for aluminum published on ENanchu (http://www.enanchu.com/), an nonferrous metal-related portal site in PRC;
"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;
"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;
"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 Alloy Material Co., Ltd, , 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., formerly a wholly-owned subsidiary of our Group. We disposed of 50% of the equity interest in Shanxi Huaxing in 2015, and as a result Shanxi Huaxing has become our joint venture in accordance with relevant accounting standards;
"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 mines to which we entrusted another party to conduct mining activities, including Shangtan mine, Jindui mine, Shicao mine, Nanpo mine, Xishan mine, Niucaogou mine and Sunjiata mine in Shanxi Province and that became the mining areas of our new own mine in 2010;
"SHFE" refers to the Shanghai Futures Exchange;
"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 among 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;
"Xinghua Technology" refers to Chinalco Shanxi Jiaokou Xinghua Technology, 66% of the equity interest of which is owned by us;
"Xinan Aluminum" refers to Xinan Aluminum (Group) Company Limited;
"Yangtze" refers to the Shanghai Changjiang Nonferrous Metals Spot Market;
"Zhangze Electric Power" refers to Shanxi Zhangze Electric Power Co., Ltd.;
"Zhengzhou Institute" refers to Chalco Zhengzhou Research Institute of Non-ferrous Metal, our wholly-owned subsidiary mainly providing research and development services;
"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., 62.10% 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 RMB6.9430 to US$1.00, the exchange rate as set forth in the H.10 statistical release of the Federal Reserve Board for December 30, 2016. 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.

PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISORS

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, 2015 and 2016 and for the years ended December 31, 2014, 2015 and 2016 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 make an explicit and unreserved statement of compliance with IFRSs with respect to our consolidated financial statements as of December 31, 2015 and 2016 and for the years ended December 31, 2014, 2015 and 2016 included in this annual report. Ernst & Young, our independent registered public accounting firm, has issued 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, 2014. Ernst & Young Hua Ming LLP, which has been appointed as our independent registered public accounting firm for the year 2015 and 2016, has issued unqualified auditor's reports on our consolidated statements of financial position as of December 31, 2015 and 2016, and the related consolidated statements of comprehensive income, statements of changes in equity and statements of cash flows for the years ended December 31, 2015 and 2016, respectively. Details of the change in our certifying accountant is disclosed in ITEM 16F.

The following tables present selected comprehensive income data and cash flows data for the years ended December 31, 2012, 2013, 2014, 2015 and 2016 and selected statements of financial position data as of December 31, 2012, 2013, 2014, 2015 and 2016 that were prepared under IFRSs. 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. As such, the comparative figures for our consolidated statements of comprehensive income for the year ended December 31, 2012 is revised to reflect the reclassification between continuing operations and discontinued operations accordingly. The selected financial information for the years ended and as of December 2014, 2015 and 2016 have been derived from, and should be read in conjunction with, the audited consolidated financial statements and their notes included elsewhere in this annual report. As the business combination under common control incurred in the years ended December 31, 2015 and 2016, the comparative figures for our consolidated statements of comprehensive income for the years ended December 31, 2012, 2013, 2014 and 2015 are revised to reflect the business combination under common control.

| | Year Ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2016 |
| | RMB | RMB | RMB | RMB | RMB | US$ |
| | (in thousands, except per share and per ADS data) | | | | | |
| CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME DATA | | | | | | |
| Revenue | 143,781,638 | 169,765,245 | 142,059,691 | 123,475,434 | 144,065,518 | 20,749,751 |
| | (143,752,327) | (167,014,322) | (141,438,233) | (120,982,778) | (133,508,536) | (19,229,229) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Continuing Operations | | | | | | |
| Cost of sales | | | | | | |
| Gross profit | 29,311 | 2,750,923 | 621,458 | 2,492,656 | 10,556,982 | 1,520,522 |
| Selling and distribution expenses | (1,846,981) | (1,875,206) | (1,766,666) | (1,784,114) | (2,065,453) | (297,487) |
| General and administrative expenses | (2,762,654) | (2,958,199) | (4,843,400) | (2,346,565) | (3,348,345) | (482,262) |
| Research and development expenses | (184,683) | (193,620) | (293,766) | (168,870) | (168,862) | (24,321) |
| Impairment loss on property, plant and equipment | (19,903) | (501,159) | (5,679,521) | (10,011) | (57,080) | (8,221) |
| Other income | 734,852 | 805,882 | 823,986 | 1,771,027 | 745,206 | 107,331 |
| Other (losses)/gains, net | (16,989) | 7,399,252 | 356,929 | 5,023,600 | 166,633 | 24,000 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Operating (losses)/profit from continuing operations | (4,067,047) | 5,427,873 | (10,780,980) | 4,977,723 | 5,829,081 | 839,562 |
| Finance costs, net | (4,079,152) | (5,251,206) | (5,686,243) | (5,148,626) | (4,189,037) | (603,347) |
| Operating (loss)/profit from continuing operations less finance costs | (8,146,199) | 176,667 | (16,467,223) | (170,903) | 1,640,044 | 236,215 |
| Share of profits of joint ventures | 37,040 | 148,749 | 89,510 | 23,238 | (95,508) | (13,756) |
| Share of profits of associates | 256,081 | 511,869 | 350,575 | 284,531 | 115,091 | 16,577 |
| (Loss)/profit before income tax from continuing operations | (7,853,078) | 837,285 | (16,027,138) | 136,866 | 1,659,627 | 239,036 |
| Income tax benefit/(expense) from continuing operations | 371,092 | (339,551) | (1,074,910) | 230,147 | (404,172) | (58,213) |
| (Loss)/profit for the year from continuing operations | (7,481,986) | 497,734 | (17,102,048) | 367,013 | 1,255,455 | 180,823 |
| (Loss)/profit per share from continuing operations | (0.52) | 0.05 | (1.20) | 0.01 | 0.02 | 0.004 |
| Discontinued operation (loss)/profit for the year from discontinued operation | (1,187,299) | 207,144 | - | - | - | - |
| (loss)/profit for the year | (8,669,285) | 704,878 | (17,102,048) | 367,013 | 1,255,455 | 180,823 |
| (Loss)/profit attributable to: | | | | | | |
| Owners of the parent | (8,259,456) | 929,290 | (16,269,477) | 148,622 | 402,494 | 57,971 |
| Non-controlling interests | (409,829) | (224,412) | (832,571) | 218,391 | 852,961 | 122,852 |
| Dividends | - | - | - | - | - | - |
| Basic and diluted (loss) /earnings per share | (0.61) | 0.07 | (1.20) | 0.01 | 0.02 | 0.004 |
| (Loss)/earnings per ADS | (15.27) | 1.72 | (30.07) | 0.25 | 0.49 | 0.10 |
| Dividends (expressed in RMB and US$ per share and per ADS) | | | | | | |
| Final dividends per share | - | - | - | - | - | - |
| Final dividends per ADS | - | - | - | - | - | - |
| Proposed dividends per share | - | - | - | - | - | - |
| Proposed dividends per ADS | - | - | - | - | - | - |

| | Year Ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2016 |
| | RMB | RMB | RMB | RMB | RMB | US$ |
| | (in thousands, except per share and per ADS data) | | | | | |
| CONSOLIDATED STATEMENTS OF FINANCIAL POSITION DATA | | | | | | |
| Total current assets | 49,467,490 | 63,444,766 | 63,675,743 | 64,462,404 | 66,426,230 | 9,567,367 |
| Total non-current assets | 127,511,239 | 137,910,815 | 131,146,233 | 127,596,000 | 123,650,716 | 17,809,408 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Total assets | 176,978,729 | 201,355,581 | 194,821,976 | 192,058,404 | 190,076,946 | 27,376,775 |
| Total current liabilities | 84,170,180 | 96,999,986 | 104,693,353 | 81,807,290 | 82,944,664 | 11,946,516 |
| Total non-current liabilities | 38,160,621 | 49,067,354 | 48,822,563 | 58,357,588 | 51,544,793 | 7,423,995 |
| Total liabilities | 122,330,801 | 146,067,340 | 153,515,916 | 140,164,878 | 134,489,457 | 19,370,511 |
| Net assets | 54,647,928 | 55,288,241 | 41,306,060 | 51,893,526 | 55,587,489 | 8,006,264 |
| Long-term interest bearing loans and borrowings (excluding current portion) | 36,635,652 | 46,294,828 | 44,774,211 | 54,000,874 | 47,322,748 | 6,815,893 |
| Capital stock | 13,524,488 | 13,524,488 | 13,524,488 | 14,903,798 | 14,903,798 | 2,146,593 |

| | Year Ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2016 |
| | RMB | RMB | RMB | RMB | RMB | US$ |
| | (in thousands) | | | | | |
| OTHER FINANCIAL DATA | | | | | | |
| Net cash flows generated from operating activities | 1,122,352 | 8,281,407 | 13,782,322 | 7,297,055 | 11,518,674 | 1,659,034 |
| Net cash flows (used in)/generated from investing activities | (23,279,963) | (8,529,119) | (5,139,667) | 2,393,107 | (4,997,193) | (719,745) |
| Net cash flows generated from/(used in) financing activities | 20,695,222 | 2,557,047 | (3,813,351) | (5,425,640) | (3,661,181) | (527,320) |
| Net (decrease)/increase in cash and cash equivalents | (1,462,389) | 2,309,335 | 4,829,304 | 4,264,522 | 2,860,300 | 411,969 |

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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 April 7, 2017, the exchange rate for Renminbi was US$1.00 = RMB6.8978.

| Period | Period End | Average [(1)] | High | Low |
|---|---|---|---|---|
| | | (RMB per US$1.00) | | |
| 2012 | 6.2301 | 6.3093 | 6.3449 | 6.2221 |
| 2013 | 6.0537 | 6.1412 | 6.2438 | 6.0537 |
| 2014 | 6.2046 | 6.1704 | 6.2591 | 6.0402 |
| 2015 | 6.4778 | 6.2869 | 6.4896 | 6.3180 |
| 2016 | | | | |
| September | 6.6685 | 6.6702 | 6.6790 | 6.6630 |
| October | 6.7735 | 6.7509 | 6.7819 | 6.6685 |
| November | 6.8837 | 6.8402 | 6.9195 | 6.7606 |
| December | 6.9430 | 6.9198 | 6.9559 | 6.8775 |
| 2017 | | | | |
| January | 6.8768 | 6.8708 | 6.9575 | 6.8360 |
| February | 6.8665 | 6.8694 | 6.8821 | 6.8517 |
| March | 6.8940 | 6.8940 | 6.9132 | 6.8787 |
| April (through April 7, 2017) | 6.8978 | 6.8903 | 6.8978 | 6.8832 |

(1) Annual average is 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 and volatile financial or economic conditions, such as those caused by the global financial and economic crisis since 2008, including the sovereign-debt crisis in the European Union from 2011 to 2012 and the continued weakness and uncertainty regarding the durability of the emerging economic recovery, had 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, results of the U.S. presidential election in 2016, which may lead to changes in existing trade policies and agreements of the United States as well as perceived changes in the U.S. social, political, regulatory and economic conditions and withdrawal of the United Kingdom from the European Union, which may involve lengthy negotiations and the uncertainty towards the European economy, financial and banking market, could potentially bring uncertainties to the development of global economy and thus increase volatility in the markets, including the prices of non-ferrous metals. 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. For example, in 2014, the Australian FOB spot price for alumina and the international cash price of primary aluminum on the LME reached a high of US$357 per tonne and a low of US$307 per tonne and a high of US$2,089 per tonne and a low of US$1,634 per tonne, respectively. However, due to the general slowdown of the global economy and overcapacity of global aluminum industry beginning in 2015, the range for the high and low prices for the Australian FOB spot price for alumina and the international cash price for primary aluminum on the LME declined in 2015 to a high of US$354.5 per tonne and a low of US$200 per tonne and a high of US$1,959.1 per tonne and a low of US$1,423.5 per tonne, respectively, and further declined in 2016 to US$350.5 per tonne and a low of US$197.0 per tonne and a high of US$1,778 per tonne and a low of US$1,449 per tonne, respectively. As a result, the average external selling prices for our self-produced alumina and primary aluminum were RMB2,016 per tonne and RMB12,208 per tonne respectively in 2016, which decreased by approximately 15% and increased by 1%, respectively, as compared to the prices in 2015. 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 and primary aluminum, which may materially and adversely affect our business, financial condition and results of operations.

In addition, since our profit margin for trading non-ferrous metal products and coal products is based on price fluctuations in the short term, we need to make the correct prediction of the price fluctuations of these commodities on the markets to maintain our profit margin. If market 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 purchase and sales prices of the non-ferrous metal products and the coal products we deal in, significant fluctuations in these prices 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 for these commodities 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. We expect to incur total capital expenditures of approximately RMB15 billion in 2017. 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 2015 and 2016, we incurred a net loss of approximately RMB17.0 billion in 2014. We may incur losses in the future and we cannot assure you that we will remain profitable in the future.

In addition, we expect that we will continue to rely on, in addition to our cash flows generated from operating activities, bank and other loans as well as proceeds from 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.

In the past few years, we have entered into a new business segment and streamlined our existing business to focus on the productions of alumina and primary aluminum. For instance, in 2013, we acquired an aggregate of 70.82% of the equity interest in Ningxia Energy, 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 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 November 2015, we acquired relevant assets and liabilities of High-Purity Aluminum and Light Metal of Baotou Aluminum Group. Baotou Aluminum Group is a subsidiary of Chinalco. In addition, in line with our development strategy to focus on the development of our core business in alumina and primary aluminum production, where we have an 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 our 65% equity interest in Chalco Iron Ore to a wholly-owned subsidiary of Chinalco on December 26, 2013. In December 2015, we transferred a 50% equity interests in Shanxi Huaxing, a wholly owned subsidiary of our Company, through the Shanghai United Assets and Equity Exchange at a price of RMB2,351 million. Pursuant to a resolution passed at the 2015 second general meeting of the Company held on 29 December 2015, the proceeds raised from the disposal of the equity interests in Shanxi Huaxing would be used for permanent replenishment of liquidity required for the operation of the Company. For details of the disposal of Chalco Iron Ore and Shanxi Huaxing, please see "Item 4. Information on the Company - A. History and Development of the Company."

There is no assurance that we will enter into a new business segment or continue to streamline our existing business as we have done so in the past.  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, 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 relevant PRC laws;
- 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 business, financial condition and results of operations. In particular, if any of the acquired businesses fail to perform as we expect, we may be required to recognize a significant impairment charge, which may materially and adversely affect our business, 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.

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.

In addition, our joint ventures which operate coal mines were facing increasing risks in recent years. Due to more stringent regulations on environmental protection, imbalances between supply and demand in the coal market and level of inventory, coal prices declined in 2015. In the first half of 2016, the coal prices continued their downward trend and reached their lowest point in August 2016. Although coal prices rebounded since August 2016 as a result of the PRC government's policy of cutting excessive coal production capacity as well as decrease in hydroelectricity and increase in transportation costs, we cannot assure you the coal price will continue to increase or maintain at the current price level in the future. If coal prices decrease in the future, the business, financial condition and results of operations of these joint ventures which operates coal mines may be adversely affected.

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

During the past few years, we expanded the production capacity by completing our 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, this increase in our production capacity would 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. In addition, due to weak market conditions in recent years, we have implemented flexible production arrangements for certain alumina and primary aluminum production facilities since 2013. In addition, we abandoned certain primary aluminum and alumina production facilities with an aggregate annual designed production capacity of 157,500 and 30,000 tonnes, respectively, in 2014. We also increased our external purchases of alumina and primary aluminum for trading purposes to capitalize on fluctuating market prices 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.
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, 2014, 2015 and 2016. In 2014, we recorded a impairment loss for land use rights of RMB141 million for our Chongqing branch, impairment loss of property, plant and equipment of RMB5,680 million, impairment loss of mining rights of RMB35 million and impairment loss of computer software and other intangible assets of RMB73 million. In 2015 and 2016, we recorded impairment loss of property, plant and equipment of RMB10 million and RMB57.1 million, respectively. 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 16% from 2015 to 2016, 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. In the past, various regions across China 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, our average purchase price per unit tonne of thermal coal used in our alumina production increased from 2015 to 2016, 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 13th 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 2016 to 2020. 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 couple of overseas projects, including the bauxite mining projects in Laos and Indonesia. Due to uncertainties involved in the overseas projects, 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.

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.

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 our mines and external suppliers. See "Item 4. Information on the Company - B. Business Overview - Raw Materials - Alumina - Supply." The extents 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 portion of bauxite we use for production. Indonesia used to be a major source of our imported bauxite. As a result of the ban imposed by the Government of Indonesia on the exportation of unprocessed bauxite and nickel, since January 2014, we were not able to export the bauxite produced by our bauxite mines in Indonesia for the use of our alumina refineries in China, and our operation of bauxite mining in Indonesia has been suspended since September 2014. If we exhaust our stockpiles or our procurement of bauxite from Australia are interrupted for any reasons, and cannot find an alternative source of imported bauxite at competitive prices, our financial condition, results of operations and profitability could be adversely affected.

In addition, our results of operations can be 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.

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.

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, 2016, we had approximately RMB58.3 billion in outstanding short-term bonds and short-term bank borrowings (including the current portion of long-term bank and other borrowings) and RMB47.3 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 20 to our audited consolidated financial statements for more detailed information about our borrowings. 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.

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

We completed the issuance of US$350 million in aggregate principal amount of 6.625% senior perpetual capital securities, US$400 million in aggregate principal amount of 6.25% senior perpetual capital securities and US$500 million in aggregate principal amount of 4.25% senior perpetual capital securities (altogether, the "Securities") in October 2013, April 2014 and November 2016, respectively, through Chalco Hong Kong Investment Company Limited (the "Issuer") with guarantees to the repayment obligations of the Securities provided by our subsidiaries including Chalco Hong Kong (the "Subsidiary Guarantors"). We intend to redeem US$400 million in aggregate principal amount of 6.25% senior perpetual capital securities on April 29, 2017 at the principal amount together with any distribution accrued thereon. The indentures 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 Hong Kong which is not a Subsidiary Guarantor.

As a result of the covenants, our ability to pay dividends or other distributions on our ordinary shares and the ADSs may be limited. These covenants also restrict our ability to raise additional funds 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 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).
In addition to the Securities, our Company issued RMB2,000 million in aggregate principal amount of 5.50% perpetual medium-term notes (the "2015 Perpetual Medium-term Notes") in China. Pursuant to the terms of the 2015 Perpetual Medium-term Notes, while any coupon distribution payments are unpaid or deferred, the headquarters of the Company cannot declare or pay dividends to shareholders or decrease the share capital, or make material fixed asset investments of the headquarters of the Company.
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, 2016, our largest shareholder, Chinalco, directly owned 32.81%of our issued share capital and indirectly owned an additional 2.96% 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.
The outbreak of infectious diseases could interrupt or affect our operations.
The spread of infectious diseases in PRC or other countries or districts where we operate may severely affect our business, results of operations and financial condition. We could be adversely affected by the disease itself, if our employees are infected with diseases and unable to continue their work. While we did not experience significant effects from the outbreak during the year ended December 31, 2016, we cannot assure you that outbreaks of disease in the future will not adversely affect our projects or business operations, which could result in a material adverse effect on our business, financial conditions and results of operations.

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. For example, in November 2016, there was a slurry leakage incident at Shanxi Huaxing caused by equipment malfunction. As a result, Shanxi Huaxing was penalized by the local environmental protection authorities. We cannot assure you that the similar events would not occur in the future, if such incidents were to occur, it could impact our operating results, financial condition and reputation, all of which could adversely affect our profitability and ability to attract new customers.
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. Due to serious haze hovering in certain areas in China, the government of the PRC has issued and may continue to issue rules and regulations to restrict production of certain industries in certain areas to alleviate air pollution. Such rules and regulations may adversely affect our operations in those areas in China. 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. On July 18, 2013, the Ministry of Industry and Information Technology of the PRC ("MIIT") issued the Standard Conditions for Aluminum Industry, which sets forth various standards for existing and new projects, including standards for environment protection, energy consumption, and utilization of resources. In order to meet these standards, we may be required to update our equipment and improve our technology, which could delay our production or result in additional costs and expenses. We cannot assure you that the relevant government authorities will not issue any similar standards or rules, which may require us to incur additional costs or expenses to comply with these standards or rules, and our existing production may be delayed for facility upgrading or suspended before fully complied with these standards or rules. The occurrence of any of the foregoing could have an adverse effect on our business, results of operations and financial condition.
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. 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.

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 and daily operations management. As of December 31, 2016, the book value of our properties with defective titles is RMB6,759 million, which represents approximately 12.2% 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, 2016, the book value of these land parcels is RMB447 million, represents approximately 0.8% 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 chemical alumina products and certain non-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.

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 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.

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 adequately 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. Such 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 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.

- The PRC government exercises 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 the 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. Over the last year the RMB depreciated significantly against the U.S. dollar. It is difficult to predict how market forces or PRC or U.S. government policy may impact the exchange rate between the RMB and the U.S. dollar in the future. Any appreciation or depreciation of the Renminbi will affect the value of our US dollar-denominated borrowings and overseas investments, the prices of our export sales denominated in foreign currencies and the Renminbi equivalent value of our trade and notes receivable denominated in foreign currencies, which may 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.

- The PRC legal system is developing. Laws are enacted and amended and new regulations are issued relatively constantly. In addition, the PRC legal system is different from the common law system and precedents have limited effects in the PRC legal system. As such, it may involve uncertainties to enforce or obtain a remedy under any of our present or future agreements which 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 fully 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 full 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 four firms appealed to the SEC against this decision and, on February 6, 2015, each of the four accounting firms agreed to a censure and to pay a fine to the SEC to settle the dispute and avoid suspension of their ability to practice before the SEC. The firms' ability to continue to serve all their respective clients is not affected by the settlement. The settlement requires the firms to follow detailed procedures to seek to provide the SEC with access to Chinese firms' audit documents via the CSRC. If the firms do not follow these procedures, the SEC could impose penalties such as suspensions, or it could restart the administrative proceedings. The settlement did not require the firms to admit to any violation of law and preserves the firms' legal defenses in the event the administrative proceeding is restarted.

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 affiliated to one of the four accounting firms above.
In the event that the SEC restarts the administrative proceedings, depending upon the final outcome, listed companies in the United States with major PRC operations may find it difficult or impossible to retain auditors in respect of their operations in the PRC, which could result in financial statements being determined to not be in compliance with the requirements of the Exchange Act, including possible delisting. Moreover, any negative news about the proceedings against these audit firms may cause investor uncertainty regarding China-based, United States-listed companies and the market price of our ADSs may be adversely affected.
If our independent registered public accounting firms 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.

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 eight subsidiaries mainly engaged in bauxite mining; one integrated alumina and primary aluminum production plant; nine stand-alone alumina refineries, including our Zhengzhou Institute; 11 stand-alone primary aluminum smelters; one carbon production plant and one integrated power generation company with coal mining operations. All of our principal alumina and primary aluminum production facilities are operated in accordance with ISO14001 standards.

Disposal of Aluminum Fabrication Business

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 agreed to 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 consideration in full.

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 agreed to pay the consideration in cash in five equal installments 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 has paid the first four installments 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 agreed to pay the consideration in cash in five equal installments 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 has paid the first four installments 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 the 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 agreed to pay the consideration in cash in five equal installments 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, the first four installments have been paid in accordance with the agreement.

We decided to dispose of the assets of the alumina production line of Guizhou branch because the district in which they were located had 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 built a new alumina refinery in an area relatively close to major bauxite and coal mines in Guizhou Province, which commenced production with an annual capacity of 1.6 million tonnes of alumina in 2015.

Disposal of Equity Interest in Shanxi Huaxing

The proceeds from the private placement of A shares was proposed to invest in Chalco Xing County Alumina Project, the Chalco Zhongzhou Bayer Ore-dressing Process Expansion Construction Project, and the replenishment of our working capital. The Chalco Xing County Alumina Project, which was carried out by Shanxi Huaxing, commenced construction in May 2011 and undertook full operation in 2014. After the completion of private placement of A shares in June 2015, the Board resolved to replace the funds which have been invested by us in advance with the proceeds raised from the private placement of A shares. In light of our strategic blueprint for the development of Shanxi aluminum recycle industrial park, we planned to introduce strategic investors for joint investment and cooperation to develop a new model of integrated coal, electricity and aluminum operations. In December 2015, the Group entered into an equity transfer agreement with Shenzhen CR Yuanta Asset Management Co., Ltd., a state- owned entity, to transfer 50% equity interests in Shanxi Huaxing, a wholly owned subsidiary, through the Shanghai United Assets and Equity Exchange at a price of RMB2,351 million. The price was determined based on the appraisal value provided by an independent qualified appraisal company. According to the Equity Transfer Agreement, 30% of the consideration amounting to RMB705 million has been received by us in December 2015. In December 2016, Shenzhen CR Yuanta Asset Management Co., Ltd. transferred the 50% of equity interest in Shanxi Huaxing to Baotou Transportation Investment Group Co., Ltd. As agreed among Shenzhen CR Yuanta Asset Management Co., Ltd., Baotou Transportation Investment Group Co., Ltd. and the Company, Baotou Transportation Investment Group Co., Ltd., shall assume the payment obligation on the outstanding consideration of RMB1,646,035,160 payable by Shenzhen CR Yuanta Asset Management Co., Ltd. to the Company under the Equity Transfer Agreement and settle the outstanding consideration in full together with interest accrued thereon from January 1, 2017 to the date of payment before March 31, 2017. As of the date of this annual report, the payment is fully settled by Baotou Transportation Investment Group Co., Ltd.

Transfer of Shares of Jiaozuo Wanfang

On January 22, 2015 and January 23, 2015, we decreased our shareholding in Jiaozuo Wanfang by 4,758,858 shares through the securities exchange system of the Shenzhen Stock Exchange. In March 2015, we transferred 100,000,000 shares of Jiaozuo Wanfang to Geo-Jade Petroleum Corporation by way of agreement after the public solicitation for potential transferees. On June 25, 2015, we further transferred 42,550,900 shares of Jiaozuo Wanfang by way of block trading through the securities exchange system of the Shenzhen Stock Exchange. On December 18, 21 and 22, 2015, we reduced our shareholding in Jiaozuo Wanfang by 16,695,100 shares through the centralized bidding trading system of the Shenzhen Stock Exchange. From December 23 to 25, 2015, we reduced our shareholding in Jiaozuo Wanfang by 13,865,000 shares through the centralized bidding trading system of the Shenzhen Stock Exchange and block trading. As a result, we held 29,582,057 shares of Jiaozuo Wanfang as of December 31, 2015, representing 2.46% of the total share capital of Jiaozuo Wanfang. During the period from July 8, 2016 to September 27, 2016, we reduced our shareholding of Jiaozuo Wanfang by an aggregate of 16,628,098 shares via the Shanghai Stock Exchange centralized bidding trading system, representing approximately 1.39% of the total share capital of Jiaozuo Wanfang. The average price of reduction was approximately RMB8.73 per share. After the reduction, the Company remained holding 12,953,959 shares of Jiaozuo Wanfang, representing approximately 1.09% of its total share capital.

During the period from September 29, 2016 to January 26, 2017, we reduced our shareholding of Jiaozuo Wanfang by an aggregate of 12,953,959 shares via the Shanghai Stock Exchange centralized bidding trading system, representing approximately 1.09% of the total share capital of Jiaozuo Wanfang. The average price of reduction was approximately RMB10.19 per share. After such reduction in our shareholding, we no longer hold any shares of Jiaozuo Wanfang.

Disposal of Certain Assets of Guizhou Branch

Guizhou Branch entered into a land reserve acquisition cooperation agreement with the People's Government of the Baiyun District of Guiyang, Guiyang Land Reserve Center, and Guizhou Aluminum Plant on November 13, 2015. As the land of Guizhou Aluminum Plant occupied by the electrolytic aluminum plant of Guizhou Branch shall be transferred to the respective land resources and reserve authorities, Guizhou Branch agreed to sell the relevant assets, including buildings and structures located on the land occupied by the electrolytic aluminum plant of Guizhou Branch to the Guiyang Land Reserve Center for a total consideration of RMB1.95 billion. The consideration was determined based on the asset appraisal conducted by an independent asset appraisal firm.

Disposal of the Environmental Protection Business

On May 30, 2016, the Board approved the transfer of the environmental protection assets in relation to the desulfurization, denitration and dedusting of the coal-fired generating units of five entities, namely Lanzhou Branch, Baotou Aluminum, Shandong Huayu, Maliantai Power Station and Liupanshan Power Station of Ningxia Energy, by way of public bidding. On June 29, 2016, the assets transfer agreement in relation to disposal of the above environmental protection assets were entered into between Beijing Aluminum SPC Environment Protection Tech Co., Ltd., which had won the bid for the acquisition of the assets, and us. Pursuant to the asset transfer agreement, the aggregate consideration for the above environmental protection assets disposal was RMB1,754 million which was paid in two installments in June 2016 and December 2016, respectively.

Development of Gold Leasing Financing

On May 30, 2016, the Board resolved to develop gold leasing business to financing working capital. On June 6, 2016, we entered into an agreement with Bank of Communications Co., Ltd., Beijing Branch to finance working capital via gold leasing. The proceeds from financing, which will be used to replenish working capital for our production and operation, amounted to RMB3 billion with a term of 12 months.

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."

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 China 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 Interest") 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 Interest was determined with reference to 65% of the valuation 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 agreed to pay the consideration for the Equity Interest 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 relevant interests at the London Interbank Offered Rate plus 0.9%, with the last installment 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 agreed to pay the consideration for the Equity Interest in five equal installments of US$413.3 million, with the relevant interests at the London Interbank Offered Rate plus 0.9%, with the last installment 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. As of the date of this annual report, the bank loans have been transferred to net off the first installment and Chinalco had paid four installments.

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 planned to issue up to 1.25 billion A Shares, with a nominal value of RMB1.00 each, by way of private placement for expected proceeds not exceeding RMB8 billion. We intended to issue the A Shares to no more than ten specific target subscribers within six months of obtaining the approval of the CSRC. The issue price of A Shares to be offered shall 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 intended to apply proceeds from this private placement to finance Chalco Xing County 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 retrieved its approval in July 2013 due to its on-going investigation of the sponsor of our proposed private placement of A Shares. The period of authorization to the Board relating to the adjusted issue plan was extended by our shareholders at the 2013 annual general meeting, A Share class meeting held on June 27, 2014 and H Share class meeting held on June 27, 2014, with an effective period of 12 months after the approval date. On January 4, 2015, we submitted the "Report regarding the resumption of the approval of non-public offering of shares of Aluminum Corporation of China Limited" to CSRC. On April 24, 2015, we received the Approval in Relation to the Non-public Issuance of Shares by Aluminum Corporation of China Limited issued by CSRC, pursuant to which we were approved to issue no more than 1,450,000,000 new shares. We completed the non-public issuance of A shares on June 15, 2015 and issued an additional 1,379,310,344 A Shares pursuant to the specific mandate as approved at the annual general meeting of the Company on June 27, 2014. On June 15, 2015, we completed the non-public issuance of 1,379,310,344 A shares. Upon completion, the total number of Shares of the Company were increased from 13,524,487,892 to 14,903,798,236.

Proposed Issuance of H Shares

On June 28, 2016, our shareholders at the 2015 annual general meeting passed a special resolution, which is valid until the earliest of (i) the conclusion of our next general meeting, (ii) the expiration of 12 months following the date of passage, 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 all the necessary approval by the CSRC and/or other relevant PRC government authorities.

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 Hong Kong. The Securities also have the benefit of a keepwell deed dated October 29, 2013 entered into by the Issuer, the Company, Chalco Hong Kong 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.

In April 2014, we completed the issuance of US$400 million in aggregate principal amount of 6.25% 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 Hong Kong. The Securities also have the benefit of a keepwell deed entered into by the Issuer, the Company, Chalco Hong Kong and the trustee and a deed of equity interest purchase undertaking 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 April 22, 2014. The net proceeds from the issue of the Securities have been on-lent to the Company or any of its subsidiaries for general corporate use. We intend to redeem US$400 million in aggregate principal amount of 6.25% senior perpetual capital securities on April 29, 2017 at the principal amount together with any distribution accrued thereon.

On October 27, 2015, our Company issued RMB2,000 million perpetual medium-term notes at an initial distribution rate of 5.50% (the "2015 Perpetual Medium-term Notes"). The proceeds from the issuance will be used for repayments of interest-bearing loans and borrowings. Coupon payments of 5.50% per annum on the 2015 Perpetual Medium-term Notes are paid annually in arrears from October 29, 2015 and may be deferred at the discretion of our Company. The 2015 Perpetual Medium-term Notes have no fixed maturity and are callable only at the Group's option on October 29, 2020 or any coupon distribution date after October 29, 2020 at their principal amounts together with any accrued, unpaid or deferred coupon distribution payments. While any coupon distribution payments are unpaid or deferred, the headquarters of the Company cannot declare or pay dividends to shareholders or decrease the share capital, or make material fixed asset investments of the headquarters of the Company.

On November 7, 2016, Chalco Hong Kong Investment Company Limited, a subsidiary of the Company, successfully issued US$500 million senior perpetual securities (the "Securities") at a rate of 4.25%. The Securities are guaranteed by one of our subsidiaries, Chalco Hong Kong. The Securities also have the benefit of a keepwell deed entered into by the Issuer, the Company, Chalco Hong Kong and the trustee. The Securities were listed on the Hong Kong Stock Exchange on November 7, 2016. The net proceeds from the issue of the Securities were on-lent to the Company or any of its subsidiaries for general corporate use.

## B. BUSINESS OVERVIEW

### Our Principal Products

We are a leading enterprise in the non-ferrous metal industry in China. In terms of comprehensive scale, we ranked among the top enterprises in the global aluminum industry. 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 chemical alumina 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, energy segment, trading segment and corporate and other operating segment accounted for approximately 6.5%, 20.5%, 3.0%, 69.7% and 0.3%, respectively, of our total revenues in 2016.

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 89% of our total production volume for this segment in 2016. Chemical alumina products are used in the production of chemical, pharmaceutical, ceramic and construction materials. In the process of refining bauxite into alumina, we also produce 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 procurement of alumina, other raw materials, supplemental materials and electrical power, the production and sale of primary aluminum and aluminum-related products, such as carbon products, aluminum alloy products and other electrolytic aluminum products. Our principal primary aluminum products are ingots, molten aluminum and aluminum alloys, which accounted for approximately 19%, 52% and 29%, respectively, of our total production volume of primary aluminum in 2016. Our standard 20 kilogram remelt ingots are used for general aluminum fabrication in the construction, electricity, electronics, transportation, 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 is mainly engaged in the trading of alumina, primary aluminum, other non-ferrous metal products, and crude fuels such as coal products, as well as supplemental materials to our internal manufacturing plants and external customers. We established our trading business under Chalco Trading as a separate segment in July 2010 as a result of our operational structural.

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 2016, we supplied the majority of the electricity we generated for our own production use, supplied a portion of the coal output to our own electric power plant and sold the remaining portion to external customers, including power generation enterprises and cement plants.

Our corporate and other operating segment mainly includes corporate and other aluminum-related research, development, and other activities of the Group.

Our Production Capacity

As of December 31, 2016, our annual alumina production capacity and primary aluminum production capacity was approximately 16.3 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:

| | As of December 31, 2016 | |
|---|---|---|
| Plant | Alumina | Primary Aluminum |
| | (in thousand tonnes)[(1)] | |
| Guangxi branch | 2,210 | - |
| Chalco Zhongzhou | 3,050 | - |
| Qinghai branch | - | 400 |
| Shanxi branch | 2,600 | - |
| Guizhou branch | - | 360 |
| Henan branch | 2,410 | - |
| Chalco Shandong | 2,270 | 55 |
| Zunyi Alumina | 1,000 | - |
| Chongqing branch | 800 | - |
| Shanxi Huaze | - | 424 |
| Lanzhou branch | - | 410 |
| Shanxi Huasheng | - | 220 |
| Fushun Aluminum | - | 110 |
| Zunyi Aluminum | - | 260 |
| Shandong Huayu | - | 200 |
| Gansu Hualu | - | 230 |
| Baotou Aluminum | - | 550 |
| Zhengzhou Institute | 20.0 | - |
| Liancheng branch | - | 538 |
| Guizhou Huajin | 1,600 | - |
| Xinghua Technology[(2)] | 350 | - |
| Total | 16,310 | 3,757 |

(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) We acquired a 66% equity interests in Xinghua Technology in December 2016.

In 2016, we produced approximately 12.0 million tonnes of alumina and 3.0 million tonnes of primary aluminum. Our production of alumina and primary aluminum represented approximately 20.0% and 9.1%, respectively, of the total output of alumina and primary aluminum in China in 2016.

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

| | Year Ended December 31, | | |
|---|---|---|---|
| Production Volume by Product | 2014 | 2015 | 2016 |
| | (in thousand tonnes, except Gallium) | | |
| Alumina segment | | | |
| Alumina | 12,024.0 | 13,296.4 | 12,027.0 |
| Chemical alumina products | 1,822.3 | 1,959.1 | 2,478.9 |
| Gallium (in tonnes) | 81.2 | 121.4 | 71 |
| Primary aluminum segment | | | |
| Primary aluminum[(1)] | 3,381.6 | 3,307.6 | 2,953.2 |
| Carbon | 1,877.4 | 1,786.6 | 1,680.4 |

(1) Including ingots, molten aluminum and aluminum alloys.

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 but 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 Bayer-sintering process and the Bayer-sintering combined process are 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 addition, we also produce some chemical alumina products (alumina hydrate and alumina-based industrial chemical products).

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. The primary aluminum we produce is in the form of ingots, molten aluminum and aluminum alloys.

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 the 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 nine alumina refineries and one research institute with a total designed annual production capacity of approximately 16.31 million tonnes as of December 31, 2016. One of our refineries is integrated with primary aluminum smelters. In 2016, we produced approximately 12.0 million tonnes of alumina, approximately 2.5 million tonnes of chemical alumina products and approximately 71 tonnes of gallium. The overall utilization rate for our refineries was 85% as of December 31, 2016. In 2016, we supplied approximately 6.15 million tonnes, or 44% of our total production of alumina to our own smelters and sold the remaining alumina to other domestic smelters. All of the chemical alumina products that we produced in 2016 were sold by alumina refineries directly to external customers or internally to Chalco Trading for subsequent external trading.

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

| | As of December 31, 2016 | | For the Year Ended December 31, 2016 | | |
|---|---|---|---|---|---|
| | Annual Production Capacity(1) | Utilization Rate(2) | Alumina Production Output | Chemical Alumina Products Output | Production Process |
| | (in thousand tonnes, except percentages) | | | | |
| Shanxi branch | 2,600 | 100 % | 1,736.8 | 74.7 | Bayer-sintering |
| Henan branch | 2,410 | 50 % | 1,130.4 | 137.7 | Bayer-sintering |
| Chalco Shandong | 2,270 | 100 % | 1,630.4 | 1,610.8 | Sintering and Bayer |
| Chalco Zhongzhou | 3,050 | 85 % | 2,138.4 | 491.5 | Sintering and Bayer |
| Guangxi branch | 2,210 | 100 % | 2,519.4 | 118.1 | Bayer |
| Zunyi Alumina | 1,000 | 100 % | 1,103.0 | 2.9 | Bayer |
| Chongqing branch | 800 | - | - | - | Bayer-sintering |
| Zhengzhou Institute(3) | 20 | - | - | 34.7 | Bayer |
| Guizhou Huajin | 1,600 | 100 % | 1,448.4 | - | Bayer |
| Xinghua Technology(4) | 350 | 100 % | 320.2 | 8.6 | Bayer |
| Total | 16,310 | 85 % | 12,027.0 | 2,478.9 | |

(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 as of the date indicated by our total designed annual production capacity.

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

(4) We acquired 66% equity interests in Xinghua Technology in December 2016.

Primary Aluminum

We operate 12 primary aluminum smelters in China. Our smelters had an aggregate annual production capacity of approximately 3.8 million tonnes as of December 31, 2016.

In 2016, we produced approximately 3.0 million tonnes of primary aluminum and the average utilization rate for our smelters was 87% as of December 31, 2016. The following table sets forth the annual production capacity, aluminum output, utilization rate and smelting equipment used in each of our aluminum smelters:

| Plant | As of December 31, 2016 Annual Production Capacity(1) | Utilization Rate(2) | | For the Year Ended December 31, 2016 Aluminum Output(3) | Smelting Equipment |
|---|---|---|---|---|---|
| | (in thousand tonnes, except percentages) | | | | |
| Baotou Aluminum | 550 | 99 | % | 573.1 | 200Ka, 240Ka and 400Ka pre-bake |
| Fushun Aluminum(4) | 110 | - | | - | 200Ka |
| Gansu Hualu(5) | 230 | - | | 8.2 | 160Ka and 210Ka pre-bake |
| Guizhou branch | 360 | 82 | % | 298.2 | 160Ka and 230Ka pre-bake |
| Lanzhou branch | 410 | 99 | % | 399.6 | 200Ka and 350Ka pre-bake |
| Qinghai branch | 400 | 99 | % | 407.3 | 180Ka and 200Ka pre-bake |
| Shandong Huayu | 200 | 98 | % | 217.0 | 240Ka pre-bake |
| Chalco Shandong(6) | 55 | - | | - | 200Ka pre-bake |
| Shanxi Huasheng | 220 | 97 | % | 224.2 | 300Ka pre-bake |
| Shanxi Huaze | 424 | 99 | % | 324.8 | 300Ka pre-bake |
| Zunyi Aluminum | 260 | 99 | % | 102.2 | 200Ka and 400Ka pre-bake |
| Liancheng branch | 538 | 99 | % | 398.6 | 200Ka and 500Ka pre-bake |
| Total | 3,757.0 | 87 | % | 2,953.2 | |

(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 as of the date indicated by our total

designed annual production capacity.

(3) Includes ingots, molten aluminum and aluminum alloys.

(4) We suspended the operations of primary aluminum production facilities in Fushun Aluminum since 2015.

(5) We suspended the operations of primary aluminum production facilities in Gansu Hualu since 2015. In 2016 Gansu Hualu produced 8,200 tonnes of alloy.

(6) We suspended the operations of primary aluminum production facilities in Chalco Shandong since June 2013.

Raw Materials

Alumina

Bauxite is the principal raw material in alumina production. Most of the bauxite in China is monohydrate, consisting mainly of Aluminosilicate compounds. 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 the Shanxi Province.

Rock Formation and Mineralization. Except for our Guangxi Pingguo mine which is an accumulation deposit due to original erosion, the bauxite deposits of our mines in China usually have similar stratigraphic sequences. Primary bauxite deposit, as a type of sedimentary boehmite ($Al_2O_3.H_2O$) the Carboniferous or Permian age, is contained in clay rock, limestone or coal seams. A zonary 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 in our 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.

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 cut-off 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. We believe that the Chinese bauxite deposit estimation 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. Except for Chalco Shandong, 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 consumed approximately 2.14 tonnes of bauxite to produce one tonne of alumina in 2016. Our mines supplied approximately 13.6 million tonnes of bauxite to our refineries in 2016. We purchase bauxite from a number of suppliers and do not depend on any supplier for our bauxite requirements. In 2016, bauxite secured from other suppliers accounted for approximately 53% of our total bauxite supply, primarily because our demand for bauxite exceeded the production of our mines.

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

| | Year Ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2014 | | 2015 | | 2016 | |
| | Bauxite Supply | Percentage of Bauxite Supply | Bauxite Supply | Percentage of Bauxite Supply | Bauxite Supply | Percentage of Bauxite Supply |
| | | % | | % | | % |
| | (in thousand tonnes, except percentages) | | | | | |
| Own mines | 17,542.6 | 55.4 | 17,930.2 | 55.4 | 13,603.5 | 47 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Other suppliers | 14,105.4 | 44.6 | 14,452.0 | 44.6 | 15,384.3 | 53 |
| Total | 31,648.0 | 100.0 | 32,382.2 | 100.0 | 28,987.8 | 100 |

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Own Mines. As of December 31, 2016, we owned and operated 18 mines in China that had approximately 286.6 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. We also hold the requisite mining permit or exploration permit for two bauxite mines and are in the process of applying for mining right for PT VISITAMA in West Kalimantan, Indonesia through our 96.28% owned subsidiary, PT Nusapati Prima. Our bauxite deposits in Indonesia are lateritic gibbsite and were formed by weathering and leaching of aluminum-rich silicate rock in tropical climates. We used low temperature Bayer process to refine alumina from our bauxite deposits in Indonesia, which results in relatively low energy consumption and high dissolution rate, before our bauxite mining in Indonesia was suspended since September 2014.

For the three years ended December 31, 2014, 2015 and 2016, we extracted approximately 17.3 million tonnes, 17.9 million tonnes and 14.5 million tonnes, respectively, of bauxite from our mines. The decrease of production of bauxite from 2015 to 2016 was primarily due to production adjustments adopted by our Shanxi branch, whilst other mines remained or slight increased their production volumes in 2016. In addition, following the disposal of the 50% of equity interests in Shanxi Huaxing in 2015, it is no longer a subsidiary of the Company and therefore we did not consolidate its production volumes into our accounts.

Our reported bauxite reserves for our 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 bauxite or aluminum for the years ended December 31, 2014, 2015 and 2016, or the three year historical contracted prices for such 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 mines as of December 31, 2016:

| Mine[1] | Location | Nature of ownership[1] | Mining method | Permit Renewal[2] | Present Condition/ Current State of Exploration | Bauxite Production (in thousand tonnes) |
|---|---|---|---|---|---|---|
| Pingguo mine | Guangxi Zhuang Autonomous Region, China | 100% owned and operated by Chalco | Open pit | October 2030 - April 2036 | Fully developed and operational | 5,949 |
| Guizhou mine[3] | Guizhou Province, China | 100% owned and operated by Chalco | Open pit/underground | March 2019 - December 2038 | Fully developed and operational | 1,468 |
| Zunyi mine | Guizhou Province, China | 100% owned and operated by Chalco | Open pit/underground | August 2017 - October 2026 | Partly developed and operational | 344 |
| Xiaoyi mine | Shanxi Province, China | 100% owned and operated by Chalco | Open pit | August 2017 - May 2035 | Fully developed and operational | 1,180 |
| Shanxi Other Mines | Shanxi Province, China | 100% owned and operated by Chalco | Open pit/underground | April 2017[4] - July 2035 | Fully developed and operational | 1,430 |
| Mianchi mine | | | | | | 453 |

| | | | | |
|---|---|---|---|---|
| Henan Province, China | 100% owned and operated by Chalco | Open pit/underground | December 2016[4]-October 2031 | Partly developed and operational |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Luoyang mine | Henan Province, China | 100% owned and operated by Chalco | Open pit/underground | December 2015[4] October 2031 | Partly developed and operational | 989 |
| Xiaoguan mine | Henan Province, China | 100% owned and operated by Chalco | Open pit/underground | May 2017 - October 2031 | Fully developed and operational | 346 |
| Gongyi mine | Henan Province, China | 100% owned and operated by Chalco | Open pit/underground | August 2017- April 2029 | Fully developed and operational | 611 |
| Dengfeng mine | Henan Province, China | 100% owned and operated by Chalco | Open pit/underground | July 2016[4] - July 2019 | Partly developed and operational | 305 |
| Xinmi mine | Henan Province, China | 100% owned and operated by Chalco | Open pit/underground | July 2017 - July 2020 | Fully developed and operational | 8 |
| Sanmenxia mine | Henan Province, China | 100% owned and operated by Chalco | Underground | April 2017[4] - October 2026 | Fully developed and operational | 42 |
| Xuchang mine | Henan Province, China | 100% owned and operated by Chalco | Open pit/underground | February 2017[4] - August 2024 | Partly developed and operational | 75 |
| Jiaozuo mine | Henan Province, China | 100% owned and operated by Chalco | Open pit/underground | September 2018 - October 2024 | Partly developed and operational | 432 |
| Pingdingshan mine[5] | Henan Province, China | 100% owned and operated by Chalco | Open pit/underground | June 2017 October 2024 | Partly developed and operational | 453 |
| Yangquan mine | Shanxi Province, China | 100% owned and operated by Chalco | Open pit | September 2031 - May 2036 | Fully developed and operational | 408 |
| Nanchuan mine | Chongqing Municipality, China | 100% owned and operated by Chalco | Underground | May 2017 - November 2026 | Suspended production | - |
| PT ALUSENTOSA | West Kalimantan, Indonesia | Owned and operated by PT Nusapati Prima, a 96.28% subsidiary of Chalco | Open pit | December 2027 | Suspended production | - |
| PT KALMIN | West Kalimantan, Indonesia | Owned and operated by PT Nusapati Prima, a 96.28% subsidiary of Chalco | Open pit | December 2027 | Suspended production | - |
| PT VISITAMA | West Kalimantan, Indonesia | Owned and operated by PT Nusapati Prima, a 96.28% subsidiary of | Open pit | December 2015 | In the process of acquiring mining right | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Chalco | | | | |
| Laos bauxite mine | Attapeu Province and Sekong Province, Laos | Owned and operated by Lao Service Mining Co., Ltd., a 60% subsidiary of Chalco | Open pit | June 2017 | Exploration completed | - |

(1) Excluding Huaxing mine as it is no longer a subsidiary of ours.

(2) All conditions to retain our properties or leases have been fulfilled as of December 31, 2016. 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.

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

(4) We are in the process

of renewing these permits.

(5) Including Ruzhou mine.

We are required to obtain mining rights permits to conduct mining activities. Under PRC laws and regulations, a mining enterprise must prepare and submit exploration reports for a mine to the local government to obtain a mining rights permit for a mine. A mining right owner is also permitted to lease the mining right through a lease arrangement. The mining rights permit is subject to renewal on a regular basis.

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Furthermore, the mining right owner is required to obtain land use rights on the land in order to operate the mines. We lease the land use rights relating to our 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 other mines 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.

For our 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 mines in China as of December 31, 2016:

| Mine(1) | Reserves (2)(3) (million tonnes) | $Al_2O_3$ | $S_1O_2$ | Ratio of Average A/S(4) |
|---|---|---|---|---|
| Pingguo mine | 57.15 | 53.69 | 4.86 | 11.04 |
| Guizhou No. 1 mine | 1.26 | 65.07 | 11.36 | 5.73 |
| Guizhou No. 2 mine | 52.38 | 64.39 | 8.7 | 7.4 |
| Zunyi mine | 7.03 | 58.98 | 10.39 | 5.68 |
| Xiaoyi mine | 23.92 | 62.5 | 13.43 | 4.65 |
| Shanxi Other Mines | 16.68 | 63.43 | 11.63 | 5.45 |
| Mianchi mine | 3.12 | 62.85 | 12.3 | 5.11 |
| Luoyang mine | 3.21 | 60.67 | 9.82 | 6.18 |
| Xiaoguan mine | 25.99 | 63.53 | 15.06 | 4.22 |
| Gongyi mine | 2.44 | 64.11 | 14.02 | 4.57 |
| Dengfeng mine | 1.6 | 62.67 | 12.65 | 4.95 |
| Xinmi mine | 2.26 | 66.58 | 11.04 | 6.03 |
| Sanmenxia mine | 47.18 | 63.34 | 12.74 | 4.97 |
| Xuchang mine | 1.44 | 62.52 | 10.01 | 6.24 |
| Jiaozuo mine | 1.27 | 58.76 | 14.95 | 3.93 |
| Pingdingshan mine | 2.04 | 61.57 | 13.03 | 4.73 |
| Yangquan mine | 8.51 | 58.80 | 13.54 | 4.34 |
| Nanchuan mine | 29.09 | 60.60 | 13.84 | 4.38 |
| Total (average) reserves | 286.57 | 61.04 | 10.67 | 5.72 |
| By reserve type | | | | |
| Proven reserve | 86.41 | 60.84 | 10.26 | 5.93 |
| Probable reserve | 200.16 | 61.13 | 10.85 | 5.63 |
| Total (average) reserves | 286.57 | 61.04 | 10.67 | 5.72 |

(1) Excluding Huaxing mine as it is no longer a subsidiary of ours.

(2) 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.

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

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

We have been in compliance with the National Mining Safety Law and related rules and regulations in China. We closely supervise and routinely inspect mining conditions with continual implementation of safety measures and procedures at our own bauxite mines and safety training for our mining personnel. In 2016, we extracted approximately 14.5 million tonnes of bauxite from our mines and did not experience any mining accidents that

involved serious work injuries or death.
Other Suppliers. In addition to our mines, we also source bauxite from other suppliers. The 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 53% of our total bauxite supply in 2016. 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 mines, and the remaining requirements from other suppliers.

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 Bayer-sintering process can refine bauxite with an alumina-to-silica ratio as low as 4:1. In 2016, the average alumina-to-silica ratio of the proven and probable reserves of our mines ranges from approximately 3.93:1 to 11.04:1.

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. Our total bauxite cost is currently influenced by the following factors:

- the cost of our mining operations;
- the market conditions relating to purchases from small independent mines; and
- the market conditions relating to purchases from overseas.

The average purchase price of bauxite per tonne from our other suppliers in 2014, 2015 and 2016 was approximately RMB412, RMB383 and RMB328 respectively. The average cost of bauxite per tonne from our mines in 2014, 2015 and 2016 was approximately RMB246.9, RMB251.6 and RMB219.0, respectively.

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 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:

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2014 | 2015 | 2016 |
| | (RMB in thousands) | | |
| Capital Expenditures | | | |
| Infrastructure construction | 1,116,770.3 | 950,980.6 | 478,024.6 |
| Facility upgrade | 372,256.8 | 62,910.9 | 35,222.9 |
| Total | 1,489,027.1 | 1,013,891.5 | 513,247.5 |

Primary Aluminum

An average of approximately 1.91 tonnes of alumina and 13,496 kWh of electricity was required to produce one tonne of primary aluminum ingots in 2016.

Alumina and electricity, the two principal components of costs in the smelting process, accounted for approximately 39% and 37%, respectively, of our unit primary aluminum production costs in 2016. Apart from alumina and electricity, we also require carbon anodes, carbon cathodes, fluoride salt and cryolite for our smelting operations.

Alumina is the main raw material used in the production of primary aluminum. 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 procurement 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 natural gas are the principal materials and energy 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 requirements from regional power grids at government-mandated rates or directly from power generation enterprises. Most of our power supply agreements are one to three year renewable agreements. 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 are 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 mining area, Guizhou Province. In addition, we have acquired 70.82% of the equity interest in the 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 minority equity interests are currently in the extraction or trial production stage, except:

- Chalco Liupanshui, a joint venture company in which we hold a 49% equity interest;
- Huozhou Coal Group Xingshengyuan Coal Co., Ltd., an associate company in which Shanxi Huasheng holds 43.03% of the equity interest;
- Guizhou Yuneng, an associate company in which we hold 25% of the equity interest; and

Guizhou Yuneng is under development. The production of Huozhou Coal Group Xingshengyuan Coal Co., Ltd. and one of the mines owned by Chalco Liupanshui is currently suspended due to production technology renovation. See "- B. Property, Plants and Equipment" for details of coal mines that we operate. 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.

Alkali is used as a supplemental material in alumina refining. The Bayer-sintering process and the Bayer-sintering combined process require soda ash while caustic soda is used in the Bayer process. Our alumina refineries use 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. The availability and price of electricity are key factors in our primary aluminum production. Though the electricity prices were in a general downward trend in recent years as a result of the reform of the PRC electricity system, electricity costs may fluctuate from time to time due to 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 four of our smelters and purchase our remaining electric power requirements directly from power generation enterprises. As of December 31, 2016, eight of our smelters have entered into direct purchase agreements with power generation enterprises. Direct purchase transactions are normally organized by the local government and the direct purchase agreements are entered into annually. The average electricity cost (including tax) of our smelters was approximately RMB0.29/kWh in 2016, which decreased by 16% compared to 2015, primarily due to the decreased purchasing cost as a result of the national reform of electricity industry.

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. Guizhou branch is able to produce carbon cathodes.

Sales and Marketing

We coordinate substantially all of our sales and marketing activities for our self-produced alumina products and some of our sales and marketing activities for 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 chemical alumina 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-sale 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 2016, we supplied approximately 6.15 million tonnes of alumina produced at our refineries to our smelters, which represented approximately 44% 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 2.7 million tonnes of outsourced alumina in 2016.

The sales prices of alumina that our alumina refineries sell internally to Chalco Trading are determined based on our budgeted sale prices, spot market prices and the prices of primary aluminum on SHFE. 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. We primarily sourced alumina from third-party suppliers on the spot market, and 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, the price determination mechanism and payment method. Our customers are normally required to pay for their procurement before each delivery. As a result, the spot price of alumina and fluctuations of primary aluminum prices on the SHFE affect the alumina prices at which we sell.

Chalco Trading sells the rest of our self-produced and outsourced alumina products on the spot market. We set the price for the external sales of alumina products after taking into account the following factors:

- international and domestic supply-demand situation;
- CIF Chinese ports prices for alumina imports into China and other relevant import expenses;
- international and domestic transportation costs; and
- our short-term and mid-term projections for alumina prices;

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 smelting subsidiaries and branches sell a portion of our primary aluminum output directly to external customers. They also sell a portion of our primary aluminum output internally to Chalco Trading at prices based on the spot prices of primary aluminum on Yangtze or Nanchu. Chalco Trading then coordinates the external sales of primary aluminum. Chalco Trading sells 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. The terms for our sales contracts for primary aluminum are typically one year. We price our primary aluminum products based on the SHFE prices and spot market prices for primary aluminum.
- 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 selling prices with reference to various factors, such as market spot prices and transportation costs.

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 2.62 million tonnes of outsourced primary aluminum in 2016.

To improve the efficiency of our distribution, we divide our China market into the following regions:

- 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
- central China.

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. 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; spot prices in the regions of eastern China and southern China; 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. Each of our smelters is normally responsible for the sale of products to the customers from neighbouring markets, negotiating the pricing and delivery terms based on market conditions, for contract to be entered into. In general, we satisfy each purchase order with products from our nearest smelter to minimize transportation costs.

Chemical alumina products and Gallium

Chemical alumina 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 chemical alumina products directly to external customers or indirectly to external customers through Chalco Trading for subsequent external trading.

We sell most of our chemical alumina products and gallium in China. Prices for our chemical alumina products and gallium are determined through negotiations with our customers, taking into consideration the market conditions. Our total sales of gallium in 2014, 2015 and 2016 amounted to approximately RMB140.9 million, RMB27.99 million and RMB108 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 prevailing market conditions. Ningxia Energy consumes 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 6.0 million tonnes of outsourced coal in 2016.

Trading of Outsourced Non-ferrous Metal Products and Other Materials

Since late 2009, we have been actively engaged in the trading of alumina and primary aluminum sourced from third-party suppliers. Please see "- Alumina" and "- Primary Aluminum" for more details. Through Chalco Trading, 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 2016, we sold approximately 1.6 million 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 both by trucks and by rail.

Principal Facilities

Our principal facilities include 23 principal production plants and our Zhengzhou Institute. Set forth below is a description of our principal production plants.

Guangxi Branch

Our Guangxi branch commenced operations in 1994 and is located in Guangxi Zhuang Autonomous Region in southwestern China, an area rich in bauxite reserves. Our Guangxi branch obtains bauxite delivered via highway from our Pingguo mine, one of our wholly-owned mines, located less than 17 kilometers from our Guangxi branch.

Our Pingguo mine contains large, easily exploitable bauxite reserves with high alumina-to-silica ratios. Our 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, 2016. In 2016, our Guangxi branch produced approximately 2,519,000 tonnes of alumina, along with approximately 118,140 tonnes of chemical alumina products. In 2014, we abandoned primary aluminum production facilities of our Guangxi branch.

Guizhou Branch

Our Guizhou branch commenced its smelting operations in 1966 and was subsequently expanded to include alumina refining operations in 1978. Our Guizhou branch uses 160Ka and 230Ka pre-bake reduction pot-lines in its primary aluminum production. Guizhou Smelter has undergone technological innovations and overhauls since its inception. As of December 31, 2016, our Guizhou branch had an annual primary aluminum production capacity of approximately 360,000 tonnes. In 2016, our Guizhou branch produced approximately 298,200 tonnes of primary aluminum.

Our Guizhou branch also contains a modern carbon production facility, which produces carbon cathodes and carbon anodes.

Henan Branch

Our 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 our 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. 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, our 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 certain of our mines and through purchases on the market. Our Henan branch had an annual alumina production capacity of approximately 2,410,000 tonnes as of December 31, 2016. In 2016, our Henan branch produced approximately 1,130,370 tonnes of alumina and 137,690 tonnes of chemical alumina products.

Chalco Shandong

Chalco Shandong was incorporated as one of our subsidiaries in the PRC in 2015. The predecessor of Chalco Shandong was our Shandong Branch, which commenced operations in 1954, Chalco Shandong has the capacity to produce alumina, primary aluminum, and chemical alumina products. Bauxite is delivered to Chalco Shandong 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 its alumina through the Bayer-sintering process and the Bayer process. Chalco Shandong purchases some bauxite from overseas and the rest from small third-party mines in Henan and Shanxi Provinces. Chalco Shandong had an annual alumina production capacity of approximately 2,270,000 tonnes as of December 31, 2016. It produced approximately 1,630,380 tonnes of alumina in 2016.

In addition, Chalco Shandong produces substantial amounts of Chemical alumina products and produced approximately 1,610,810 tonnes of chemical alumina products in 2016. It is the largest and most technologically advanced production facility for chemical alumina products in China with the ability to produce the widest variety of these products.

As of December 31, 2016, Chalco Shandong's annual primary aluminum production capacity was approximately 55,000 tonnes, however, it did not produce any primary aluminum in 2016.

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 180Ka 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 branches and Chalco Zhongzhou, but incurs higher transportation costs for both raw materials and its primary aluminum products than our other branches.

Our Qinghai branch had an annual primary aluminum production capacity of approximately 400,000 tonnes as of December 31, 2016. It produced approximately 407,300 tonnes of primary aluminum in 2016.

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 our Xiaoyi mine in Shanxi Province. Our Shanxi branch is a stand-alone alumina plant. Shanxi branch had an annual alumina production capacity of approximately 2,600,000 tonnes as of December 31, 2016. It produced approximately 1,736,840 tonnes of alumina and 74,710 tonnes of chemical alumina products in 2016.

Our Shanxi branch's production facilities are primarily imported. Shanxi branch relies on bauxite from our mines as well as external suppliers. It is in the proximity of large coal mines and substantial water resources.

Chalco Zhongzhou

Located in Henan Province, Chalco Zhongzhou is a stand-alone alumina plant, located near abundant bauxite, coal and water supplies. Chalco Zhongzhou was incorporated as one of our subsidiaries in the PRC in 2015. The predecessor of Chalco Zhongzhou was our Zhongzhou Branch. 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 Bayer-sintering process and Bayer process. Chalco Zhongzhou obtains bauxite supplies partly from extractions of our mines, and partly from external suppliers in Henan and Shanxi Provinces and overseas.

We abandoned alumina production facilities with a production capacity for 30,000 tonnes in 2014. Chalco Zhongzhou had an annual alumina production capacity of approximately 3,050,000 tonnes as of December 31, 2016. Chalco Zhongzhou produced approximately 2,138,440 tonnes of alumina and approximately 491,460 tonnes of chemical alumina products in 2016.

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 a 73.28% equity interest in Zunyi Alumina. Zunyi Alumina completed the construction of alumina production facilities and commenced operations in 2010. Zunyi Alumina had an annual alumina production capacity of approximately 1,000,000 tonnes as of December 31, 2016. Zunyi Alumina produced approximately 1,103,010 tonnes of alumina and 2,890 tonnes of chemical alumina products in 2016.

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, 2016. Chongqing branch did not produce any alumina or chemical alumina products in 2016. we have suspended production in Chongqing Branch since July 2014 due to the relatively significant decrease in the price of alumina as compared with the price of alumina during the construction period, large negative variation of mineral resources and the high costs of natural gas and other energy.

Guizhou Huajin

Established in July 2014 and located in Qingzhen, Guizhou Province, Guizhou Huajin specializes in producing alumina products. Guizhou Huajin had an annual alumina production capacity of approximately 1,600,000 tonnes as of December 31, 2016. Guizhou Huajin produced approximately 1,448,360 tonnes of alumina products in 2016.

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 entities: our Lanzhou branch and Northwest Aluminum. Our Lanzhou branch owns a primary aluminum smelting plant with a designed annual primary aluminum production capacity of approximately 410,000 tonnes as of December 31, 2016. It produced approximately 399,600 tonnes of primary aluminum in 2016.

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 424,000 tonnes as of December 31, 2016 and it produced approximately 324,800 tonnes of primary aluminum in 2016. We currently hold a 60% equity interest in Shanxi Huaze.

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 for primary aluminum of approximately 220,000 tonnes as of December 31, 2016. In 2016, Shanxi Huasheng produced approximately 224,200 tonnes of primary aluminum. We currently hold 51% equity interest in Shanxi Huasheng.

Zunyi Aluminum

Zunyi Aluminum is situated in Guizhou Province. We currently hold 62.1% equity interest in Zunyi Aluminum. Zunyi Aluminum's annual primary aluminum production capacity was approximately 260,000 tonnes as of December 31, 2016. In 2016, it produced approximately 102,200 tonnes of primary aluminum.

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 110,000 tonnes as of December 31, 2016. Fushun Aluminum did not produce any primary aluminum in 2016. We have suspended production in Fushun Aluminum since October 2015 due to the relatively significant decrease in the price of primary aluminum and high costs of electricity.

Shandong Huayu

Shandong Huayu is situated in Shandong Province and is a stand-alone primary aluminum plant. We currently hold 55% equity interest in Shandong Huayu. Shandong Huayu had an annual primary aluminum production capacity of approximately 200,000 tonnes as of December 31, 2016. Shandong Huayu also has supporting facilities and coal-fired generators. In 2016, Shandong Huayu produced approximately 217,000 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. We hold a 51% equity interest in Gansu Hualu. Gansu Hualu had an annual primary aluminum production capacity of approximately 230,000 tonnes as of December 31, 2016. Since November 2015, the production of primary aluminum has been suspended. In 2016, it produced approximately 8,200 tonnes of alloy.

Baotou Aluminum

Baotou Aluminum is located in the 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 an annual primary aluminum production capacity of approximately 550,000 tonnes as of December 31, 2016. In 2016, it produced approximately 573,100 tonnes of primary aluminum.

Liancheng branch

Our Liancheng branch is located in Gansu Province. In late May, 2008, we acquired 100% of the equity interest in 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. Our Liancheng branch had an annual primary aluminum production capacity of approximately 538,000 tonnes as of December 31, 2016. It produced approximately 398,600 tonnes of primary aluminum in 2016.

Longmen Aluminum

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

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, 2015. Since 2015, we suspended production and have not produced any aluminum fabrication products at Chalco Nanhai.

Ningxia Energy

We acquired a 70.82% equity interest in Ningxia Energy in January 2013. Please see "- A. History and Development of the Company - Significant Acquisitions H also and Joint Ventures." Ningxia Energy was established in June 2003. It is an integrated power generation company with total installed capacity of 2861 MW. It also operates coal mines located in the Ningxia Autonomous Region. Its principal business includes conventional coal-fire power generation and renewable energy generation. In 2016, Ningxia Energy produced approximately 8.2 million tonnes of coal and approximately 8.6 billion kWh of electricity.

Zhengzhou Institute

The Zhengzhou Institute, located in Zhengzhou, Henan Province, was incorporated as our subsidiaries in 2015. Its predecessor was established in August 1965 and has served as the center for our research and development efforts. The Zhengzhou Institute specializes in the research and development of technologies for alumina smelting, alumina refining and the development of new products of chemical alumina. Zhengzhou Institute is the only 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 Zhengzhou 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. In 2014, our Zhengzhou Institute abandoned its primary aluminum production facilities. As of December 31, 2016, the Zhengzhou Institute had a limited production capacity for chemical alumina products, which it uses in connection with its research and development efforts.

Xinghua Technology

We acquired a 66% equity interest in Xinghua Technology in December 2016. Located at Shanxi Province, Xinghua Technology is an alumina plant with an annual alumina production capacity of approximately 350,000 tonnes as of December 31, 2016. It produced approximately 320,200 tonnes of alumina and approximately 8,550 tonnes of chemical alumina in 2016.

Competition

Competition from Domestic Competitors

Alumina

The Group is a leading enterprise in non-ferrous metal industry 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 capabilities in technology research and hold certain proprietary technologies and patents; and
- we have a substantial workforce that has extensive experience in production and management.

In addition, 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, which established a high entry barrier for new alumina producers in China and imposed stringent requirement for existing alumina companies.

Primary Aluminum

We derived all of our primary aluminum revenues from domestic sales in 2016. Our competitors include other domestic and international primary aluminum producers that conduct sales in China. In 2016, our primary aluminum production represented approximately 9.1% of total domestic production in China.

We are a leading enterprise in non-ferrous metal industry in China. Currently, 19 primary aluminum producers in China (including Chalco) have annual production capacity of 500,000 tonnes or more, which collectively represent approximately 86% of the total primary aluminum production capacity in China. Among these 19 primary aluminum producers, 12 primary aluminum producers in China (including Chalco) have annual production capacities of one million tonnes or more, which represent approximately 75% of the total primary aluminum production capacity in China as of 2016. 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 and other administrative regulations, new aluminum projects for expanding production capacity must be approved by the relevant administrative departments and must have stable supply of alumina.

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

- Scale of production. With 12 primary aluminum smelters, 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 a leading 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. We have maintained and will continue to improve on the high quality standards for our primary aluminum which has satisfied national and industrial standards and customers' need.

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

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 2016, China imported approximately 3.03 million tonnes of alumina, representing approximately a 35% decrease from 2015. China had net import of approximately 180,900 tonnes of primary aluminum in 2016, which represented a 47.07% increase from 2015. 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 we will continue to benefit from certain PRC governmental policies that promote 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 2016, we completed 136 technological projects, including 89 independent research and development projects, 41 special key science and technology projects and six science and technology application projects. In addition, we filed a total of 109 patent applications in 2016.

As of December 31, 2016, we owned 1,472 patents, which were primarily related to technologies and processes, equipment and new products. Once registered, a patent in China for an invention is valid for 20 years and for a utility model or a design, 10 years from the date of the patent application. As of December 31, 2016, we owned 25 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 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 air and water 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.

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 and the discharge of these pollutants when treated must comply with national and local discharge limits.

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 2016, we passed the annual review and these 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 727,000 tonnes of standard coal in 2016. 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 RMB520.2 million, RMB627.3 million and RMB657.5 million for 2014, 2015 and 2016, respectively. In 2016, we did not have any major environmental pollution incidents.

Insurance

We maintain insurance coverage for our fixed assets such as plant, machinery, equipment, office facilities and transportation vehicles against accidents or natural disasters such as typhoons, hurricanes, floods, landslides and lightning strikes. However, there are certain types of losses, such as losses from war, acts of terrorism and nuclear radiation, for which we cannot obtain insurance at a reasonable cost or at all.

We are covered under the work-related injury insurance required by the relevant local government labor departments, and we have procured additional business accidental insurance for our employees. More extensive insurance is either unavailable in China or would impose a cost on our operations that would reduce our competitiveness.

Our insurance premiums were RMB33.4 million, RMB33.2 million and RMB35.8 million in 2014, 2015 and 2016, respectively.

Seasonality

Our business is not subject to seasonality.

Cyber Security

With respect to our internal internet policies on cyber-security, we have established an information safety management system and issued internal regulations on cyber-security, internal hardware and data safety systems and we are gradually implementing measures relating to the office environment information safety management, information system access control, protection from any malicious software, and internal review and audit of information safety risks, in order to prevent loss of information due to cyber-security incidents, network outages or hardware incidents. In 2016, we did not experience any material cyber-security incidents or related losses.

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 four 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 rights and mining right permits;
- the MIIT, which formulates industrial policies and investment guidelines for all industries including the aluminium industry; and
- the CSRC, the securities regulatory commission of China.

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 is also subject to supervision of the CSRC. Offering of bonds by a PRC-incorporated company outside the PRC shall be filed with NDRC. 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 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

The 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. Aluminum smelting enterprises must be appropriately distributed across the relevant regions according to certain conditions including availability of resources, energy and environment. Pursuant to the Standard Conditions, 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 Standard Conditions further sets standards for production scale and major external conditions for newly established bauxite mining, alumina, electrolytic aluminum and recycled aluminum projects. The MIIT promulgated on April 4, 2014, January 4, 2015 and February 14, 2016, respectively, the first, the second and the third lists of enterprises that meet the Standard Conditions for the aluminum industry. Most of our production branches and subsidiaries have met the Standard Conditions and are included on these lists.

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.

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 a part 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 December 2007, 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 of molten aluminum but less than 13,800 kWh per tonne of molten aluminum, 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 of molten aluminum, such smelter must pay additional RMB0.08 for per kWh for the electricity used.

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 of molten aluminum but less than 13,800 kWh per tonne of molten aluminum, 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 of molten aluminum, such smelter must pay additional RMB0.08 for per kWh for the electricity used.
In March 2015, new policies and reforms relating to electricity generation, retail, usage, and other related sectors were introduced. Under "Several Opinions of the CPC Central Committee and the State Council on Further Deepening the Reform of the Electric Power System", a series of reforms relating to electricity pricing, distribution and retail segments, electricity trading, distributed generation, and other aspects has been put forward. We expect that these electricity system reforms will bring about profound impacts on China's electricity market and aluminum industry.
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.

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 fulfil 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. Mineral products that have been illegally extracted and the related 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 strictly monitored. In December 2014, the MIIT issued the Guidance for National Industrial Efficiency, which sets forth industrial efficiency standards for producers of major products in industries that involve high energy consumption, which included electrolytic aluminum and aluminum oxide products.

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.

C. ORGANIZATIONAL STRUCTURE

Below is a summary of our corporate structure and principal subsidiaries as of December 31, 2016:

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| 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 fabricated products and carbon products |
| Chalco Hong Kong Ltd.[(1)] | 100% | Overseas investments and alumina 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 non-ferrous metal products |
| Shandong Huayu Alloy Materials Co., Ltd. | 55% | Manufacture and distribution of aluminum alloy |
| Chinalco Shanxi Jiaokou Xinghua Technology Ltd. [(2)] | 66% | Manufacture and distribution of alumina |
| Chinalco Shanghai Company Limited | 60% | Trading and engineering project management |
| 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 |
| 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 |
| Guizhou Huajin Aluminum Co., Ltd. | 60% | Manufacture and distribution of alumina |
| Chalco Zhengzhou Research Institute of Non-ferrous Metal Co., Ltd. | 100% | Research and development services |
| Chalco Shandong Co., Ltd. | 100% | Manufacture and distribution of alumina |
| Chalco Zhongzhou Aluminum Co., Ltd. . | 100% | Manufacture and distribution of alumina |
| China Aluminum Logistics Group Corporation Co., Ltd. [(3)] | 100% | Logistic transportation |

(1) Chalco HongKong Ltd. is incorporated in Hong

Kong. All other principal subsidiaries are incorporated in the PRC.

(2) We directly hold 33% shares and indirectly hold 33% shares, through Chalco Shandong Co., Ltd.

(3) We directly hold 81.87% shares and indirectly hold 18.13% shares, through China Aluminum International Trading Co., Ltd. of China Aluminum Logistics Group Corporation Co., Ltd.

## 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. Prior to suspension of productions, the two mines were 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 2018. Luochuan mine is an underground mine. We have completed the exploration but have not commenced development of Luochuan mine. As of the date of this annual report, neither proven nor probable reserves have been established in accordance with United States Securities and Exchange Commission Industry Guide 7 ("Industry Guide 7").

We acquired the mining rights for certain coal deposits Guizhou Province, namely Laodonghe mine, in January 2013 through Chalco Guizhou Mining Co., Ltd. We held 80.0% of the equity interest of Laodonghe mine. 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 in accordance with Industry Guide 7.

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 in accordance with Industry Guide 7.

Wangwa mine and Wangwa No. 2 mine are currently in extraction stage. We primarily use comprehensive 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 completed construction for capacity expansion and technology upgrade and is currently in trial production. The mining permit of Yindonggou mine will expire in July 2036. Ningxia Energy holds 50% of the interest in Yinxingyijing mine with the joint owner not participating in the operation of such mine. Yinxingyijing mine is currently under development. The exploration permit of Yinxingyijing mine will expire in August 2018 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(1) | 2007 |
| Commencement of extraction | 1990(1) | 2010 |
| Permit renewal | May 2017 | July 2017 |
| Mining recovery rate (%)(2) | 78 | 81 |
| Depth of mine (meters underground) | 400 | 400 |
| Average thickness of main coal seam (meters) | 6-11 | 8-10 |
| Calorific value (Kcal/kg) | 4,900-5,100 | 4,800-5,000 |
| Sulphur content (%) | 1.1 | 1.2 |
| Average ash content (%) | 14.2 | 15.3 |

(1) Wangwa mine is currently under construction for expansion, the original production capacity of which was 1.5 million tonnes.

(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, 2016, Ningxia Energy incurred capital expenditures of approximately RMB457.9 million on infrastructure construction.

Land

Chinalco leases to us 410 pieces or parcels of land, located in eight provinces, covering an aggregate area of approximately 50.33 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:

- 398 pieces of allocated land with an area of approximately 49.03 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, Haidian 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. As of the date of this annual report, we leased 171 buildings to Chinalco, with an aggregate gross area of approximately 207,033 square meters. Chinalco leases 88 buildings to us, with an aggregate gross area of approximately 160,754 square meters. 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, Haidian 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. In March 2016, we renewed the tenancy agreement with its term to be expired on December 31, 2017, with an aggregate gross area of approximately 22,285 square meters.

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

Our Expansion

Our expansion projects in 2016 primarily include:

- The mining project of Zhongzhou for the bauxite at Duancun-Leigou: Investment in project construction amounted to RMB1,358 million, and by the end of 2016, an aggregate of RMB1,079 million of capital expenditure had been incurred. In November 2016, the project was ready for mining operation and commenced trial production, creating an additional production capacity of 1,600,000 tonnes of bauxite per annum.

- The underground mining project of 0-24 line in Guizhou Maochang Mine: Investment in project construction is expected to amount to RMB787 million, and by the end of 2016, an aggregate of RMB714 million of capital expenditure had been incurred. The project was completed and commenced trial production in June 2016, creating an additional production capacity of 1,200,000 tonnes of bauxite per annum.

- Capacity expansion and technology upgrade of Wangwa mine: The project is planned to have a total annual capacity of 6.0 million tonnes. We expect to invest a total amount of approximately RMB3.1 billion in this project.

- The 500,000-tonne aluminum alloy product structure adjustment, upgrade and technical innovation project of Inner Mongolia Huayun: Investment in project construction amounted to RMB5,911 million, and by the end of 2016, an aggregate of RMB2,200 million of capital expenditure had been incurred. The first batch of electrolytic cells from the project is expected to be put into production in August 2017, which will bring an additional production capacity of 500,000 tonnes per annum.

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 financial data, in each case together with the accompanying notes included elsewhere in this annual report. This section contains certain "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995. Forward- looking statements are not guarantees of our future performance or results and our actual results could materially differ from those disclosed in the forward-looking statements. In evaluating our business, you should carefully consider the information provided in "Item 3. Key Information - D. Risk Factors."

A. OPERATING RESULTS

Overview

We are a leading enterprise in the non-ferrous metal industry in China. We are engaged principally in alumina refining, primary aluminum smelting, and trading of non-ferrous metal products, coal products and other products. 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. We organize and manage our operations according to the following key segments:

- Our alumina segment, which consists of 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 89% of the total production volume for this segment in 2016. Chemical alumina products are used in the production of chemical, pharmaceutical, ceramic and construction materials. In the process of refining bauxite into alumina, we also produce gallium as a by-product. Gallium is a rare, high-value metal with applications in the electronics and telecommunication industries.

- Our primary aluminum segment, which consists of the procurement of alumina, other raw materials, supplemental materials and electrical power, the production and sale of primary aluminum and aluminum-related products, such as carbon products, aluminum alloy products and other electrolytic aluminum products. Our principal primary aluminum products are ingots, molten aluminum and aluminum alloys which accounted for approximately 19%, 52% and 29%, respectively, of our total production volume of primary aluminum in 2016. Our standard 20 kilogram remelt ingots are used for general aluminum fabrication in the construction, electricity, electronics, transportation, 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, which consists of the trading of alumina, primary aluminum, aluminum fabrication products, other non-ferrous metal products, and crude fuels such as coal products, as well as supplemental materials, and providing logistics and transport services to our internal manufacturing plants and external customers in the PRC. We established our trading business as a separate segment in July 2010 as a result of the implementation of our operational structural exercise.

- Our energy segment, which consists of 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 2016, we supplied the majority of the electricity we generated for our own production use, supplied a portion of the coal output to our own electric power plant and sold the remaining portion to external customers, including power generation enterprises and cement plants.

- Our corporate and other operating segment, which consists of corporate and other aluminum-related research, development, and other activities of the Group.

We used to be engaged in aluminum fabrication operations, where we processed primary aluminum for the production and sales of various aluminum fabrication products. 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. As a result, we ceased to have our aluminum fabrication business as a separate segment in June 2013.

Critical Accounting Policies

We prepare our consolidated financial statements in accordance with IFRSs as issued by the IASB, which requires the use of certain critical accounting estimates. It also requires management to exercise its judgment in the process of applying the accounting policies. The areas in our financial reporting involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements, are disclosed in Note 3 to our consolidated financial statements. We have established procedures and processes to facilitate the making of such judgments in the preparation of our consolidated financial statements. Management has used the best information available but actual performance may differ from our management's estimates and future changes in key variables could change future reported amounts in our consolidated financial statements.

Property, Plant and Equipment-recoverable amount

Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items. Subsequent costs are included in the asset's carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to us and the cost of the item can be measured reliably. The carrying amount of any replaced parts is derecognized. All other repairs and maintenance are charged to profit or loss during the financial period in which they are incurred.

We calculate depreciation on property, plant and equipment using the straight-line method to allocate their costs over their estimated useful lives down to their residual values, as follows:

| | |
|---|---|
| Buildings | 8-45 years |
| Machinery | 3-30 years |
| Transportation facilities | 6-10 years |
| Office and other equipment | 3-10 years |

We reviewed and adjusted the assets' depreciation method, residual values and useful lives, if appropriate, at the end of each reporting period. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount of the asset and are recognized within "other gains, net" in profit or loss.

Construction in progress ("CIP") represents buildings under construction, and plant and equipment pending for installation, and is stated at cost less accumulated impairment losses. Cost comprises construction expenditures, other expenditures necessary for the purpose of preparing the CIP for its intended use and those borrowing costs incurred before the assets are ready for their intended use that are eligible for capitalization. CIP is transferred to property, plant and equipment when the CIP is ready for its intended use.

Intangible assets - goodwill

Goodwill arises on the acquisition of subsidiaries, associates and joint ventures and represents the excess of the consideration transferred over the fair value of the share of the net identifiable assets of the acquiree at the date of acquisition.

For the purposes of impairment testing, goodwill acquired in a business combination is allocated to each of the cash-generating units, or groups of cash-generating units, that is expected to benefit from the synergies of the combination. Each unit or group of units to which the goodwill is allocated represents the lowest level within the entity at which the goodwill is monitored for internal management purposes. Goodwill is monitored at the operating segment level.

Goodwill impairment reviews are undertaken annually or more frequently if events or changes in circumstances indicate a potential impairment. The carrying value of goodwill is compared to the recoverable amount, which is the higher of value in use and the fair value less costs of disposal. Any impairment is recognized immediately as an expense and is not subsequently reversed.

Intangible assets - mining rights and mineral exploration rights

Our mineral exploration rights and mining rights relate to coal, bauxite and other mines.

(i) Recognition

Mineral exploration rights and mining rights are initially recorded at the cost which includes the acquisition consideration, qualifying exploration and other direct costs. The mineral exploration rights are stated at cost less any impairment, and the mining rights are stated at cost less any amortization and impairment.

(ii) Reclassification

Mineral exploration rights are converted to mining rights when technical feasibility and commercial viability of extracting a mineral resource are demonstrable. Mineral exploration rights are subject to amortization when the mineral exploration rights are converted to mining rights and commercial production has commenced.

We assess the stage of each mine under construction to determine when a mine moves into the production stage. The criteria used to assess the start date are determined based on the unique nature of each mine construction project. We consider various relevant criteria, such as completion of a reasonable period of testing of the mine and equipment, ability to produce in saleable form (within specifications) and ability to sustain ongoing production to assess when a mine is substantially complete and ready for its intended use.

(iii) Amortization

Amortization of bauxite and other mining rights (except for coal mining rights) is provided on a straight-line basis according to the shorter of the expiration date of the mining certificate and the mineable period of natural resources. Estimated mineable periods of the majority of the mining rights range from 3 to 30 years.

Coal mining rights are amortized on a unit-of-production basis over the economically recoverable reserves evaluated based on the reserves estimated in accordance with the standards in the Solid Mineral Resource/Reserve Classification of the PRC (GB/T17766-1999) of the mine concerned.

(iv) Impairment

An impairment review is performed when there are indicators that the carrying amount of the mineral exploration rights and mining rights may exceed their recoverable amounts. To the extent that this occurs, the excess is fully provided as impairment loss.

Non-current assets and disposal groups held for sale

Non-current assets and disposal groups are classified as held for sale if their carrying amounts will be recovered principally through a sales transaction rather than through continuing use. For this to be the case, the asset or disposal group must be available for immediate sale in its present condition subject only to terms that are usual and customary for the sale of such assets or disposal groups and its sale must be highly probable. All assets and liabilities of a subsidiary classified as a disposal group are reclassified as held for sale regardless of whether the Group retains a non-controlling interest in its former subsidiary after the sale.

Non-current assets and disposal groups (other than financial assets) classified as held for sale are measured at the lower of their carrying amounts and fair values less costs to sell. Property, plant and equipment and intangible assets classified as held for sale are not depreciated or amortized.

Estimated impairment of trade and other receivables and inventories

A provision for impairment of trade and other receivables is established when there is objective evidence that we will not be able to collect all amounts due according to the original repayment terms of the receivables. Significant financial difficulties of the debtor, probability that the debtor will enter bankruptcy or financial reorganization, and default or delinquency in payments are considered as indicators that a trade receivable is impaired. The amount of provision is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the original effective interest rate. Cash flows relating to trade and other receivables are discounted if the effect of discounting is material. The carrying amount of the asset is reduced through the use of an allowance account and the amount of the loss is recognized in the consolidated statement of comprehensive income. When a trade and other receivable is uncollectible, it is written-off against the allowance account for trade and other receivables. Subsequent recoveries of amounts previously written-off are recognized as income in profit or loss. The impairment is subject to our management's assessment as of the end of the reporting period, and hence, the provision amount is subject to uncertainty.

Our management tests whether inventories suffered any impairment based on estimates of the net realizable value of the inventories. For different types of inventories, it requires the exercise of accounting estimates on selling price, costs of conversion, selling expenses and related tax expense to calculate their net realizable value. For inventories held for executed sales contracts, our management estimates the net realizable value based on the contractual price; for other inventories, our management estimates the realizable future price based on the actual prices during the period from the balance sheet date to the date these financial statements were approved for issuance by our Board, taking into account the nature and balance of inventories and future estimated price trends. For raw materials and work-in-progress, our management has established a model in estimating the net realized value at which the inventories can be realized in the normal course of business after considering our manufacturing cycles, production capacity and forecasts, estimated future conversion costs and selling prices. The management also takes into account the price or cost fluctuations and other related matters occurring after the end of the reporting period which reflect conditions that existed as of the end of the reporting period.

It is reasonably possible that if there is a significant change in circumstances including our business and the external environment, outcomes within the next financial year may be significantly affected.

Coal reserve estimates and units-of-production amortization for coal mining rights

External qualified valuation professionals evaluate "economically recoverable reserves" based on reserves estimated by external qualified exploration engineers in accordance with the PRC standards. Engineering estimates of our coal reserves are inherently imprecise and represent only approximate amounts because of the subjective judgments involved in developing such information. Economically recoverable reserve estimates are updated on a regular basis and have taken into account recent production and technical information about each mine.

Income Tax

We estimate our income tax provision and deferred income taxation in accordance with the prevailing tax rules and regulations, taking into account any special approvals obtained from relevant tax authorities and any preferential tax treatment to which we are entitled in each location or jurisdiction in which we operate. There are many transactions and calculations for which the ultimate tax determination is uncertain during the ordinary course of business. We recognize liabilities for anticipated tax audit issues based on estimates of whether additional taxes will be due. Where the final tax outcome of these matters is different from the amounts that were initially recorded, such differences will impact the income tax and deferred income tax provisions in the period in which such determination is made.

Deferred tax assets are recognized for unused tax losses and other temporary differences, such as provision for impairment of receivables, inventories and property, plant and equipment and accruals of expenses not yet deductible for tax purposes, to the extent that it is probable that taxable profit will be available against which the losses can be utilized or other temporary difference could be recovered. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and level of future taxable profits together with future tax planning strategies. The carrying value of our deferred tax assets as of December 31, 2016 was RMB1,687 million, compared with approximately RMB2,279 million as of December 31, 2015, without taking into consideration the offsetting of the balances within the same tax jurisdiction. The amount of unrecognized tax losses as of December 31, 2016, was RMB21,957 million, compared with approximately RMB22,328 million as of December 31, 2015.

An entity shall recognize a deferred tax liability for all taxable temporary differences associated with investments in subsidiaries, associates and joint ventures, except to the extent that both of the following conditions are satisfied: (a) the parent, investor or joint venturer is able to control the timing of the reversal of the temporary difference; and (b) it is probable that the temporary difference will not reverse in the foreseeable future. We believe that the taxable temporary differences associated with investments in subsidiaries, associates and joint ventures satisfy the above criteria and, therefore, relevant deferred tax liabilities was recognized as disclosed in Note 11 to our consolidated financial statements.

We believe we have recorded adequate current tax provision and deferred income taxes based on the prevailing tax rules and regulations and our current best estimates and assumptions. In the event that future tax rules and regulations or related circumstances change, adjustments to current and deferred income taxation may be necessary, which would impact our results or financial position.

Revenue recognition

We recognize revenue when the amount of revenue can be reliably measured, it is probable that future economic benefits will flow to us and specific criteria have been met for each of our activities (see descriptions below).

(i) Sales of goods

Revenue from the sales of goods is recognized when we have already transferred the significant risks and rewards of ownership of the goods to the buyers, we have retained neither continuing managerial involvement nor control over the goods, it is probable that the economic benefits related to the transaction will flow into us, and the revenue and related costs incurred can be measured reliably.

If we are acting solely as an agent, amounts billed to customers are offset against the relevant costs, and the related revenue is reported on a net basis.

(ii) Rendering of services

We provide machinery processing, transportation and packaging services and other services to third- party customers. These services are recognized in the period when the related services are provided.

Investment in joint ventures and associates - recoverable amount

In accordance with the Group's accounting policy, each investment in joint ventures and associates is evaluated in every reporting period to determine whether there are any indications of impairment. If any such indication exists, an estimate of the recoverable amount is performed and an impairment loss is recognized to the extent that the carrying amount exceeds the recoverable amount. The recoverable amount of the investment in a joint venture and an associate is measured at the higher of fair value less costs of disposal and value in use.

Fair value is determined as the amount that would be obtained from the sale of the investment in an arm's length transaction between knowledgeable and willing parties.

Value in use is also generally determined as the present value of the estimated future cash flows of those expected to arise from the continued use of the asset in its present form and its eventual disposal. Present values are determined using a risk-adjusted pre-tax discount rate appropriate to the risks inherent in the asset. Future cash flow estimates are based on expected production and sales volumes, commodity prices (considering current and historical prices, price trends and related factors) and operating costs. This policy requires management to make these estimates and assumptions which are subject to risk and uncertainty; hence there is a possibility that changes in circumstances will alter these projections, which may impact on the recoverable amounts of the investments. In such circumstances, some or all of the carrying value of the investments may be impaired and the impairment would be charged against profit or loss.

New IFRSs Pronouncements

For a detailed discussion of new accounting pronouncements, please see Note 2 to our audited consolidated financial statements.

Factors Affecting Our Results of Operations

We believe that the following factors which impact our various revenue and expense items (as described below) have had, and will continue to have, a significant effect on the development of our business, financial position and results of operation.

Economic Condition of China and the World

As the major aluminum product market is globalized, the demand for and prices of our products are highly correlated with the general economic condition of China and the world and the performance of the major aluminum and related product markets. In recent years, China's economy continued to experience growth despite the negative effects of the global financial crisis beginning in the second half of 2008 and economic recession in 2009, as well as general market volatility and changing macroeconomic conditions. However, the growth of China's economy has shown signs of slowing down since 2014, with GDP growth of 6.9% from 2014 to 2015 and 6.7% from 2015 to 2016, as compared to 7.5% from 2013 to 2014.

The global output of alumina in 2016 increased approximately 0.3% from 2015 to approximately 121.2 million tonnes. The global alumina consumption in 2016 increased approximately 3.7% from 2015 to approximately 122.2 million tonnes. In 2016, the domestic output of alumina products increased approximately 2.6% from 2015 to approximately 60.2 million tonnes and the domestic consumption for alumina increased approximately 4.2% from 2015 to approximately 64.4 million tonnes.

The global output of primary aluminum in 2016 increased approximately 2.9% from 2015 to approximately 58.9 million tonnes. The global consumption of primary aluminum in 2016 increased approximately 3.0% from 2015 to approximately 59.6 million tonnes. In 2016, the domestic output of primary aluminum increased approximately 4.8% from 2015 to approximately 32.5 million tonnes and the domestic consumption of primary aluminum increased approximately 6.7% from 2015 to approximately 32.7 million tonnes.

For the year ended December 31, 2016, we had cost of sales of RMB133,508.5 million, compared with cost of sales of RMB120,982.8 million for the year ended December 31, 2015.

Mix and Pricing of Our Products

We are engaged principally in alumina refining, primary aluminum smelting and sales of these products and trading of non-ferrous metal products and other products. In addition, we are engaged in coal mining and power generation. We sell most of our self-produced products through Chalco Trading, taking into account the spot market prices and SHFE prices. In 2016, revenues generated from alumina, primary aluminum, trading and energy segments (after elimination of inter-segment sales) accounted for 6.5%, 20.5%, 69.7% and 3.0%, respectively, of our consolidated total revenues after elimination of inter-segment sales. We apply different policies to price different products. For information on our pricing of different products, please see the section headed "Item 4. Information of the Company - B. Business Overview - Sales and Marketing."

The sales prices of alumina that our alumina refineries sell internally to Chalco Trading are determined based on our budgeted sale prices, spot market prices and the prices of primary aluminum on SHFE. Chalco Trading coordinates the external sales of our alumina products. The alumina prices in both domestic and international market have shown a general increase trend in 2016 as a result of the effect of the significant improvement of the demand and supply in the global aluminum market. In 2016, the spot price of alumina in the international market reached a high of approximately US$350.5 per tonne and bottomed out at approximately US$197 per tonne, and the average spot price of alumina in the international market was approximately US$254 per tonne, representing a decrease of 15.3% from 2015. The spot price of alumina in the domestic market reached a high of RMB3,080 per tonne and bottomed out at RMB1,525 per tonne, and the average spot price of alumina in the domestic market was approximately RMB2,070 per tonne, representing a decrease of 11.7% from 2015. Our average selling price of alumina decreased by 15% from RMB2,391 per tonne in 2015 to RMB2,016 per tonne in 2016.

Like most primary aluminum producers in China, we price our primary aluminum products by reference to the SHFE prices and spot market prices. Fluctuations in the SHFE spot prices have a significant effect on our operating results. In 2016, three month aluminum futures prices reached a high of USD1,794.5 per tonne and a low of USD1,449 per tonne on LME; and a high of RMB14,850 per tonne and a low of RMB10,405 per tonne on SHFE. The gradual increase of aluminum prices in global and domestic markets was primarily attributable to the improvement of supply and demand in global aluminum market. In terms of international market, the international price of aluminum faced an upward trend with fluctuations. Favorable global manufacturing conditions has supported a stable consumption of aluminum. Meanwhile, with limited restarted and newly added aluminum production capacity, the international aluminum market was short of supply resulting in an increasing shortage gap. Especially in the fourth quarter in 2016 as a result of the serious tightness in supply in China, and massive capital inflow, the prices for aluminum soared, with three- month aluminum futures prices at LME breaking through USD1,700 per tonne and reaching a high of USD1,794.5 per tonne in November. In terms of the domestic market, impacted by flexible production arrangements by a number of aluminum producers in China, the growth in aluminum production dropped to its lowest level in the decade. As such, China aluminum market was in short of supply, which caused the general increase in aluminum price in 2016. After the spring festival of 2016, benefiting from the China's favorable supply and demand situation, domestic future aluminum price rapidly bounced back. After September, as a result of increased costs of railway transportation and utilization of railway transportation approaching its maximum capacity, the volume of aluminum delivered for consumption areas continued to drop, which resulted in a tightness of supply in spot aluminum market. In 2016, aluminum price in the domestic market were increasing on a continuous basis beyond the market expectation, even though average prices were still lower than 2015. The average three- month aluminum futures prices at SHFE decreased by 1.6% from RMB12,300 per tonne in 2015 to RMB12,101 per tonne in 2016. Our average selling price of primary aluminum increased by 2% from RMB12,205 per tonne in 2015 to RMB12,496 per tonne in 2016.

Price Volatility of Non-ferrous Metal and Coal Products.

Since late 2009, as a result of the implementation of our operational structural adjustment, we have been engaged substantially in the trading of outsourced non-ferrous metal products to increase our profit. In 2012, we began to engage in the trading of significant amounts of outsourced coal products to diversify our product portfolio. Although the profit margin of sales of outsourced products is typically lower than that of our self-produced products, we generated substantial revenues and profit from the trading of outsourced products in 2016 due to our significant trading volumes. Our revenue generated from external sales of products purchased from external sources in 2016 was approximately RMB82,146.5 million, representing approximately 81.8% of total revenue from external sales in our trading segment. From time to time, we may enter into futures and option transactions in addition to the simple buy-low-sell-high trading model to hedge against price fluctuations in the non-ferrous metal and coal products market. However, short-term price volatility of these products remains a key factor affecting our operation result, as we need to make the correct prediction concerning the price trends of these products on the markets to ensure substantial revenues through large trading volume. If the market price trend does not match our prediction, we may be forced to sell trading products at low prices or to purchase trading products at high prices, which may adversely affect gross margins and profitability.

Manufacturing Costs

Our cost of revenues consists primarily of the costs of raw materials, overhead cost and electric power cost which is our principal energy cost. Our principal raw material is bauxite. For the years ended December 31, 2014, 2015 and 2016, bauxite supplied by our mines accounted for 55.4%, 55.4%and 47%, respectively, of our total bauxite used in the production of alumina. The unit cost of bauxite produced by us is generally lower than the unit cost of bauxite procured from external suppliers. In 2016, as a result of decreases in power and raw material consumption per production unit and decreases in raw materials, fuel and electricity prices during the manufacturing process, our average cost of alumina per tonne decreased by approximately 12% from that in 2015.

Given our high proportion of fixed costs, we must generate sufficient sales to absorb our fixed costs to maintain or increase our operating margins. Our acquisitions and production expansion in recent years have significantly increased our costs that are relatively fixed in nature, such as leases and depreciation of property, plant and equipment and employee benefit expenses. If we are able to maintain satisfactory facility utilization rates and productivity, our production capacity expansion will enable us to reduce our unit costs through economies of scale and recover associated increased costs through higher output. In 2016, we continued to focus on lowering production costs and increasing production efficiency through reducing raw material consumption by improving technology and internal management.

Primary aluminum is one of our major aluminum products and is produced by smelting operations. Smelting operations require a substantial and continuous supply of electricity. Electricity cost is the most significant component of our primary aluminum production cost and accounted for approximately 37% of our unit production cost for primary aluminum in 2016. The availability and price of electricity are key considerations in our primary aluminum operations. Interruptions of electricity supply can result in lengthy production shutdowns, increased costs associated with restarting production and waste of production in progress, and prolonged interruptions can cause damage to, or the destruction of, production equipment and facilities. Our average annual electricity price per kilowatt-hour decreased by 18.8% from 2014 to 2015 and decreased by 16% from 2015 to 2016.

Availability and Costs of Financing

We require a significant amount of capital to fund our operations. For example, we need substantial amounts of funds for expanding our operations, purchasing and maintaining equipment and procuring commodities. We have in the past funded our capital expenditures primarily with bank loans and the issuance of medium-term notes and bonds and long-term bonds. The availability of financing is subject to various factors, including our credit history and PRC Government's policy on credit markets. Over the years, we have maintained good relationships with the commercial banks in China, which enables us to access bank financing at relatively low costs. In recent years, the PRC government had tightened its monetary policies to control inflation, including increasing interest rates on bank loans and deposits and tightening the money supply. The PRC government has loosened its monetary policy and lowered interest rates on bank loans since the end of 2014. However, any change towards stricter lending policies in the future may, among other things, affect our ability to obtain financing and may in turn adversely affect our operating results. Our finance costs decreased by 16% from 2015 to 2016, primarily due to a decrease in size and interest rate of interest-bearing debts. If we are unable to secure sufficient external funding when required, we may not be able to fund our working capital requirements and necessary capital expenditures, which could adversely affect our business, financial performance and prospects.

In addition, our borrowing costs and access to debt financing depend significantly on our credit ratings. These ratings, including long-term corporate credit ratings and financing bond credit ratings, are assigned by rating agencies, which may lower or withdraw their ratings. Any change in our credit ratings or average interest rate could have negative implications, which may increase our finance costs and affect our financial results.

Regulatory Environment

The central and local governments in the PRC continues to exercise a substantial degree of control and influence over the aluminum and other non-ferrous metal products industry in China and shape the structure and development of the industry through the imposition of industry policies governing major project approvals 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.

Selected Statement of Operation Items

Revenue

Our revenue is primarily generated from sales of alumina, primary aluminum, other non-ferrous metal products and coal products. 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. In 2010, we established our trading business as a new business segment.

Cost of Sales

Our cost of sales consists primarily of the purchase of inventories in relation to trading activities, the cost of the raw materials and consumables used, the electric power cost which is our principal energy cost, the fixed cost and employee benefit expenses. For the years ended December 31, 2014, 2015 and 2016, our cost of sales was RMB141,438.2 million, RMB120,982.8 million and RMB 133,508.5 million, respectively, and accounted for 99.6%, 98.0% and 92.7% of the total consolidated revenues for those periods.

Operating Expenses

Selling and Distribution Expenses. Our selling and distribution expenses consist primarily of transportation and loading expenses, packaging expense and, to a lesser extent, port expenses, employee benefit expenses for employees in selling and distribution department, warehouse and other storage fees, depreciation of non-production property, plant and equipment, sales commissions and other handling fees, marketing and advertising expenses, among others. Selling and distribution expenses accounted for 14.1%, 41.4% and 36.6% of our total operating expenses for the years ended December 31, 2014, 2015 and 2016, respectively.

General and Administrative Expenses. Our general and administrative expenses consist primarily of early retirement benefit expenses, employee benefit expenses for directors and officers and employees in administrative department and, to a lesser extent, taxes other than income tax expenses, impairment of intangible assets, depreciation of non-production property, plant and equipment, provision for impairment of receivables, termination benefit expenses, operating lease rental expenses, travelling and entertainment, legal and other professional fees, amortization of land use rights and leasehold land, utilities and office supplies, insurance expense, pollutants discharge fees, repairs and maintenance expenses, auditors' remuneration, amortization of intangible assets, and others. General and administrative expenses accounted for 38.5%, 54.5% and 59.4% of our total operating expenses for the years ended December 31, 2014, 2015 and 2016, respectively. Employee benefit expenses, including salaries and bonus, housing fund, staff welfare and other expenses, employment expense in relation to early retirement schemes, termination benefit and retirement benefit cost-defined contribution schemes, comprise a significant component of our general and administrative expenses, accounting for 53.4%, 43.4% and 51.0% of our total general and administrative expenses for the years ended December 31, 2014, 2015 and 2016, respectively.

Research and Development Expenses. Our research and development expenses accounted for 2.3%, 3.9% and 3.0% of our total operating expenses for the years ended December 31, 2014, 2015 and 2016, respectively.

Impairment loss on property, plant and equipment. Our impairment loss on property, plant and equipment accounted for 45.1%, 0.2% and 1.0% of our total operating expenses for the years ended December 31, 2014, 2015 and 2016, respectively.

Other Income

Other income consists primarily of research subsidies, grants on energy saving, environment protection projects and industrial development support from the government.

Other Gains, net

Our other net gains in 2016 were RMB166.6 million, which consisted primarily of gains on disposal of equity interest, property, plant and equipment and land use rights and gains on financial products, partially offset by losses on future, forward and option contracts.

Finance Income

Our finance income consists primarily of interest income. For the year ended December 31, 2016, our finance income was RMB815.7 million, and accounted for 0.6% of the total consolidated revenues.

Finance Costs

Our financing costs consist primarily of interest expense on our borrowings, which we have incurred mainly to fund our capital expenditures. Interest rates on loans related to capital expenditures and working capital set by banks generally follow guidelines issued by the People's Bank of China. The People's Bank of China regulates the interest rates for commercial loans charged by state-owned banks from time to time as part of the PRC government's efforts to regulate the PRC economy. In 2016, we incurred interest expense (net of capitalized interest) of RMB4,740.2 million on our borrowings.

Share of Profits and Losses of Joint Ventures

Our share of profits and losses of joint ventures is the profit attributable to us from our joint ventures, based on our equity interests in such joint ventures. A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

Share of Profits and Losses of Associates

Our share of profits and losses of associates is the profit attributable to us from our associates, based on our equity interests in such associates. An associate is an entity over which we have significant influence but not control.

Consolidated Results of Operations

The following table sets forth certain income and expense items as a percentage of our revenues from our consolidated statements of comprehensive income for the periods indicated:

| | Year Ended December 31, | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2014 | | 2015 | | 2016 | | |
| | RMB | (%) | RMB | (%) | RMB | US$ | (%) |
| | (in millions, except percentage) | | | | | | |
| Revenue | 142,059.7 | 100.0 | 123,475.4 | 100.0 | 144,065.5 | 20,749.7 | 100.0 |
| Cost of Sales | (141,438.2) | (99.6) | (120,982.8) | (98.0) | (133,508.5) | (19,229.2) | (92.7) |
| Gross Profit | 621.5 | 0.4 | 2,492.6 | 2.0 | 10,557.0 | 1,520.5 | 7.3 |
| Selling and distribution expenses | (1,766.7) | (1.2) | (1,784.1) | (1.4) | (2,065.5) | (297.5) | (1.4) |
| General and administrative expenses | (4,843.4) | (3.4) | (2,346.6) | (1.9) | (3,348.3) | (482.3) | (2.3) |
| Research and development expenses | (293.8) | (0.2) | (168.8) | (0.1) | (168.9) | (24.3) | (0.1) |
| Impairment loss on property, plant and equipment | (5,679.5) | (4.0) | (10.0) | <0.1 | (57.1) | (8.2) | <0.1 |
| Other income | 824.0 | 0.6 | 1,771.0 | 1.4 | 745.2 | 107.3 | 0.4 |
| Other gains, net | 356.9 | 0.2 | 5,023.6 | 4.1 | 166.7 | 24.0 | 0.1 |
| Operating (loss)/profit | (10,781.0) | (7.6) | 4,977.7 | 4.1 | 5,829.1 | 839.5 | 4.0 |
| Finance Income | 1,047.6 | 0.7 | 812.4 | 0.6 | 815.6 | 117.5 | 0.7 |
| Finance cost | (6,733.8) | (4.7) | (5,961.0) | (4.8) | (5,004.7) | (720.8) | (3.5) |
| Share of profits and losses of joint ventures | 89.5 | 0.1 | 23.2 | <0.1 | (95.5) | (13.8) | (0.1) |
| Share of profits and losses of associates | 350.6 | 0.2 | 284.6 | 0.2 | 115.1 | 16.6 | 0.1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| (Loss)/profit before income tax | (16,027.1) | (11.3) | 136.9 | 0.1 | 1,659.6 | 239.0 | 1.2 |
| Income tax (expense)/benefit | (1,074.9) | (0.7) | 230.1 | 0.2 | (404.1) | (58.2) | (0.3) |
| (Loss)/Profit for the year | (17,102.0) | (12.0) | 367.0 | 0.3 | 1,255.5 | 180.8 | 0.9 |

No customer individually accounted for more than 10% of our total sales for the year ended December 31, 2016. Sales to Chinalco and its subsidiaries, joint ventures, associates and other related parties accounted for approximately 7.7%, 11.6% and 9.1% of consolidated revenues for the years ended December 31, 2014, 2015 and 2016, respectively. For information on related party transactions, see "Item 7 - Major Shareholders and Related Party Transactions - B. Related Party Transactions" and Note 36 to our audited consolidated financial statements.

Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Revenue

Our revenue increased by 16.7% from RMB123,475.4 million for the year ended December 31, 2015, to RMB144,065.5 million for the year ended December 31, 2016, primarily due to the increase of trading volume during the year.

Cost of Sales

Our cost of sales increased by 10.4% from RMB120,982.8 million for the year ended December 31, 2015, to RMB133,508.5 million for the year ended December 31, 2016, primarily due to the increase of trading volume during the year.

Selling and Distribution Expenses

Our selling and distribution expenses amounting RMB2,065.5 million for the year ended December 31, 2016, slightly increased from RMB1,784.1 million for the year ended December 31, 2015.

General and Administrative Expenses

Our general and administrative expenses increased by 42.7% from RMB2,346.6 million for the year ended December 31, 2015, to RMB3,348.3 million for the year ended December 31, 2016, primarily attributable to costs incurred for the reposition of certain redundant personnel for the purpose of enhancing productivity.

Research and Development Expenses

Our research and development expenses remain relatively stable around RMB168.9 million from 2015 to 2016.

Other Income

Other income decreased from RMB1,771.0 million in the year ended December 31, 2015 to RMB745.2 million for the year ended December 31, 2016, primarily due to changing of the way that the government provided support for our Group.

Other Gains, Net

Our net other gains decreased from RMB5,023.6 million for the year ended December 31, 2015 to RMB166.7 million for the year ended December 31, 2016, primarily due to relatively more gains generated from disposal of property, plant and equipment and land use rights and equity interests in Jiaozuo Wanfang and Shanxi Huaxing in 2015.

Finance Income

Our finance income slightly increased from RMB812.4 million for the year ended December 31, 2015 to RMB815.6 million for the year ended December 31, 2016.

Finance Costs

Our finance costs decreased by 16.0% from RMB5,961.0 million for the year ended December 31, 2015 to RMB5,004.7 million for the year ended December 31, 2016, primarily due to decline in lending rates and adjustment to the size of interest-bearing liabilities.

Share of Profits and Losses of Joint Ventures

We incurred a loss of RMB95.5 million in our share of profits and losses of joint venture for the year ended December 31, 2016, whereas we had a profit of RMB23.2 million in our share of profits and losses of joint venture for the year ended December 31, 2015. This was primarily attributable to decrease in the profits of our joint ventures.

Share of Profits and Losses of Associates

Our share of profits and losses of associates decreased by 59.6% from RMB284.6 million for the year ended December 31, 2015 to RMB115.1 million for the year ended December 31, 2016, primarily attributable to the decrease in the profit of our associates.

Income Tax

Our income tax benefit was RMB230.1 million for the year ended December 31, 2015, whereas we had income tax expense of RMB404.1 million for the year ended December 31, 2016. This was mainly attributable to more income taxes recognized as a result of increase in profit for the year 2016.

Results of Operations

As a result of the foregoing, our net profit increased from RMB367.0 million for the year ended December 31, 2015 to RMB1,255.5 million for the year ended December 31, 2016.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Revenue

Our revenue decreased by 13.1% from RMB142,059.7 million for the year ended December 31, 2014, to RMB123,475.4 million, primarily due to the decrease in selling price and sales volume during the year. Our average selling price of alumina decreased by 4.28% from RMB2,498 per tonne in 2014 to RMB2,391 per tonne in 2015. Our average selling price of primary aluminum decreased by 9.9% from RMB13,546 per tonne in 2014 to RMB12,205 per tonne in 2015.

Cost of Sales

Our cost of sales decreased by 14.5% from RMB141,438.2 million for the year ended December 31, 2014, to RMB120,982.8 million for the year ended December 31, 2015, primarily due to the decrease in production cost and sales volume of our principal products. In 2015, due to decreases in power and raw material consumption per production unit and decreases in raw materials, fuel and electricity prices, our average cost of alumina per tonne decreased by approximately 11.9% from that in 2014. Our production cost of primary aluminum decreased by 8.4% from 2014 to 2015, primarily due to decreases in the prices of raw materials, fuel and electricity, and decreases in power and raw material consumption per production unit. In particular, our average annual electricity price decreased by 18.8% from 2014 to 2015.

Selling and Distribution Expenses

Our selling and distribution expenses amounted to RMB1,784.1 million for the year ended December 31, 2015, slightly increased from RMB1,766.7 million for the year ended December 31, 2014.

General and Administrative Expenses

Our general and administrative expenses decreased by 51.6% from RMB4,843.4 million for the year ended December 31, 2014, to RMB2,346.6 million for the year ended December 31, 2015, primarily attributable to further control of various expenses taken in 2015, and the costs of approximately RMB1,536.3 million relating to the provision for termination and early retirement benefits in respect of the early retirement of employees and those with termination of labor relationship through negotiation made by the Group in 2014.

Research and Development Expenses

Our research and development expenses decreased by 42.5% from RMB293.8 million for the year ended December 31, 2014 to RMB168.8 million for the year ended December 31, 2015, primarily because we included the expenses on research and development of the 600kA-grade electrolytic aluminum technology in the research and development expenses in 2014, while we did not include such expenses in the research and development expenses in 2015.

Impairment Loss on Property, Plant and Equipment

Our impairment loss on property, plant and equipment decreased from RMB5,679.5 million for the year ended December 31, 2014, to RMB10.0 million for the year ended December 31, 2015, primarily due to provisions of substantial impairment for certain property, plant and equipment of our Company in 2014 that resulted from general market factors beyond our control, such as the continuous decrease of aluminum prices and poor market conditions in the photovoltaic and silicon industries that we participate in, while we did not make such provisions in 2015.

Other Income

Other income increased from RMB824.0 million in the year ended December 31, 2014, to RMB1,771.0 million for the year ended December 31, 2015, primarily due to the increase of subsidies we received from the government for supporting the development of enterprises and implementation of environmental protection projects.

Other Gains, Net

Our net other gains increased from RMB356.9 million for the year ended December 31, 2014, to RMB5,023.6 million, primarily due to the capital operation, introduction of strategic investors and revitalization of stock assets carried out by us in 2015.

Finance Income

Our finance income decreased by 22.5% from RMB1,047.6 million for the year ended December 31, 2014, to RMB812.4 million for the year ended December 31, 2015, primarily attributable to a decrease in interest income of receivables from disposal of subsidiaries, businesses and assets in 2013 due to a decrease in interest rate and size of the receivables.

Finance Costs

Our finance costs decreased by 11.5% from RMB6,733.8 million for the year ended December 31, 2014, to RMB5,961.0 million for the year ended December 31, 2015, primarily due to a decrease in interest rate and size of interest-bearing debts.

Share of Profits and Losses of Joint Ventures

Our share of profits and losses of joint ventures decreased by 74.1% from RMB89.5 million for the year ended December 31, 2014, to RMB23.2 million for the year ended December 31, 2015, primarily attributable to decrease in the profits of our joint ventures due to general market conditions.

Share of Profits and Losses of Associates

Our share of profits and losses of associates decreased by 18.8% from RMB350.6 million for the year ended December 31, 2014, to RMB284.6 million for the year ended December 31, 2015, primarily attributable to the decrease of our shareholding in Jiaozuo Wanfang resulting in the loss of control and a decrease in the profits of our associates due to general market conditions.

Income Tax

Our income tax expense was RMB1,074.9 million for the year ended December 31, 2014, whereas we had income tax benefit of RMB230.1 million for the year ended December 31, 2015. This was mainly attributable to the fact that deferred tax assets from accumulated losses and deductible temporary differences were written down during 2014.

Results of Operations

As a result of the foregoing, we had net loss of RMB17,102.0 million for the year ended December 31, 2014, whereas we had net profit of RMB367.0 million for the year ended December 31, 2015.

Discussion of Segment Operations

We account for our operations on a segmental basis; that is, separately preparing the accounting for our alumina, primary aluminum, trading, energy and corporate and other operating segments. Unless otherwise indicated, also included in these segments are other revenues derived from activities such as supplying electricity, gas, heat and water to our affiliates, selling scrap and other materials and providing services including transportation and research and development to third parties. For additional information relating to our business segments and segment presentation, see Note 4 to our consolidated financial statements.

The following table sets forth a breakdown of our revenues by segment and the contribution of external sales and inter-segment sales for the periods indicated:

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| | Before Elimination of Inter-segment Sales | | | | | |
|---|---|---|---|---|---|---|
| | Year Ended December 31, | | | | | |
| | 2014 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | RMB | RMB | RMB | US$ | % | % |
| | (in millions, except percentage) | | | | | |
| Revenue | | | | | | |
| Alumina: | | | | | | |
| External sales | 5,913.5 | 6,661.2 | 9,355.5 | 1,347.5 | 5.1 | 6.5 |
| Inter-segment sales | 24,852.3 | 26,643.8 | 20,449.4 | 2,945.3 | 11.1 | |
| Total | 30,765.8 | 33,305.0 | 29,804.9 | 4,292.8 | 16.2 | |
| Primary aluminum: | | | | | | |
| External sales | 30,390.4 | 28,111.8 | 29,482.3 | 4,246.3 | 16.1 | 20.5 |
| Inter-segment sales | 10,260.1 | 8,861.4 | 4,981.9 | 717.5 | 2.7 | |
| Total | 40,650.5 | 36,973.2 | 34,464.2 | 4,963.8 | 18.8 | |
| Trading | | | | | | |
| External sales | 100,346.2 | 84,222.2 | 100,439.4 | 14,466.3 | 54.7 | 69.7 |
| Inter-segment sales | 9,761.8 | 9,908.9 | 13,906.5 | 2,003.0 | 7.6 | |
| Total | 110,108.0 | 94,131.1 | 114,345.9 | 16,469.3 | 62.3 | |
| Energy | | | | | | |
| External sales | 5,094.2 | 4,192.8 | 4,382.3 | 631.2 | 2.4 | 3.0 |
| Inter-segment sales | 148.1 | 98.1 | 137.5 | 19.8 | 0.1 | |
| Total | 5,242.3 | 4,290.9 | 4,519.8 | 651.0 | 2.5 | |
| Corporate and others | | | | | | |
| External sales | 315.4 | 287.4 | 406.0 | 58.5 | 0.2 | 0.3 |
| Inter-segment sales | 32.6 | 15.0 | 98.4 | 14.2 | 0.1 | |
| Total | 348.0 | 302.4 | 504.4 | 72.7 | 0.3 | |
| Total Revenues before inter-segment eliminations | 187,114.6 | 169,002.6 | 183,639.2 | 26,449.5 | 100.0 | |
| Eliminations of inter-segment sales | (45,054.9 ) | (45,527.2 ) | (39,573.7 ) | (5,699.8 ) | (21.6 ) | |
| Consolidated total revenues | 142,059.7 | 123,475.4 | 144,065.5 | 20,749.7 | 78.4 | 100.0 |

The following table sets forth segment results before income tax by segment for the periods indicated:

| | Year Ended December 31, | | | |
|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2016 |
| | RMB | RMB | RMB | US$ |
| | (in millions) | | | |
| Alumina: | | | | |
| Revenues | 30,765.8 | 33,305.0 | 29,804.8 | 4,292.8 |
| Cost and expenses(1) | (36,795.4) | (31,394.4) | (28,860.3) | (4,156.8) |
| Segment results(2) | (6,029.6) | 1,910.6 | 944.5 | 136.0 |
| Primary aluminum: | | | | |
| Revenues | 40,650.5 | 36,973.2 | 34,464.2 | 4,963.9 |
| Cost and expenses(1) | (47,017.0) | (38,360.1) | (32,280.4) | (4,649.4) |
| Segment results(2) | (6,366.5) | (1,386.9) | 2,183.8 | 314.5 |
| Trading: | | | | |
| Revenues | 110,108.0 | 94,131.1 | 114,345.9 | 16,469.2 |
| Cost and expenses(1) | (109,449.3) | (95,365.7) | (113,536.8) | (16,352.7) |
| Segment results(2) | 658.7 | (1,234.6) | 809.1 | 116.5 |
| Energy: | | | | |
| Revenues | 5,242.3 | 4,290.9 | 4,519.8 | 651.0 |
| Cost and expenses(1) | (6,978.7) | (4,365.1) | (4,486.4) | (646.2) |
| Segment results(2) | (1,736.4) | (74.2) | 33.4 | 4.8 |
| Corporate and others | | | | |
| Revenues | 348.0 | 302.4 | 504.4 | 72.6 |
| Cost and expenses(1) | (2,625.5) | 431.4 | (2,497.6) | (359.7) |
| Segment results(2) | (2,277.5) | 733.8 | (1,993.2) | (287.1) |
| Elimination(3) | (275.8) | 188.2 | (318.0) | (45.7) |
| Total (loss)/profit before income tax | (16,027.1) | 136.9 | 1,659.6 | 239.0 |

(1) Consist of cost of sales, operating expenses, other income, other gains, finance income, finance costs and others attributable to

each segment.

(2) Segment results refer to profit/(loss) before income tax.

(3) Elimination refers to the aggregate inter-segment eliminations of segment results of each segment.

Year Ended December 31, 2016, Compared with Year Ended December 31, 2015

Alumina Segment

Revenues. Total revenue generated by the alumina segment decreased by 10.5% from RMB33,305.0 million for the year ended December 31, 2015, to RMB29,804.8 million for the year ended December 31, 2016, primarily due to a decrease in average selling price of alumina.

Revenue from external sales of the alumina segment increased by 40.2% from RMB6,661.2 million for the year ended December 31, 2015, to RMB9,355.5 million for the year ended December 31, 2016, primarily due to the increase in the external sales volume of alumina.

Revenue from inter-segment sales of the alumina segment decreased from RMB26,643.8 million for the year ended December 31, 2015, to RMB20,449.4 million for the year ended December 31, 2016.

Cost and expenses. The total cost and expenses for our alumina segment decreased from RMB31,394.4 million for the year ended December 31, 2015, to RMB28,860.3 million for the year ended December 31, 2016, primarily due to a decrease in the prices of materials and energy and improvement in energy efficiency during the manufacturing process.

Segment results. The segment profit for our alumina segment decreased from RMB1,910.6 million for the year ended December 31, 2015 to RMB944.5 million for the year ended December 31, 2016, primarily due to gains from remeasurement of remaining equity interest in Shanxi Huaxing recognized in 2015 and a decrease of approximately 15% in the price of alumina, partially offset by the decrease of approximate12% in cost.

Primary Aluminum Segment

Revenues. Total revenue generated by the primary aluminum segment decreased from RMB36,973.2 million for the year ended December 31, 2015, to RMB34,464.2 million for the year ended December 31, 2016, primarily due to decreases in the sales volume of our primary aluminum products.

Revenue from external sales of the primary aluminum segment increased from RMB28,111.8 million for the year ended December 31, 2015, to RMB29,482.3 million for the year ended December 31, 2016, primarily due to increase in the average external selling price in our primary aluminum products.

Revenue from inter-segment sales of primary aluminum segment decreased from RMB8,861.4 million for the year ended December 31, 2015, to RMB4,981.9 million for the year ended December 31, 2016.

Cost and expenses. The total cost and expenses for our primary aluminum segment decreased from RMB38,360.1 million for the year ended December 31, 2015, to RMB32,280.4 million for the year ended December 31, 2016, primarily due to the decreases in prices of raw materials and electricity and sales volume of our primary aluminum products.

Segment results. Segment loss for our primary aluminum segment was RMB1,386.9 million for the year ended December 31, 2015 whereas we had a segment profit of RMB2,183.8 million for our primary aluminum segment for the year ended December 31, 2016. This was mainly attributable to a year-on-year decrease of approximately 17% in the costs of primary aluminum products.

Trading Segment

Revenues. Total revenue generated by the trading segment increased RMB94,131.1 million for the year ended December 31, 2015 to RMB114,345.9 million for the year ended December 31, 2016, primarily due to increase in trading volume.

Revenue from external sales of the trading segment increased from RMB84,222.2 million for the year ended December 31, 2015 to RMB100,439.4 million for the year ended December 31, 2016, primarily due to increase in trading volume.

Revenue from internal sales of the trading segment increased from RMB9,908.9 million for the year ended December 31, 2015 to RMB13,906.5 million for the year ended December 31, 2016.

Cost and expenses. The total cost and expenses for our trading segment increased from RMB95,365.7 million for the year ended December 31, 2015 to RMB113,536.8 million for the year ended December 31, 2016, primarily due to increase in trading volume.

Segment results. We incurred segment loss for our trading segment of RMB1,234.6 million for the year ended December 31, 2015 whereas we had a segment profit of RMB809.1 million for the year ended December 31, 2016. This was mainly attributable to the increase in selling prices of the products and timely destocking.

Energy Segment

Revenues. Total revenue generated by the energy segment slightly increased from RMB4,290.9 million for the year ended December 31, 2015 to RMB4,519.8 million for the year ended December 31, 2016.

Revenue from external sales of the energy segment slightly increased from RMB4,192.8 million for the year ended December 31, 2015 to RMB4,382.3 million for the year ended December 31, 2016.

Revenue from internal sales of the energy segment increased from RMB98.1 million for the year ended December 31, 2015 to RMB137.5 million for the year ended December 31, 2016.

Cost and expenses. The total cost and expenses for our energy segment slightly increased from RMB4,365.1 million for the year ended December 31, 2015 to RMB4,486.4 million for the year ended December 31, 2016.

Segment results. We incurred a segment loss of RMB74.2 million for the year ended December 31, 2015, whereas we had a segment profit of RMB33.4 million for the year ended December 31, 2016. This was mainly attributable to gains on disposal of environmental protection business.

Corporate and other operating segment

Revenues. Revenue from the corporate and other operating segment increased from RMB302.4 million for the year ended December 31, 2015 to RMB504.4 million for the year ended December 31, 2016.

Segment results. We had segment profit of RMB733.8 million for the year ended December 31, 2015 whereas we incurred a segment loss of RMB1,993.2 million for the year ended December 31, 2016. This was mainly attributable to gains from capital operation in 2015, while it did not occur in 2016.

Year Ended December 31, 2015, Compared with Year Ended December 31, 2014

Alumina Segment

Revenues. Total revenue generated by the alumina segment increased from RMB30,765.8 million for the year ended December 31, 2014, to RMB33,305.0 million for the year ended December 31, 2015, primarily due to increases in the sales volume of our alumina products, resulting from general market conditions.

Revenue from external sales of the alumina segment increased from RMB5,913.5 million for the year ended December 31, 2014, to RMB6,661.2 million for the year ended December 31, 2015, primarily due to the increase in the sales volume of alumina.

Revenue from inter-segment sales of the alumina segment increased from RMB24,852.3 million for the year ended December 31, 2014, to RMB26,643.8 million for the year ended December 31, 2015.

Cost and expenses. The total cost and expenses for our alumina segment decreased from RMB36,795.4 million for the year ended December 31, 2014, to RMB31,394.4 million for the year ended December 31, 2015, primarily due to a decrease in the prices of materials and energy and improvement in energy efficiency during the manufacturing process.

Segment results. Segment loss for our alumina segment was RMB6,029.6 million for the year ended December 31, 2014, whereas we had segment profit of RMB1,910.6 million for the year ended December 31, 2015. This was mainly attributable to the investment profit from our disposal of Shanxi Huaxing in 2015, which was recognized at its fair value after revaluation, and our control of various expenses resulting in a general decrease of our operating costs in 2015. Meanwhile the segment results of our alumina segment in 2014 was influenced by the provision of substantial impairment for certain long-term assets of the segment, provision of termination and early retirement benefits expenses in respect of the early retired employees and those with termination of labor relationship through negotiation.

Primary Aluminum Segment

Revenues. Total revenue generated by the primary aluminum segment decreased from RMB40,650.5 million for the year ended December 31, 2014, to RMB36,973.2 million for the year ended December 31, 2015, primarily due to decreases in the sales volume and the average selling price of our primary aluminum products.

Revenue from external sales of the primary aluminum segment decreased from RMB30,390.4 million for the year ended December 31, 2014, to RMB28,111.8 million for the year ended December 31, 2015, primarily due to decreases in the sales volume and average selling price of our primary aluminum products.

Revenue from inter-segment sales of primary aluminum segment decreased by 13.6% from RMB10,260.1 million for the year ended December 31, 2014, to RMB8,861.4 million for the year ended December 31, 2015, primarily due to the decrease in the selling price and sales volume.

Cost and expenses. The total cost and expenses for our primary aluminum segment decreased by 18.4% from RMB47,017.0 million for the year ended December 31, 2014, to RMB38,360.1 million for the year ended December 31, 2015, primarily due to the decreases in prices of raw materials and electricity and sales volume of our primary aluminum products.

Segment results. Segment loss for our primary aluminum segment decreased by 78.2% from RMB6,366.5 million for the year ended December 31, 2014, to RMB1,386.9 million for the year ended December 31, 2015. This was mainly attributable to the net profit from disposal of non-current assets in 2015 and the government subsidies. Meanwhile the segment results of our primary aluminum segment in 2014 was influenced by the provision of substantial impairment for certain long-term assets of the segment, provision of termination and early retirement benefits costs in respect of the early retired employees and those with termination of labor relationship through negotiation.

Trading Segment

Revenues. Total revenue generated by the trading segment decreased by 14.5% from RMB110,108.0 million for the year ended December 31, 2014, to RMB94,131.1 million for the year ended December 31, 2015, primarily due to a decrease in volumes and the average selling price of major aluminum products sold through our trading segment.

Revenue from external sales of the trading segment decreased by 16.1% from RMB100,346.2 million for the year ended December 31, 2014, to RMB84,222.2 million for the year ended December 31, 2015. Revenue from external sales of trading segment for the year ended December 31, 2015 included RMB23,294.8 million of external sales of products produced by us and sold through the trading segment and RMB60,927.4 million of external sales of commodities purchased from external sources including alumina, primary aluminum, carbon products, aluminum fabrication products, coal products and non-ferrous metal products.

Revenue from internal sales of the trading segment slightly increased from RMB9,761.8 million for the year ended December 31, 2014, to RMB9,908.9 million for the year ended December 31, 2015.

Cost and expenses. The total cost and expenses for our trading segment decreased by 12.9% from RMB109,449.3 million for the year ended December 31, 2014, to RMB95,365.7 million for the year ended December 31, 2015, primarily due to the decrease in volumes and the average selling price of major aluminum procured and sold through our trading segment.

Segment results. Segment profit for our trading segment was RMB658.7 million for the year ended December 31, 2014, whereas we incurred segment loss for our trading segment of RMB1,234.6 million for the year ended December 31, 2015. This was mainly attributable to the decrease in the selling price of the products and provision of impairment of inventory made accordingly.

Energy Segment

Revenues. Total revenue generated by the energy segment decreased from RMB5,242.3 million for the year ended December 31, 2014, to RMB4,290.9 million for the year ended December 31, 2015, primarily due to the general decrease in coal price and power production.

Revenue from external sales of the energy segment decreased from RMB5,094.2 million for the year ended December 31, 2014, to RMB4,192.8 million for the year ended December 31, 2015.

Revenue from internal sales of the energy segment decreased from RMB148.1 million for the year ended December 31, 2014, to RMB98.1 million for the year ended December 31, 2015.

Cost and expenses. The total cost and expenses for our energy segment decreased from RMB6,978.7 million for the year ended December 31, 2014, to RMB4,365.1 million for the year ended December 31, 2015.

Segment results. Segment loss was decreased from RMB1,736.4 million for the year ended December 31, 2014, to RMB74.2 million for the year ended December 31, 2015. This was mainly attributable to the provision of substantial impairment loss for assets of silicon and photovoltaic industry subsidiaries in 2014.

Corporate and other operating segment

Revenues. Revenue from the corporate and other operating segment decreased by 13.3% from RMB348.0 million for the year ended December 31, 2014, to RMB302.4 million for the year ended December 31, 2015.

Segment results. We had segment loss for the corporate and other operating segment of RMB2,277.5 million for the year ended December 31, 2014, whereas we had segment profit of RMB733.8 million for the year ended December 31, 2015. This was mainly attributable to the investment profits for disposal of Shanxi Huaxing and Jiaozuo Wanfang in 2015.

B. LIQUIDITY AND CAPITAL RESOURCES

Historically, our primary sources of funding have been cash generated from operating activities, prepayments and deposits from customers, bank and other loans and proceeds from equity or notes and bonds offerings. Our primary uses of funds have been working capital for production, capital expenditures and repayments of short-term, medium-term and long-term borrowings.

As of December 31, 2016, our current assets amounted to RMB66,426.2 million, representing a slight increase of 3.0% from RMB64,462.4 million as of December 31, 2015. As of December 31, 2016, our trade and notes receivable amounted to RMB7,327.2 million, representing a increase of 42.5% from RMB5,143.5 million as of December 31, 2015. As of December 31, 2016, our restricted cash and time deposits and cash and cash equivalents balance amounted to RMB25,895.5 million, representing an increase of 14.8% from RMB22,557.4 million as of December 31, 2015, primarily due to an increase in cash and cash equivalents.

As of December 31, 2016, our current liabilities amounted to RMB82,944.6 million, representing an increase of 1.4% from RMB81,807.3 million as of December 31, 2015.

As of December 31, 2016, our net current liabilities amounted to RMB16,518.4 million, representing a decrease of 4.8% from RMB17,344.9 million as of December 31, 2015. As of December 31, 2016, our current ratio (current assets/current liabilities) was 0.80, compared with 0.79 as of December 31, 2015. Our quick ratio ((current assets - inventories - prepayments)/current liabilities) was 0.55 as of December 31, 2016, compared with 0.49 as of December 31, 2015.

We have considered our available sources of funds as follows:

- Our expected net cash inflows from operating activities in 2016;
- As of December 31, 2016, we had total banking facilities of approximately RMB134,235 million, of which RMB61,980 million had been utilized and unutilized banking facilities amounted to RMB72,255 million as of December 31, 2016, among which, banking facilities of approximately RMB67,510 million will be subject to renewal during the next 12 months from January 1, 2017. We are confident that all banking facilities could be renewed upon their expiration based on our past experience with banks and our good credit standing; and
- Other available sources of financing from banks and other financial institutions based on our good credit history.

We believe that we have adequate resources to continue in operational existence for the foreseeable future not less than 12 months from the date these financial statements were approved. The Board therefore continues to adopt the going concern basis in preparing these financial statements.

Cash Flows and Working Capital

The following table sets forth a condensed summary of our statement of cash flows for the periods indicated:

| | Year Ended December 31, | | | |
|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2016 |
| | RMB | RMB | RMB | US$ |
| | (in millions) | | | |
| Net cash flows generated from operating activities | 13,782.3 | 7,297.0 | 11,518.7 | 1,659.0 |
| Net cash flows (used in)/generated from investing activities | (5,139.7 ) | 2,393.1 | (4,997.2 ) | (719.7 ) |
| Net cash flows used in financing activities | (3,813.3 ) | (5,425.6) | (3,661.2 ) | (527.3 ) |
| Net increase in cash and and cash equivalents | 4,829.3 | 4,264.5 | 2,860.3 | 412.0 |

Net Cash Flows Generated from Operating Activities

For the year ended December 31, 2016, we had cash inflows before changes in working capital but after adjustment for non-cash items and non-operating cash outflows of RMB13,162.8 million and net cash generated from operating activities of RMB11,518.7 million. The adjustment consisted primarily of non-cash and non-operating activities items such as realized and unrealized loss on futures, option and forward contracts of RMB1,135.7 million, finance cost of RMB5,004.7 million, gain on disposal of the Environmental Protection Business of RMB571.3 million and depreciation of property, plant and equipment of RMB6,560.8 million and outflows of RMB1,589.2 million for changes in working capital and outflows of income tax of RMB54.9 million. The outflows from changes in working capital consisted primarily of (i) an increase in trade and notes receivables of RMB3,664.7 million and (ii) a decrease in trade and notes payable of RMB3,447.6 million, and partially offset by (i) a decrease in inventories of RMB2,437.3 million and (ii) a decrease in other current assets of RMB3,460.2 million.

For the year ended December 31, 2015, we had cash inflows before changes in working capital but after adjustment for non-cash items and non-operating cash outflows of RMB7,378.3 million and net cash generated from operating activities of RMB7,297.0 million. The adjustment consisted primarily of non-cash and non-operating activities items such as finance cost of RMB5,961.0 million, gains on disposal of Shanxi Huaxing of RMB2,588.1 million, gains on disposal of Jiaozuo Wanfang of RMB832.3 million, gains on disposal aluminum production buildings and properties of Guizhou Branch of RMB1,364.8 million, gains on disposals of land use right of Gansu Hualu of RMB375.0 million, gains on disposal Hong Kong property of RMB209.7 million, impairment loss of property, plant and equipment of RMB10.0 million and depreciation of property, plant and equipment of RMB6,931.7 million and inflows of RMB196.1 million for changes in working capital and outflows of income tax of RMB277.3 million. The inflows from changes in working capital consisted primarily of (i) a decrease in inventories of RMB1,793.8 million and (ii) an increase in other payables and accrued liabilities of RMB1,045.8 million, partially offset by an increase in other current assets of RMB815.2 million.

For the year ended December 31, 2014, we had cash inflows before changes in working capital but after adjustment for non-cash items and non-operating cash outflows of RMB2,889.8 million and net cash generated from operating activities of RMB13,782.3 million. The adjustment consisted primarily of non-cash and non-operating activities items such as finance cost of RMB6,733.9 million, impairment loss of property, plant and equipment of 5,679.5 million and depreciation of property, plant and equipment of RMB7,020.5 million and inflows of RMB11,190.7 million for changes in working capital and outflows of income tax of RMB308.7 million. The inflows from changes in working capital consisted primarily of (i) an increase in trade and notes payables of RMB3,236.2 million, (ii) a decrease in other current assets of RMB3,158.1 million and (iii) an increase in other payables and accrued liabilities of RMB2,745.7 million, partially offset by an increase in restricted cash of RMB647.8 million.

Net Cash Flows Used in /Generated From Investing Activities

The net cash flows used in investing activities of RMB4,997.2 million for the year ended December 31, 2016, whereas we had net cash flows generated from investing activities of RMB2,393.1 million for the year ended December 31, 2015. This was mainly attributable to a cash consideration paid for business combinations under common control this year and a cash inflows generated from disposal of equity interests in Shanxi Huaxing Alumina Co., Ltd.( ) and Jiaozuo Wanfang and redemption of principal-protected financial products from banks in the same period last year. In 2014, the net cash flows used in investing activities amounted to RMB5,139.7 million.

Net Cash Flows Used in Financing Activities

The net cash flows used in financing activities were RMB3,661.2 million for the year ended December 31, 2016, representing a decrease of net cash outflows of RMB1,764.4 million from the net outflows of RMB5,425.6 million for the year ended December 31, 2015, mainly attributable to decrease in cash outflow for repayments of short-term and long-term loans. Our net cash used in financing activities for the year ended December 31, 2016, consisted primarily of repayments of short-term and long-term loans of RMB48,318.4 million, repayments of short-term bonds and medium-term notes of RMB13,500.0 million and interest payments of RMB5,028.3 million, partially offset by drawdown of short-term and long-term loans of RMB44,497.4 million.

The net cash flows used in financing activities were RMB5,425.6 million for the year ended December 31, 2015, representing a increase of net cash outflows of RMB1,612.3 million from the net outflows of RMB3,813.3 million for the year ended December 31, 2014, mainly attributable to an increase in cash outflows for repayment of short-term bonds and medium-term notes. Our net cash used in financing activities for the year ended December 31, 2015, consisted primarily of repayments of short-term and long-term loans of RMB59,196.8 million, repayments of short-term bonds and medium-term notes of RMB32,000.0 million and interest payments of RMB6,052.8 million, partially offset by drawdown of short-term and long-term loans of RMB55,810.3 million, issuance of A shares of RMB7,897.5 million, and issuance of senior perpetual securities of RMB2,000.0 million.

Loans and Borrowings

During the past years, we engaged in debt financing to fund our operations and business expansion. As of December 31, 2015 and 2016, our gearing ratio (net debts/total capital attributable to owners of the parent as defined in Note 37.3 to our audited consolidated financial statements) was approximately 74%.

| | As of December 31, | | |
|---|---|---|---|
| | 2015 | 2016 | 2016 |
| | RMB | RMB | US$ |
| | (in millions) | | |
| Short-term loans and borrowings | | | |
| Short-term bank and other loans | 35,064.3 | 32,154.8 | 4,631.3 |
| Short-term bonds | 6,663.7 | 8,020.0 | 1,155.1 |
| Gold leasing arrangements | | 2,990.6 | 430.7 |
| Current portion of finance lease payable | 1,531.6 | 2,008.7 | 289.3 |
| Current portion of medium-term notes | 6,896.2 | 8,393.1 | 1,208.9 |
| Current portion of long-term bank and other loans | 4,605.5 | 4,725.2 | 680.6 |
| Sub-total | 54,761.3 | 58,292.4 | 8,395.9 |
| Long-term loans and borrowings | | | |
| Finance lease payable | 6,710.5 | 6,692.3 | 964.0 |
| Long-term bank and other loans | 32,611.8 | 31,700.3 | 4,565.8 |
| Medium-term notes and bonds and long-term bonds | 27,711.9 | 24,057.1 | 3,464.9 |
| Less: | | | |
| Current portion of medium-term notes | (6,896.2 ) | (8,393.1 ) | (1,208.9 ) |
| Current portion of long-term bank and other loans | (4.605.5 ) | (4.725.2 ) | (680.6 ) |
| Current portion of finance lease payable | (1,531.6 ) | (2,008.7 ) | (289.3 ) |
| Sub-total | 54,000.9 | 47,322.7 | 6,815.9 |
| Total borrowings | 108,762.2 | 105,615.1 | 15,211.8 |
| Less: Bank balances and cash | (20,756.2 ) | (23,808.0 ) | (3,429.1 ) |
| Net | 88,006.0 | 81,807.1 | 11,782.7 |

Bank and Other Loans

The weighted average annual interest rate of short-term bank and other loans for the year end December 31, 2016, was 4.44%. Our short-term bank and other loans will mature within one year.

The weighted average annual interest rate of long-term bank and other loans for the years ended December 31, 2016, was 5.08%. The following table sets forth the aggregate maturities of our outstanding long-term bank and other loans as of December 31, 2016:

| | As of December 31, 2016 | |
|---|---|---|
| | RMB | US$ |
| | (in millions) | |
| Within 1 year | 4,725.2 | 680.7 |
| Between 1 and 2 years | 8,000.7 | 1,152.3 |
| Between 2 and 5 years | 10,275.9 | 1,480.0 |
| Over 5years | 8,698.5 | 1,252.8 |
| Total | 31,700.3 | 4,565.8 |

As of December 31, 2016, we had secured loans of RMB15,125 million (including long-term and short-term loans). As of December 31, 2016, long-term loans and borrowings amounting to RMB9,889 million (current portion of RMB933 million and non-current portion of RMB8,956 million) were secured by the contractual right to charge users for electricity generated and no short-term loans and borrowings were secured by letters of credit.

As of December 31, 2016, we had foreign currency denominated loans with a principal amount of RMB23 million in Japanese Yen and RMB1,572 million in U.S. dollars.

Notes and Bonds

The following table sets forth the face value, maturity, effective interest rate and outstanding amount of our outstanding long-term bonds and medium- term notes as of December 31, 2016:

| | Face value/maturity | Effective interest rate | December 31, 2016 |
|---|---|---|---|
| | (RMB in thousands) | | |
| 2007 long-term bonds | 2,000,000/2017 | 4.64% | 1,998,833 |
| 2011 medium-term notes | 4,900,000/2016 | 6.03% | - |
| 2015 medium-term notes | 3,000,000/2018 | 5.53% | 2,989,992 |
| 2015 medium-term notes | 1,500,000/2018 | 5.01% | 1,492,351 |
| 2012 Ningxia Energy medium-term bonds | 400,000/2017 | 6.06% | 400,000 |
| 2012 medium-term bonds | 3,000,000/2017 | 5.77% | 2,996,618 |
| 2013 medium-term bonds | 3,000,000/2018 | 5.99% | 2,993,272 |
| 2013 medium-term bonds | 2,000,000/2016 | 5.99% | - |
| 2014 medium-term bonds | 3,000,000/2017 | 7.35% | 2,997,622 |
| 2015 medium-term bonds | 3,000,000/2018 | 6.11% | 2,996,615 |
| 2015 medium-term bonds | 2,000,000/2018 | 6.08% | 1,993,474 |
| 2016 private placement notes | 3,215,000/2019 | 5.12% | 3,198,337 |
| Total | | | 24,057,114 |

The following table sets forth face value, maturity, effective interest rate and outstanding amount of our outstanding short-term bonds as of December 31, 2016:

| | Face value /maturity | Effective interest rate | December 31, 2016 |
|---|---|---|---|
| | (RMB in thousands) | | |
| 2016 short-term bonds | 1,500,000/2017 | 4.30% | 1,535,140 |
| 2016 short-term bonds | 3,000,000/2017 | 4.13% | 3,047,026 |
| 2016 short-term bonds | 3,000,000/2017 | 3.95% | 3,037,849 |
| 2016 short-term bonds | 400,000/2017 | 4.13% | 400,000 |
| Total | | | 8,020,015 |

Senior Perpetual Capital Securities

On October 22, 2013, Chalco Hong Kong Investment Company Limited (the "Issuer") issued US$350 million senior perpetual securities (the "2013 Senior Perpetual Securities") at initial interest rate of 6.625%. The proceeds from issuance of the 2013 Securities after deduction of issuance costs is RMB2,122.6 million, and has been on-lent to us and any of our subsidiaries for general corporate use. Coupon payments of 6.625% per annum on the 2013 Senior Perpetual Securities are paid semi-annually in arrears from October 29, 2013, and may be deferred at our discretion unless, during the six-month period ending on the day before the relevant scheduled coupon payment date, we have, or the Issuer or Chalco Hong Kong has, declared or paid a discretionary dividend, distribution or other discretionary payment on or in respect of, or have/has at its discretion repurchased, redeemed or otherwise acquired, any securities of lower or equal rank, subject to certain exceptions. The 2013 Senior Perpetual Securities have no fixed maturity and are callable only at our option on or after October 29, 2018, at their principal amounts together with any accrued, unpaid or deferred coupon interest payments. After October 29, 2018, the coupon rate will be reset every five calendar years to a rate of interest of expressed as a percentage per annum equal to the sum of (a) the initial spread of 5.312 per cent, (b) the U.S. Treasury Rate, and (c) a margin of 5.00 per cent per annum. While any coupon interest payments are unpaid or deferred, we, Chalco Hong Kong, and the Issuer shall not, subject to certain exceptions, declare or pay any discretionary dividends or make distributions or similar discretionary payments in respect of, or at its discretion repurchase, redeem or otherwise acquire for any consideration any securities of lower or equal rank.

On April 10, 2014, the Issuer issued US$400 million senior perpetual securities at an initial interest rate of 6.25% ("2014 Senior Perpetual Securities"). The proceeds from issuance of 2014 Senior Perpetual Securities after deduction of issuance costs is RMB2,461.8 million. The proceeds will be on-lent to us and any of our subsidiaries for general corporate use. Coupon payments of 6.25% per annum on the 2014 Senior Perpetual Securities are paid semi-annually on April 29 and October 29 in arrears from April 17, 2014, and may be deferred at the discretion of the Group. The first coupon payment date was April 29, 2014. The 2014 Senior Perpetual Securities have no fixed maturity and are callable only at our option on or after April 17, 2017 at their principal amounts together with any accrued, unpaid or deferred coupon interest payments. After April 17, 2017, the coupon rate will be reset to a percentage per annum equal to the sum of (a) the initial spread of 5.423 per cent, (b) the U. S. Treasury Rate, and (c) a margin of 5.00 per cent, per annum. While any coupon interest payments are unpaid or deferred, we, the subsidiary guarantors and the Issuer cannot declare or pay dividends or make distributions or similar discretionary payments in respect of, or repurchase, redeem or otherwise acquire any securities of lower or equal rank. We intend to redeem US$400 million in aggregate principal amount of 6.25% senior perpetual capital securities on April 29, 2017 at the principal amount together with any distribution accrued thereon.

On October 27, 2015, we issued RMB2,000 million perpetual medium-term notes at an initial distribution rate of 5.50% (the "2015 Perpetual Medium-term Notes"). The proceeds from issuance of the 2015 Perpetual Medium-term Notes is RMB2,000 million. The proceeds will be used for repayments of interest-bearing loans and borrowings. Coupon payments of 5.50% per annum on the 2015 Perpetual Medium-term Notes are paid annually in arrears from October 29, 2015, and may be deferred at our discretion. The 2015 Perpetual Medium-term Notes have no fixed maturity and are callable only at our option on October 29, 2020 or any coupon distribution date after October 29, 2020 at their principal amounts together with any accrued, unpaid or deferred coupon distribution payments. The coupon distribution rate will be reset to a percentage per annum equal to the sum of (a) the initial spread of 2.61 per cent, (b) the China Treasury Rate, and (c) a margin of 300 Bps every five years after October 29, 2020. While any coupon distribution payments are unpaid or deferred, the headquarters of the Company cannot declare or pay dividends to shareholders or decrease the share capital, or make material fixed asset investments of the headquarters of the Company.

On October 31, 2016, Chalco Hong Kong Investment Company Limited, a subsidiary of the Company, successfully issued US$500 million senior perpetual securities (the "2016 Senior Perpetual Securities") at a rate of 4.25% at the Hong Kong Stock Exchange. The proceeds were on-lent to the Company and any of its subsidiaries for general corporate use. Coupon payments of 4.25% per annum on the 2016 Senior Perpetual Securities have been made semi-annually on April 29 and October 29 in arrears from November 7, 2016 and may be deferred at the discretion of the Group. The first coupon payment date will be on April 29, 2017. The 2016 Senior Perpetual Securities have no fixed maturity date and are callable only at the Group's option on or after November 7, 2021 at their principal amounts together with any accrued, unpaid or deferred coupon distribution payments. After November 7, 2021, the coupon distribution rate will be reset to a percentage per annum equal to the sum of (a) the initial spread of 2.931 per cent, (b) the U. S. Treasury Rate, and (c) a margin of 5.00 per cent per annum. While any coupon distribution payments are unpaid or deferred, the Group, the wholly-owned subsidiaries of Chalco Hong Kong as guarantors, and the Issuer cannot declare or pay dividends or make distributions or similar discretionary payments in respect of, or repurchase, redeem or otherwise acquire any securities of lower or equal rank.

Restriction on Cash Dividends

Our PRC subsidiaries are required to set aside a certain amount of their retained profits each year, if any, to fund certain statutory reserves and these reserves may not be distributed as cash dividends. In addition, when our subsidiaries incur debts on their own behalf, the instruments governing the debt may restrict their ability to pay dividends or make other distributions to us. Our directors are of the view that we will continue to be able to meet our borrowing payment obligations as they fall due from cash generated from our operating activities.

Capital Expenditures and Capital Commitments

The following table sets forth our capital expenditures for the years ended 2014, 2015 and 2016, and the capital expenditures of each segment as a percentage of our total capital expenditures for the periods indicated:

| | Year Ended December 31 | | | | | |
|---|---|---|---|---|---|---|
| | 2014 | | 2015 | | 2016 | |
| | RMB | % | RMB | % | RMB | % |
| | (in millions, except percentage) | | | | | |
| Alumina | 3,664.4 | 42.2 | 5,527.9 | 53.3 | 2,784.9 | 31.9 |
| Primary aluminum | 2,323.1 | 26.8 | 1,997.2 | 19.3 | 4,121.9 | 47.1 |
| Trading | 119.0 | 1.4 | 17.5 | 0.2 | 81.6 | 0.9 |
| Energy | 2,373.9 | 27.4 | 2,411.6 | 23.2 | 1,609.9 | 18.5 |
| Corporate and others | 195.5 | 2.2 | 412.6 | 4.0 | 143.9 | 1.6 |
| Total | 8,675.9 | 100.0 | 10,366.8 | 100.0 | 8,742.2 | 100.0 |

In 2016, we spent approximately RMB8,742 million of our capital expenditures (excluding equity interest investments) primarily in construction of mining areas, capacity expansion and technology upgrading, energy saving and consumption reduction, environmental governance, resources acquisition and technological research and development.

Our capital expansion plan for 2017 requires a total of approximately RMB15.0 billion in capital expenditures for infrastructure and technology upgrading.

As of December 31, 2016, our Group's contractual but not provided capital commitment to fixed assets investment amounted to RMB7,594.8 million.

As of December 31, 2016, our commitment under operating leases amounted to RMB15,536.9 million, of which the amount payable within one year was RMB515.3 million, the amount payable from one to five years was RMB1,925.6 million and the amount payable after five years was RMB13,096.0 million.

As of December 31, 2016, our commitments to make capital contribution to our associates and joint ventures amounted to RMB1,018.6 million, comprised of the capital contributions of RMB370.0 million to Chalco Mineral Resources Co., Ltd., RMB320.0 million to Huaneng Ningxia Energy Co., Ltd., RMB96.9 million to Ningxia Yinxing Power Co., Ltd., RMB167.7 million to Guangxi Hualei New Material Co., Ltd., RMB14.1 million to Shanxi Regional Electric Power Dingbian Energy Co., Ltd., RMB21.9 million to Guangxi Huazhong Cement Co., Ltd, and RMB28.0 million to Shanxi Chalco Taiyue New Materials Co., Ltd., respectively.

We expect to use primarily operating cash flow in meeting such commitments with the shortfall to be satisfied by proceeds of bank loans, short-term and long-term bonds and medium-term notes.

## C. RESEARCH AND DEVELOPMENT

Our department of science and technology management coordinates the research and development efforts undertaken at our Zhengzhou Institute and technology centers at our plants. The Zhengzhou Institute, the only organization in China dedicated to aluminum smelting research, is responsible for the research and development of technologies for our operations. The technology centers at our plants focus on providing engineering solutions and applying our developed technologies. Each of the plants also conducts operational testing and pilot experimentation relating to various research and development topics. Although we collaborate with universities and other research institutions in China on some of our projects, we generally do not outsource our research and development.

Our total expenditure for research and development was approximately RMB293.8 million, RMB168.8 million and RMB168.9 million for, 2014 and 2015 and 2016, respectively.

## D. TREND INFORMATION

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for the period from January 1, 2016, to December 31, 2016, that are reasonably likely to have a material adverse effect on our revenue, profitability, liquidity or capital resources, or that caused the disclosed financial information to be not necessarily indicative of future operating results or financial conditions.

## E. OFF-BALANCE-SHEET ARRANGEMENTS

There are no off-balance sheet arrangements material to investors that have or are reasonably likely to have a current or future effect on our financial condition, our changes in financial condition, revenue or expenses, results of operations, liquidity, capital expenditures or capital resources.

## F. TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS

The following table summarizes our contractual obligations and commercial commitments for the periods indicated as of December 31, 2016:

| | Payment due by period | | | | |
|---|---|---|---|---|---|
| | Total | Within 1 year | 1 to 2 years | 2 to 5 years | Thereafter |
| | (RMB in millions) | | | | |
| Finance lease payable, including current portion | 7,217.3 | 2,253.7 | 2,068.3 | 2,895.3 | - |
| Long-term bank and other loans, including current portion | 31,700.3 | 4,725.2 | 8,000.7 | 10,275.9 | 8,698.5 |
| Long-term bonds | 2,000.0 | 2,000.0 | - | - | - |
| Medium-term notes and bonds, including current portion | 22,115.0 | 6,400.0 | 12,500.0 | 3,215.0 | - |
| Short-term bonds | 7,900.0 | 7,900.0 | - | - | - |
| Gold leasing arrangement | 3,000.0 | 3,000.0 | - | - | - |
| Short-term bank and other loans | 32,154.8 | 32,154.8 | - | - | - |
| Interest payables for borrowings | 10,653.4 | 6,045.3 | 1,701.5 | 2,436.1 | 470.5 |
| Financial liabilities at fair value through profit or loss | 3.6 | 3.6 | - | - | - |
| Financial liabilities included in other payables and accrued liabilities, excluding accrued interest | 8,495.7 | 8,495.7 | - | - | - |
| Financial liabilities included in other non-current liabilities | 953.5 | - | 218.2 | 330.0 | 405.3 |
| Trade and notes payables | 11,285.3 | 11,285.3 | - | - | - |
| Subtotal | 137,478.9 | 84,263.6 | 24,488.7 | 19,152.3 | 9,574.3 |
| Capital commitments | 7,594.8 | N/A | N/A | N/A | N/A |
| Commitments for capital contribution | 1,018.6 | N/A | N/A | N/A | N/A |
| Commitments under operating lease | 15,536.9 | 515.3 | 508.1 | 1,417.5 | 13,096.0 |
| Total | 24,150.3 | | | | |

G. Safe Harbor

See "Forward-Looking Statements" at the beginning of this annual report.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. DIRECTORS AND SENIOR MANAGEMENT

Directors

The fifth session of our Board currently consists of nine directors, including three executive directors, three non-executive directors and three independent non-executive directors. In accordance with our Articles of Association, our affairs are managed by our Board. The business address of each of our directors is No. 62 North Xizhimen Street, Hai Dian District, Beijing, People's Republic of China, 100082.

We follow our home country practice in relation to the composition of our Board in reliance on the exemption provided under Section 303A.00 of the NYSE Corporate Governance Rules available to foreign private issuers. Our home country practice does not require a majority of directors of a listed company to be independent directors. As such, the majority of our directors are not independent within the meaning of NYSE Corporate Governance Rules.

The table and discussion below set forth information concerning our directors who served on our Board during the year ended December 31, 2016, and up to date of this Annual Report.

| Name | Age | Positions with the Company |
|---|---|---|
| Executive Directors(1) | | |
| Ge Honglin(2) | 60 | Executive Director and Chairman of the Board (resigned) |
| Ao Hong | 55 | Executive Director and President |
| Liu Xiangmin(3) | 54 | Executive Director and Senior Vice President (resigned) |
| Lu Dongliang(4) | 43 | Executive Director and Senior Vice President |
| Jiang Yinggang | 53 | Executive Director and Vice President |
| Non-executive Directors | | |
| Yu Dehui(5) | 57 | Non-executive Director and Chairman of the Board |
| Liu Caiming | 54 | Non-executive Director |
| Wang Jun | 51 | Non-executive Director |
| Independent Non-executive Directors | | |
| Chen Lijie | 62 | Independent Director |
| Hu Shihai | 62 | Independent Director |
| Lie-A-Cheong Tai Chong, David | 57 | Independent Director |

(1) Mr. Ge Honglin resigned from the positions of executive director and Chairman of the Board on February 16, 2016. As of the date of this annual report, we had three executive directors.

(2) Due to other work commitment, Mr. Ge Honglin resigned from the positions of executive director and chairman of the Company, with effect from February 16, 2016. On

February 16, 2016, Mr. Ao Hong was elected by more than half of the directors of the Company to perform the duties of the Chairman of the Board (including but not limited to convening and presiding over meetings of the Board, presiding over the general meetings and executing relevant documents, etc.) during the period after the resignation of Mr. Ge until the new Chairman of the Board was elected by the Company in April 2016.

(3) Due to other work commitment, Mr. Liu Xiangmin resigned from his position as a senior vice president of the Company on May 9, 2016; due to the expiry of the fifth session of the

Board of the Company, Mr. Liu Xiangmin resigned from his position as an executive director of the Company on June 28, 2016; Mr. Liu Xiangmin was elected as a Supervisor of the sixth session of the Supervisory Committee at the 2015 annual general meeting held on June 28, 2016, and was elected as the Chairman of the sixth session of the Supervisory Committee at the first meeting of the sixth session of the Supervisory Committee of the Company on the same day.

(4) The appointment of Mr. Lu Dongliang as the senior vice president of the Company was approved at the 33rd meeting of the fifth session of the Board held on May 9,

2016; Mr. Lu Dongliang was elected as an executive director of the sixth session of the Board of the Company at the 2015 annual general meeting held on June 28, 2016.

(5) Mr. Yu Dehui was elected as a non-executive director of the fifth session of the Board of the Company at the first extraordinary general meeting held on April 8, 2016; on the same day, Mr. Yu Dehui was elected as the Chairman of the fifth session of the Board of the Company at the 31st meeting of the fifth session of the Board of the Company. On June 28, 2016, Mr. Yu Dehui was re-elected as a non-executive director and the Chairman of the sixth session of the

Board of the Company at the 2015 annual general meeting and the first meeting of the sixth session of the Board.

Executive Directors

Ao Hong, aged 55, currently serves as an executive director and the President of our Company. Mr. Ao graduated from Central South University with a doctoral degree in management science and engineering. He is a professor-grade senior engineer with over 30 years of work experience in enterprises of the non-ferrous metals industry. He successively served as the deputy dean of Beijing General Research Institute for Non-ferrous Metals and was concurrently the chairman of GRINM Semiconductor Materials Co., Ltd., the chairman of Guorui Electronics Co., Ltd., the chairman of Guowei Silver Anticorrosive Materials Company in Hong Kong and a deputy general manager of Chinalco. During this period, he also successively served as the chairman of the supervisory committee of the Company, the dean of Chinalco Research Institute of Science and Technology and the chairman of China Rare Earth Co., Ltd. Mr. Ao has been serving as the President of the Company since November 20, 2015, and as an executive director of the Company since December 29, 2015.

Lu Dongliang, aged 43, is currently an executive director and a senior vice president of the Company. Mr. Lu graduated from North China University of Technology majoring in accounting. He holds a bachelor's degree in economics and is an accountant. Mr. Lu has more than 20 years of work experience in financial management and in the non-ferrous metals industry. He successively served as the cadre in the audit department of China Non-ferrous Metals Industry Corporation, the officer-in-charge of the capital division of the finance department of China Copper Lead& Zinc Group Corporation, the head of the accounting division and the capital division of the finance department of Chinalco, the deputy manager and manager of the treasure management division of the finance department, the manager of the general management office, the deputy general manager and general manager of the finance department of the Company, the chief financial officer of Chalco Gansu Aluminum Electricity Co., Ltd., the assistant to the president of the Company and the general manager of Lanzhou Branch of the Company, and the executive director and president of Chalco Gansu Aluminum Electricity Co., Ltd.

Jiang Yinggang, aged 53, is currently an executive director and a vice president of the Company. Graduating from Central South University of Mining and Metallurgy majoring in the metallurgy of nonferrous metals, Mr. Jiang holds a master degree in metallurgy engineering of non-ferrous metals and is a professor-grade senior engineer. Mr. Jiang has long been engaged in production operation and corporate management of production enterprises and has extensive and professional experience. He formerly served as deputy head and then head of the Corporate Management Department of Qinghai Aluminum Plant; head of Qinghai Aluminum Smelter, deputy manager and manager of Qinghai Aluminum Company Limited, and general manager of the Qinghai branch of the Company.

Non-Executive Directors

Yu Dehui, aged 57, has been serving as the Chairman of our Board and as a non-executive director on our Board since April 8, 2016. He graduated from Ecole des Hautes Etudes en Sciences Sociales (EHESS) and School of Economics of Paris University Nanterre, majoring in development economics, with a doctoral degree in economics, and he has been a professor. Mr. Yu has extensive experience in various areas such as energy, non-ferrous metals, economics and management. He successively served as the general director for technology of SPEIC, the general director of the department of science, technology and standards of the State Environmental Protection Administration. He also served as a deputy mayor of Baotou City, a vice governor of the government of the Inner Mongolia Autonomous Region, a vice president of China Power Investment Corporation, and a vice president of State Power Investment Corporation. Mr. Yu currently also serves as the president, and a director of the board, of Chinalco.

Liu Caiming, aged 54, serves as a non-executive director on our Board. He graduated from Fudan University majoring in political economics and obtained a doctoral degree in Economics. He is a senior accountant and engaged in the financial and accounting industry for more than 30 years. Mr. Liu has extensive experience in corporate management and financial management. He had subsequently served as deputy head and head of the Finance Department of China Non-ferrous Metals Foreign Engineering Corporation, deputy general manager of China Non-ferrous Metals Construction Group Limited, deputy general manager of China Nonferrous Construction Group Limited, director and deputy general manager of China Non-ferrous Metal Industry's Foreign Engineering and Construction Co., Ltd., and deputy general manager of China Nonferrous Metal Mining and Construction (Group) Co., Ltd. Mr. Liu has also acted as titular deputy head of Department of Finance of Yunnan Province, director of SASAC of Yunnan Provincial People's Government and assistant to the governor of Yunnan Province and director of SASAC Yunnan. From January 2007 to February 2011, Mr. Liu acted as deputy general manager of Chinalco, during which time he acted as chairman of Yunnan Copper Industry (Group) Co., Ltd., and president of China Copper Co., Ltd. He acted as our senior vice president and chief financial officer since February 23, 2011 and as our executive director since May 31, 2011. Mr. Liu resigned as our executive director, chief financial officer and senior vice president and was re-designated as non-executive Director on March 8, 2013. He resigned as our non-executive director on March 18, 2014 and was re-appointed as non-executive director on our Board on February 26, 2015.

Wang Jun, aged 51, has been serving as a non-executive director on our Board since June 27, 2013. Mr. Wang graduated from Huazhong Institute of Engineering with a degree of industrial and civil construction. He has extensive experience in financial and corporate management. Mr. Wang formerly served as engineer in the engineering department of Babcock & Wilcox Beijing Company Ltd., deputy manager of the real estate development department of China Yanxing Company, senior deputy manager of the equity management department, senior manager of the business management department, senior manager, deputy general manager and general manager of the custody and settlement department in China Cinda Asset Management Co., Ltd. and general manager of the equity management department of China Cinda Asset Management Co. Ltd. Mr. Wang currently serves as the business director of China Cinda Asset Management Co., Ltd.

Independent Non-Executive Directors

Chen Lijie, aged 62, has been serving as an independent non-executive director since February 26, 2015. Ms. Chen graduated from Renmin University of China Law School and obtained a doctoral degree in Laws. Ms. Chen Lijie has more than 30 years of experience in law. She successively acted as director and deputy director of Commercial Affairs of the Office of Legislative Affairs of the State Council, deputy director of Department of Policies and Laws of the National Economic and Trade Commission, patrol officer of Bureau of Policies, Laws and Regulations of SASAC and chief legal consultant of China Mobile Communications Corporation.

Hu Shihai, aged 62, has been serving as an independent non-executive director since June 25, 2015. Mr. Hu graduated from Shanghai Jiao Tong University majoring in thermal energy engineering. He is a professor-level senior engineer with more than 40 years of working experience in the power industry. Mr. Hu has extensive experience in corporate management and technical management and successively served as the supervisor, director and deputy head of the Huaneng Shanghai Shidongkou No. 2 Power Plant, deputy director of the preparatory office of the Shanghai Waigaoqiao No. 2 Power Plant, manager of the production department and assistant to the general manager of Huaneng Power International, Inc. and assistant to the general manager and director of the safety production department, and chief engineer of China Huaneng Group.

Lie-A-Cheong Tai Chong, David, aged 57, has been serving as an independent non-executive director since December 29, 2015. He is honored with the Silver Bauhinia Star (SBS), Officier de l'Ordre National du Merite and Justice of Peace. Mr. Lie is the executive chairman of Newpower International (Holdings) Co., Ltd. and China Concept Consulting Ltd. He was selected as a member of the National Committee of the 8th, 9th, 10th and 11th Chinese People's Political Consultative Conference since 1993. From 2007 to 2013, he acted as a panel convener cum member of the Financial Reporting Review Panel of Hong Kong Special Administrative Region ("HKSAR"). Mr. Lie is currently the honorary consul of the Hashemite Kingdom of Jordan in the HKSAR, the chairman of the Hong Kong-Taiwan Economic and Cultural Cooperation and Promotion Council, the chairman of the Hong Kong-Taiwan Business Co-operation Committee, a member of the Commission on Strategic Development of the HKSAR, a standing committee member of the China Overseas Friendship Association, and a member of the Hong Kong General Chamber of Commerce (HKGCC). Currently, Mr. Lie is also an independent non-executive director of Herald Holdings Limited, a listed company in Hong Kong.

Supervisors

Our supervisors are elected to represent our employees and shareholders and serve a term of three years or until the election of their respective successors, whichever is earlier. Our supervisors currently comprise Mr. Liu Xiangmin, Mr. Wang Jun and Mr. Wu Zuoming.

The table and discussion below set forth certain information concerning our supervisors who served on our supervisory committee during the year ended December 31, 2016,and up to the date of this Annual Report.

| Name | Age | Positions with the Company |
|---|---|---|
| Zhao Zhao(1) | 55 | Chairman of Supervisory Committee (resigned) |
| Liu Xiangmin(2) | 54 | Chairman of Supervisory Committee |
| Yuan Li(3) | 58 | Supervisor(resigned) |
| Wang Jun | 46 | Supervisor |
| Wu Zuoming(4) | 50 | Supervisor |

(1) Due to the expiry of the term for the fifth session of the Supervisory Committee of the Company, Mr. Zhao Zhao resigned from

his position as the chairman of the supervisory committee on June 28, 2016.

(2) Due to other work commitments, Mr. Liu Xiangmin resigned from his position as a senior vice president of the Company on May 9, 2016; due to the expiry of the fifth session of the Board of the Company, Mr. Liu Xiangmin resigned from his position as an executive director of the Company on June 28, 2016; Mr. Liu Xiangmin was elected as a supervisor of the sixth session of the supervisory committee at the 2015 annual general meeting held on June 28, 2016, and was elected as the chairman of the sixth session of the supervisory committee at the first meeting of the sixth session of

the supervisory committee of the Company on the same day.

(3) Due to the expiry of the term of the fifth session of the supervisory committee of the Company, Mr. Yuan Li resigned from the position as a supervisor on June 28, 2016.

(4) Mr. Wu Zuoming was elected as an employee supervisor of the sixth session of the supervisory committee at the employees' representatives meeting on June 28, 2016.

Liu Xiangmin, aged 54, is currently the Chairman of the Supervisory Committee of the Company. Mr. Liu graduated from Central South University, majoring in non-ferrous metallurgy. He has a doctorate degree in engineering and is a professor-grade senior engineer. Mr. Liu has long engaged in non-ferrous metal metallurgy research and corporate management and has accumulated extensive and professional experience. He previously served as the deputy head and head of the Alumina branch of Zhongzhou Aluminum Plant, deputy head of Zhongzhou Aluminum Plant, general manager of Zhongzhou Branch of the Company as well as an executive director, vice president and a senior vice president of the Company.

Wang Jun, aged 46, is currently a supervisor of Supervisory Committee of the Company. He obtained a master's degree in business administration from Tsinghua University. He is a senior accountant and has extensive experience in corporate financial accounting, fund management and auditing. Mr. Wang successively served as the deputy manager and manager of the treasure management division of the finance department of Chinalco, the general representative of the Peru office of Chinalco, a director and senior auditing manager of Minera Chinalco Perú S.A., the chief financial officer and the manager of the finance department of Chinalco Resources Corporation, the chief financial officer of China Aluminum International Engineering Co., Ltd., an executive director, the chief financial officer and the secretary to the board of directors of China Aluminum International Engineering Corporation Limited. Mr. Wang currently serves as the deputy chief accountant, general manager of the finance department and capital operating department of Chinalco. He is also a director of China Aluminum International Engineering Corporation Limited and a director and the president of Aluminum Corporation of China Overseas Holdings Limited.

Wu Zuoming, aged 50, is currently a Supervisor of the Company, the deputy secretary of the Communist Party Committee, and deputy general manager and the chairman of the labor union of the Guangxi Branch of the Company. Mr. Wu holds an MBA degree from Renmin University of China. He is a senior engineer. Mr. Wu has extensive experience in human resource management. He successively acted as the deputy manager of the Personnel Division, Human Resource Department of China Aluminum Corporation; the person in charge of the Personnel Division, Human Resource Department for the Preparatory Team of Chinalco; the deputy manager of the Personnel Division (Training Division), Human Resource Department of Chinalco; the deputy manager of Assessment and Training Division, the manager of Employee Management Division and the manager of General Division of the Company; the senior manager of the Human Resource Department (Retired Cadres Department) and the manager of the General Division of Chinalco; and the deputy general manager and general manager of the Human Resource Department of the Company.

Senior Management

The table and discussion below set forth certain information concerning other member of senior management during the year ended December 31, 2016, and up to the date of this Annual Report.

| Name | Age | Positions with the Company |
|---|---|---|
| Qiao Guiling[(1)] | 48 | Vice President (resigned) |
| Xu Bo[(2)] | 52 | Vice President (in office) and Secretary to the Board (resigned)) |
| Zhang Zhankui [(3)] | 58 | Chief Financial Officer and Secretary to the Board |
| Leng Zhengxu[(4)] | 56 | Vice President |

(1) Due to other work commitment, Ms. Qiao Guilin resigned from the position of vice president of the Company,

with effect from February 16, 2016.

(2) Due to other work commitment, Mr. Xu Bo resigned from the positions of the Secretary to the Board, with effect from March 17, 2016. Mr. Xu Bo still serves as a vice president of the Company.

(3) The appointment of Mr. Zhang Zhankui as the Company Secretary (Secretary to the Board) was approved at the 29th meeting of the fifth session of the Board of the Company on March 17, 2016. Mr. Zhang Zhankui also serves as the Chief Financial Officer of the Company.

(4) The appointment of Mr. Leng

Zhengxu as a vice president of the Company was approved at the sixth meeting of the sixth session of the Board of the Company on January 20, 2017.

Xu Bo, aged 52, is currently a vice president of the Company. Mr. Xu graduated from North China University of Water Resources and Electric Power, majoring in hydraulic structure engineering, and obtained a master's degree in engineering. He also obtained a Ph.D. degree in economics from Renmin University of China. He is a senior engineer. Mr. Xu has extensive experience in mergers and acquisitions, capital operation, corporation management, and enjoys a high reputation in energy sectors such as coal and electric power. He formerly served as: deputy head of the hydro power and operations department and office manager of Power and Machinery Bureau; general manager and assistant to the head of the bureau in Steel Structure Department of China Huadian Power Station Equipment Engineering Group Corporation; deputy general manager of China Huadian Power Station Equipment Engineering Group Corporation, standing deputy general manager and general manager of China Huadian Engineering Co., Ltd.; deputy general manager of Huadian Coal Industry Group Company Limited; head of China Huadian Corporation Shaanxi Office; general manager of China Huadian Corporation Shaanxi Branch; executive director and general manager of Huadian Shaanxi Energy Company, the assistant to the president of the Company and executive director and general manager of Chalco Energy Co., Ltd., a vice president and Company Secretary (Secretary to the Board) of the Company.

Zhang Zhankui, aged 58, is currently the Chief Financial Officer and Company Secretary (Secretary to the Board) of the Company. Mr. Zhang is a postgraduate in economic management and a senior accountant. He has extensive experience in corporate financial accounting, fund management and auditing. Mr. Zhang formerly served as: deputy head, the head of the Finance Division and then the head of the Audit Division of China General Design and Research Institute for Non-ferrous metallurgy; deputy general manager of Beijing Enfei Tech-industry Group; the head of the Accounting Division of the Finance Department and deputy head of the Finance Department of China Copper Lead & Zinc Group Corporation; officer-in-charge of the Company's assets and finance in the Listing Office of the Company; head of the Fund Management Division of the Finance Department of Company and manager of the General Division of the Finance Department of the Company as well as deputy head and head of the Finance Department of Chinalco; and a Supervisor of the Company.

Leng Zhengxu, aged 56, is currently a vice president of the Company. Mr. Leng graduated from Guizhou Industrial College, majoring in non-ferrous metallurgy. He is a bachelor of engineering and a professor-level senior engineer. Mr. Leng has over 30 years of working experience in the non-ferrous metals industry and has extensive experiences in corporate management and production technology. He served as deputy director of the No.1workshop and deputy secretary of Chinese Communist Party of No.2 Aluminum Smelter of Guizhou Aluminum Plant, director of the No.2 workshop of No.3 Aluminum Smelter of Guizhou Aluminum Plant, chief engineer of No. 1 Aluminum Smelter of Guizhou Aluminum Plant, chief engineer of Guizhou Aluminum Plant, deputy general manager of Guizhou Branch of Chinalco, general manager of the production department and general manager of corporate management department of the Company, general manager of Shanxi Branch of Chinalco, head of Shanxi Aluminum Plant, executive director of Shanxi Huaxing Alumina Co., Ltd., general manager of Guizhou Branch of Chinalco, head and deputy secretary of the Chinese Communist Party of Guizhou Aluminum Plant, chairman of Guizhou Huajin Alumina Co., Ltd., chairman of Zunyi Aluminum Co., Ltd., chairman of Chalco Zunyi Alumina Co., Ltd. and assistant to the president of the Company.

B.COMPENSATION

Executive Compensation

Executive directors are entitled to a director's fee, performance bonuses and welfare benefits provided under the relevant PRC laws and regulations. Non-executive directors are entitled only to a director's fees. The aggregate amount of cash compensation paid by us to our directors in 2016 for services performed in connection with their respective capacities above was approximately RMB1.6 million. The aggregate amount of cash compensation paid by us to our senior management who are not members of our Board in 2016 was approximately RMB1.7 million, respectively. Our executive directors and supervisors who are employees also receive compensation in the form of housing allowances, other allowances and benefits and contributions to their pension plans. Directors receive fees for their services. None of the service contracts of our directors provide benefits to our directors upon their termination. Details of the emoluments paid to our directors and supervisors during the year ended December 31, 2016 are as follows:

| Name of Directors and Supervisors | Fees | Salary | Bonus | Pension | Total |
|---|---|---|---|---|---|
| | RMB('000) | RMB('000) | RMB('000) | RMB('000) | RMB('000) |
| Executive Directors | | | | | |
| Ge Honglin (resigned) | - | - | - | - | - |
| Ao Hong | - | - | - | - | - |
| Lu Dongliang | - | - | - | - | - |
| Liu Xiangmin (resigned) | - | - | - | - | - |
| Jiang Yinggang | - | 725 | - | 76 | 801 |
| Non-Executive Directors | | | | | |
| Yu Dehui | - | - | - | - | - |
| Liu Caiming | - | - | - | - | - |
| Wang Jun | 150 | - | - | - | 150 |
| Independent Non-Executive Directors | | | | | |
| Lie-A-Cheong Tai Chong, David | 204 | - | - | - | 204 |
| Chen Lijie | 204 | - | - | - | 204 |
| Hu Shihai | 204 | - | - | - | 204 |
| | 762 | 725 | - | 76 | 1,563 |
| Supervisors | | | | | |
| Liu Xiangmin | - | - | - | - | - |
| Wang Jun | - | - | - | - | - |
| Yuan Li (resigned) | - | - | - | - | - |
| Wu Zuoming | - | 250 | - | 38 | 288 |
| Zhao Zhao (resigned) | - | | - | - | - |
| | - | 250 | - | 38 | 288 |
| Total | 762 | 975 | - | 114 | 1,851 |

Senior Management Incentive System

In order to better provide incentives for our senior management and improve our shareholders' value, we adopted a special compensation system for our senior management designed to align our senior management's financial interests with our operating performance. Under this system, the senior management's compensation consists of the following components:

- basic salaries;
- performance bonuses;
- welfare benefits; and
- incentive bonuses.

C. BOARD PRACTICES

Board of Directors

All of our directors and supervisors serve a term of three years or until such later date as their successors are elected or appointed. Directors and supervisors may serve consecutive terms. Each of our directors and supervisors has entered into a service contract with us, none of which can be terminated by us within one year without payment of compensation (other than statutory compensation). There were no arrangements providing for benefits upon termination of directors, supervisors or other senior management personnel. One of the supervisors is an employee representative appointed by our employees and the rest are appointed by the shareholders. The following table sets forth the number of years our current directors have held their positions and the expiration of their current term.

| Name | Held Position Since | Expiration of Term |
|---|---|---|
| Ao Hong | June 28, 2016 | June 30, 2019 |
| Lu Dongliang | June 28, 2016 | June 30, 2019 |
| Jiang Yinggang | June 28, 2016 | June 30, 2019 |
| Yu Dehui | June 28, 2016 | June 30, 2019 |
| Liu Caiming | June 28, 2016 | June 30, 2019 |
| Wang Jun | June 28, 2016 | June 30, 2019 |
| Chen Lijie | June 28, 2016 | June 30, 2019 |
| Hu Shihai | June 28, 2016 | June 30, 2019 |
| Lie-A-Cheong Tai Chong, David | June 28, 2016 | June 30, 2019 |

Audit Committee

As at the date of this Annual Report, our audit committee consists of three independent non-executive directors, namely, Ms. Chen Lijie, Mr. Hu Shihai and Mr. Lie-A-Cheong Tai Chong, David. Mr. Lie-A-Cheong Tai Chong, David is the chairman of the audit committee.

The primary duties of our audit committee as set out in the committee charter include proposing to engage or replace the auditor, supervising our internal audit and its implementation, being responsible for the communication between the internal audit and external audit, auditing our financial information and its disclosure, reviewing the Company's financial control, internal control and risk management systems, studying on our other relevant professional matters, and putting forward suggestions for the decisions of the Board for reference.

Remuneration Committee

As at the date of this Annual Report, our remuneration committee consists of two independent non-executive directors, Mr. Hu Shihai, Mr. Lie-A-Cheong Tai Chong, David and a non-executive director, Mr. Liu Caiming. Mr. Hu Shihai is the chairman of the remuneration committee.

The primary duties of our remuneration committee as set out in the committee charter include: preparing the remuneration management scheme and remuneration proposal for directors, employee-representative supervisors and senior management, and providing suggestions to the Board; preparing measures on performance evaluation of senior management, performance assessment procedures and relevant rewards and punishments, and providing suggestions to the Board; monitoring the implementation of the remuneration system of our Company; reviewing senior management's fulfilment of duties and conducting performance assessments; and other functions and authorities delegated by the Board. In 2016, the remuneration committee convened one meeting, to consider and approve remuneration standards for 2016 for our directors, supervisors and other senior management members.

We follow our home country practice in relation to the composition of our remuneration committee in reliance on the exemption provided under NYSE Corporate Governance Rule 303A.00 available to foreign private issuers. Our home country practice does not require us to establish a remuneration committee which must be composed entirely of independent directors.

Nomination Committee

As at the date of this Annual Report, our nomination committee consists of one executive director, namely Mr. Ao Hong; one non-executive director, namely Mr. Yu Dehui, and three independent non-executive directors, namely Mr. Lie-A-Cheong Tai Chong, David., Mr. Hu Shihai and Ms. Chen Lijie. Mr. Ge Honglin served as the chairman of our nomination committee before he resigned as executive director on February 16, 2016. Mr. Yu Dehui is the chairman of the nomination committee.

The primary duties of our nomination committee as set out in the committee charter include: studying the selection standards and procedures for directors, senior management and members of special committees under the Board and providing suggestions to the Board; reviewing the qualification of candidates for directors, senior management and members of special committees under the Board and providing advice on inspection and appointment; assessing the independence of independent non-executive directors; and other functions and authorities delegated by the Board.

We follow our home country practice in relation to the composition of our nomination committee in reliance on the exemption provided under NYSE Corporate Governance Rule 303A.00 available to foreign private issuers. Our home country practice does not require us to establish a nomination committee which must be composed entirely of independent directors.

Development and Planning Committee

As at the date of this Annual Report, our development and planning committee consists of two executive directors, namely Mr. Ao Hong and Mr. Jiang Yinggang, one non-executive director, namely Mr. Yu Dehui, and one independent non-executive director, namely Mr. Hu Shihai. Mr. Yu Dehui is the chairman of the development and planning committee. Mr. Ge Honglin served as the chairman of our development and planning committee before he resigned as executive director on February 16, 2016. In accordance with the committee charter, the committee reviews and assesses our strategic plans for development, fiscal budgeting, investment, business operations and investments returns.

Occupational Health and Safety and Environmental Committee

Our occupational health and safety and environmental committee consists of two executive directors, namely Mr. Lu Dongliang and Mr. Jiang Yinggang, and one non-executive director, namely Mr. Wang Jun, with Mr. Jiang Yinggang as the chairman. This committee considers our annual planning on health, environmental protection and safety, supervises our implementation of the planning on health, environmental protection and safety initiatives, makes inquiries into serious incidents and inspects and supervises the handling of such incidents and makes recommendations to the Board on major decisions on health, environmental protection and safety.

Supervisory Committee

Due to expiration of the term for the fifth session of the supervisory committee, Mr. Zhao Zhao resigned as chairman of the supervisory committee and Mr. Yuan Li resigned as a member of the supervisory committee on June 28, 2016. Our supervisory committee consists of three supervisors, namely Mr. Liu Xiangmin and Mr. Wang Jun as our shareholder representative supervisors, with Mr. Liu Xiangmin being the chairman of our supervisory committee, and Wu Zuoming as the employee representative supervisor. The term of all members of the supervisory committee of our Company will expire upon conclusion of the 2018 annual general meeting. Following are the primary duties of our supervisory committee:

- inspection of implementation of resolutions of the general meetings;
- inspection of legal compliance of our operations;

- inspection of our financial activities;
- inspection of the utilization of proceeds raised by us;
- inspection of the acquisitions and disposals of our assets;
- inspection of our connected transactions; and
- review of self-assessment report on internal control.

## D. EMPLOYEES

As of December 31, 2014, 2015 and 2016, we had 75,749, 70,368 and 65,755 employees, respectively. The number of our employees decreased from 2015 to 2016, which was mainly due to the termination of labor relationship through negotiation and retirement. The table below sets forth the number of our employees by function and location as of the periods indicated:

| | As of December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2014 | | 2015 | | 2016 | |
| Function | | (%) | | (%) | | (%) |
| Alumina production | 31,456 | 41.53 | 29,347 | 41.71 | 29,783 | 45.29 |
| Primary aluminum production | 28,010 | 36.98 | 26,224 | 37.27 | 22,473 | 34.18 |
| Mining operation | 3,106 | 4.1 | 2,885 | 4.1 | 2,696 | 4.1 |
| Research and development | 680 | 0.90 | 1,056 | 1.5 | 986 | 1.5 |
| Sales and marketing | 561 | 0.74 | 521 | 0.74 | 487 | 0.74 |
| Energy | 7,755 | 10.24 | 6,543 | 9.30 | 5792 | 8.81 |
| Management and others[1] | 4,181 | 5.51 | 3,792 | 5.38 | 3538 | 5.38 |
| Total | 75,749 | 100.0 | 70,368 | 100.0 | 65,755 | 100.0 |

(1) Excluding our management personnel for alumina production, and primary aluminum production.

| Location | Employees | % of Total |
|---|---|---|
| Shandong | 8,808 | 13.4 |

| | | |
|---|---|---|
| Chalco Shandong | 7,011 | 10.67 |
| Shandong Huayu | 1,797 | 2.73 |
| Henan | 11,223 | 17.07 |
| Henan branch | 6,101 | 9.28 |
| Chalco Zhongzhou | 4,445 | 6.76 |
| Zhengzhou Institute | 677 | 1.03 |
| Guizhou | 7,341 | 11.16 |
| Guizhou Huajin | 791 | 1.2 |
| Guizhou branch | 4,661 | 7.09 |
| Zunyi Aluminum | 964 | 1.46 |
| Zunyi Alumina | 925 | 1.41 |
| Guangxi | 3,469 | 5.28 |
| Guangxi branch | 3,469 | 5.28 |
| Shanxi | 10,379 | 15.78 |
| Shanxi branch | 6,683 | 10.15 |
| Shanxi Huasheng | 1,676 | 2.55 |
| Shanxi Huaze | 1,611 | 2.45 |
| Shanxi Huarun | 44 | 0.07 |
| Shanxi Xinghua Technology | 365 | 0.56 |
| Gansu | 6,162 | 9.37 |
| Lanzhou branch | 2,552 | 3.88 |
| Gansu Hualu | 1,361 | 2.07 |
| Liancheng branch | 2,249 | 3.42 |
| Liaoning | 1,493 | 2.27 |
| Fushun Aluminum | 1,493 | 2.27 |
| Qinghai | 3,220 | 4.9 |
| Qinghai branch | 3,220 | 4.9 |
| Chongqing | 784 | 1.19 |
| Chongqing branch | 784 | 1.19 |
| Inner Mongolia | 5,554 | 8.45 |
| Baotou Aluminum | 5,554 | 8.45 |
| Ningxia | 5,792 | 8.81 |
| Ningxia Energy | 5,792 | 8.81 |
| Shanghai | 23 | 0.03 |
| Chinalco Shanghai | 23 | 0.03 |
| Others (including employees of subsidiaries under construction) | 1,235 | 1.88 |
| Headquarters | 272 | 0.41 |
| Total | 65,755 | 100.0 |

We have workers' unions at the plant level that protect employees' rights and welfare benefits, organize educational programs, encourage employee participation in management decisions and mediate disputes between individual employees and us. All employees are union members. We have not experienced any strikes or other labor disturbances that have interfered with our operations and we believe that we maintain good relationships with our employees.

The remuneration package of our employees includes salary, bonuses and allowances. Employees also receive welfare benefits including medical care, housing subsidies, childcare and education, retirement and other miscellaneous items. In accordance with applicable PRC regulations, we participate in pension contribution plans organized by provincial and municipal governments, under which each of our plants is required to contribute an amount equal to a specified percentage of its employees' salaries, bonuses and various allowances. The amount of contribution as a percentage of the employees' salary is, on average, approximately 20% depending in part on the location of the plant. We have made all required pension contributions up to December 31, 2016. Retirees who retired prior to the date of the reorganization will have their pensions paid out of the pension plans established by the PRC government. We provide to our employees various social welfare benefits through various institutions owned by Chinalco and its other affiliates or through third parties.

E. SHARE OWNERSHIP

As of the date of this annual report, the following directors, supervisors or senior management own an interest in shares of our Company:

| Name | Position | Share class | Number of shares | % of respective share class |
|---|---|---|---|---|
| Zhao Zhao | supervisor (resigned) | Domestic Shares | 5,100 | <0.1% |
| Jiang Yinggang | executive director | Domestic Shares | 10,000 | <0.1% |

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. MAJOR SHAREHOLDERS

Directors

We are a joint stock limited company organized under the laws of the PRC. Our parent company, Chinalco, a state-owned enterprise, beneficially owns 35.77% of our outstanding ordinary Shares directly and indirectly through its controlled entities. Chinalco holds a significant portion of our domestic shares in the form of state legal person shares, which do not have voting rights different from our other shares. Chinalco has substantial influence over our management, policies and corporate actions and can exercise all rights as our controlling shareholder subject to the relevant laws, rules and regulations. Approximately 64.23% of our total outstanding ordinary Shares are held by public shareholders, of which 25.15% and 39.08% are owned by holders of H Shares and A Shares, respectively. The following table sets forth information regarding ownership of our issued and outstanding capital stock as of December 31, 2016. The table includes all persons who are known by us to own, either as beneficial owners or holders of record, five percent or more of any class of shares.

| Holders of A Shares and H Shares | As of December 31, 2016 Number of shares (in millions) | % of respective share class[3] | % of issued total share capital[4] |
|---|---|---|---|
| Chinalco[1] | | | |
| A Shares | 5,135.38(L)[2] | 46.86(L) | 34.46(L) |
| H Shares | 196.00(L) | 4.97(L) | 1.31(L) |
| JP Morgan Chase & Co. | | | |
| H Shares | 960.02(L) | 24.34(L) | 6.44(L) |
| | 17.92(S)[5] | 0.45(S) | 0.12(S) |
| | 855.02(P)[6] | 21.67(P) | 5.74(P) |
| Templeton Asset Management Ltd. | | | |
| H Shares | 857.61(L) | 21.74(L) | 5.75(L) |
| BlackRock, Inc | | | |
| H Shares | 488.31(L)[7] | 12.38(L) | 3.28(L) |
| | 0.79(S)[7] | 0.02(S) | 0.01(S) |
| The Goldman Sachs Group, Inc | | | |
| H Shares | 350.54(L)[8] | 8.89(L) | 2.35(L) |
| | 342.71(S)[8] | 8.69(S) | 2.30(S) |
| BlackRock Global Funds | | | |
| H Shares | 238.55(L) | 6.05(L) | 1.60(L) |

(1) Including 4,889,864,006 A shares directly held by Chinalco, and an aggregate interest of 245,518,049 A shares and 196,000,000 H shares held by various controlled subsidiaries of Chinalco, comprising 238,377,795 A shares held by Baotou Aluminum (Group) Co., Ltd., 7,140,254 A shares held

by Shanxi Aluminum Plant and 196,000,000 H shares held by Aluminum Corporation of China Overseas Holdings Limited.

(2) The letter "L" denotes a long position.

(3) The total number of our A shares is 10,959,832,268 and the total number of our H shares is 3,943,965,968.

(4) The number of our total issued shares is 14,903,798,236 shares.

(5) The letter "S" denotes a short position.

(6) The letter "P" denotes a lending pool.

(7) These interests were held directly by various corporations controlled by BlackRock, Inc.. Among the aggregate interests in the short position in H shares, 202,000 H

shares were held as derivatives.

(8) These interests were held directly by various corporations controlled by The Goldman Sachs Group, Inc.. Among the aggregate interests in the long position in H shares, 14,142,500 H shares were held as derivatives. Among the aggregate interests in the short position in H shares, 1,140,697 H shares were held as derivatives.

We are not aware of any arrangement that may at a subsequent date result in a change of control of Chalco.
On April 24, 2007, we issued 1,236,731,739 A Shares by way of share exchange with the other shareholders of Shandong Aluminum and Lanzhou Aluminum, including a subsidiary of Chinalco, to acquire the existing issued shares not held by us. On the same date, China Orient Asset Management Corporation, a PRC state-owned financial enterprise, transferred all of its equity interest in us to Chinalco and ceased to be our shareholder. On December 28, 2007, we issued 637,880,000 A Shares to a subsidiary of Chinalco in exchange for 100% equity in Baotou Aluminum. In June 2015, the Company non-publicly issued an additional 1,379,310,344 A shares to qualified investors with an issue price of RMB5.8 per share.
To the best of our knowledge, as of December 30, 2016, there were 6,396,313 ADSs outstanding, and 69 registered ADSs holders.
As an owner of at least 30% of our issued and outstanding shares, the parent company is deemed a controlling shareholder and therefore may not exercise its voting rights with respect to various matters related to our shares in a manner prejudicial to the interests of our other shareholders. See "Item 10. Additional Information - B. Memorandum and Articles of Association." In accordance with our Articles of Association, each share of our capital stock has one vote and the shares of the same class have the same rights. Other than the foregoing restrictions, the voting rights of our major holders of domestic and H Shares are identical to those of any other holders of the same class of shares. Holders of domestic shares and H Shares are deemed to be shareholders of different classes for some matters, which may affect their respective interests. Other than the foregoing, holders of H Shares and domestic shares are entitled to the same voting rights.

B. RELATED PARTY TRANSACTIONS

Connected Transactions under Hong Kong Listing Rules

Under the Listing Rules, transactions between connected persons and us, or connected transactions, generally must be reported to the Hong Kong Stock Exchange, announced to the public and/or approved by shareholders unless the foregoing requirements are waived by the Hong Kong Stock Exchange or exempted under the Listing Rules. Each year our independent non-executive directors must review our non-exempt continuing transactions and confirm that these transactions have been entered into:

(i) in the ordinary and usual course of our business;

(ii) with the terms of the transaction being fair and reasonable as far as our shareholders are concerned;

(iii) either on normal commercial terms or, if there are not sufficient comparable transactions to judge whether they are on normal commercial terms, on terms no less favorable to us than terms available to or from (as appropriate) independent third parties; and

(iv) in accordance with the relevant agreement governing them on terms that are fair and reasonable and in the interests of our shareholders as a whole.

Although the definition of connected transactions is not synonymous with the definition of related party transactions, the concepts are sufficiently similar that the description of our connected transactions would satisfy disclosure requirements under U.S. securities laws.
The following table sets forth the details of our material connected transactions for the year ended December 31, 2016.

| Agreement | Nature | Term of the Agreement | Transaction Amount in 2016 | Annual Cap for 2016 |
|---|---|---|---|---|
| Continuing Connected Transactions | | | *(RMB in millions)* | *(RMB in millions)* |
| Comprehensive Social and Logistics Services Agreement (Counterparty: Chinalco) | Chinalco provides us with a broad range of social and logistics services including education and schooling, public transportation and property management. | The original agreement was entered on November 5, 2001, and expired on December 31, 2012. Pursuant to the supplementary agreement entered into in 2012, the term was renewed and expired on December 31, 2015. Pursuant to the supplementary agreement entered into in 2015, the term was renewed for three years from January 1 2016 to December 2018. | 307 | 550 |
| General Agreement on Mutual Provision of Production Supplies and Ancillary Services (Counterparty: Chinalco) | We purchase from Chinalco ancillary production supplies and services which include, among other things, various raw materials required in alumina and primary aluminum production, transportation and loading services and production supporting services. | The original agreement was entered on into November 5, 2001, and expired on December 31, 2012. Pursuant to the supplementary agreement entered into in 2012, the term was renewed and entered on December 31, 2015. Pursuant to the supplementary agreement entered into in 2015, the term was renewed for three years from January 1 2016 to December 2018. | 2,223 | 5,900 |
| Mineral Supply Agreement (Counterparty: Chinalco) | Chinalco provides us with bauxite and limestone from several mines that it operates. Chinalco must not provide bauxite and limestone to bauxite and limestone requirements. | The original agreement was entered on November 5, 2001, and expired on December 31, 2012. Pursuant to the supplementary agreement entered into in 2012, the term was renewed and expired in December 31, 2015. Pursuant to the supplementary agreement entered into in 2015, the term was renewed for three years from January 1, 2016 | 66 | 360 |

| | | | | |
|---|---|---|---|---|
| | | to December 2018. | | |
| Provision of Engineering, Construction and Supervisory Services Agreement (Counterparty: Chinalco) | Chinalco provides us with certain engineering, construction and supervisory services at the state guidance price and, where there is no state guidance price, at market price. Such services are mainly provided by subsidiaries of Chinalco including China Aluminum International Engineering Corporation Limited. | The original agreement was entered on November 5, 2001, and expired on December 31, 2012. Pursuant to the supplementary agreement entered into in 2012, the term was renewed and expired on December 31, 2015. Pursuant to the supplementary agreement entered into in 2015, the term was renewed for three years from January 1, 2016 to December 2018. | 1,525 | 6,500 |

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| | | | | |
|---|---|---|---|---|
| Land Use Rights Leasing Agreement (Counterparty: Chinalco) | Chinalco leases 470 parcels of land covering an aggregate area of approximately 61.2 million square meters and spanning across eight provinces in the PRC to us. | The original agreement was entered on November 5, 2001, for a term of 50 years, expiring on June 30, 2051. | 435 | 1,200 |
| Fixed Assets Leases Framework Contract (Counterparty: Chinalco) | We have agreed with Chinalco to provide leases to each other regarding buildings, constructions, machinery, apparatus, transportation facilities as well as equipment, appliance or tools and other fixed assets owned by either party in relation to production and operation | Pursuant to the agreement entered into on April 28, 2015, the term is from January 1, 2016 to December 31, 2018, for a term of three years. | 75 | 110 |
| Financial Services Agreement (Counterparty: Chinalco Finance) | Chinalco Finance has agreed with Chinalco to provide us with deposit services, credit services and miscellaneous financial services. We have the right to choose the financial institution for financial services and the financial institution for deposit services and loan services as well as the amounts of loans and deposits with reference to our own needs. Chinalco Finance undertakes that the terms for the provision of financial services to us at any time would be no less favorable than those of the same type of financial services provided by Chinalco Finance to Chinalco and other subsidiaries of Chinalco or those of the same type of financial services that may be provided to us by other financial institutions. | The original agreement expired on August 25, 2012, for a term of 1 year. Pursuant to the financial services agreement renewed on August 24, 2012, the term was extended and expired on August 25, 2015. Pursuant to the financial services agreement renewed on April 28, 2015, the term was renewed for a term of 3 years from August 26, 2015, and will expire on August 25, 2018. | (a) 7,565<br><br>(c) 2 (other financial services fees ) | (a) 8,000<br><br>(c) 50 (other financial services fees ) |
| Finance Lease Agreement (Counterparty Chinalco Finance Lease Co., Ltd.) | Chinalco Lease provides finance lease services to the Group. | The finance lease framework agreement was entered into between the Company and Chinalco Lease on August 27, 2015, with a term from August 27, 2015, to December 31, 2016. A new finance lease framework agreement was entered into between the Company and Chinalco Lease on November 13,2015, with a term of 3 years from January 1, 2016, to December 31, 2018. | 1,730 | 10,000 |

| | | | | |
|---|---|---|---|---|
| General Agreement on Mutual Provision of Production Supplies And Ancillary Services (Counterparty: Chinalco) | Supplies and ancillary services | The original agreement was entered into on November 5, 2001, and expired on December 31, 2012. Pursuant to the supplementary agreement entered into in 2012, the term was renewed and expired on December 31, 2015. Pursuant to the supplementary agreement entered into in 2015, the term was renewed for three years from January 1, 2016 to December 2018. | 10,938 | 14,100 |
| Fixed Assets Leases Framework Agreement ( Counterparty: Chinalco) | We have agreed to provide leases to each other regarding buildings, constructions, machinery, apparatus, transportation facilities as well as equipment, appliance or tools and other fixed assets owned by either party in relation to production and operation | Pursuant to the agreement entered into on April 28, 2015, the term is from January 1, 2016 to December 31 2018, for a term of three years. | 33 | 100 |
| Labor Services and EngineeringServices Agreement (Counterparty:Chinalco) | Services provided by the Company to Chinalco: engineering design services, equipment repairs, logistics management services, etc. | The original agreement expired in June 27, 2016. Pursuant to the supplementary agreement entered into in 2016, the term was renewed for three years from January 1, 2016 to December 2018. | 97 | 300 |

All transactions with related parties are conducted at prices and terms mutually agreed by the parties involved, which are determined as follows:

(a) Sales of materials and finished goods comprised sales of alumina, primary aluminum, copper and scrap materials. Transactions entered are covered by general agreements on mutual provision of production supplies and ancillary services. The pricing policy is summarized below:

(1) The price prescribed by the PRC government ("State-prescribed price") is adopted;

(2) If there is neither a state-prescribed price nor a state-guidance price, then the market price (being price charged to and from independent third parties) is adopted; and

(3) If none of the above is available, then the adoption of a contractual price (being reasonable costs incurred in providing the relevant services plus not more than 5% of such costs is adopted).

(b) Utility services, including electricity, gas, heat and water, are supplied at State-prescribed prices.

(c) Engineering, project construction and supervisory services were provided for construction projects of the Group. The state-guidance price or prevailing market price (including the tender price where by way of tender) is adopted for pricing purposes.

(d) The pricing policy for purchases of key and auxiliary materials (including bauxite, limestone, carbon, cement and coal) is the same as that set out in (i) above.

(e) Social services and logistics services provided by Chinalco Group cover public security, fire services, education and training, school and hospital services, cultural and physical education, newspaper and magazines, broadcasting and printing as well as property management, environmental and hygiene, greenery, nurseries and kindergartens, sanatoriums, canteens and offices, public transport and retirement management and other services. Provisions of these services are covered by the Comprehensive Social and Logistics Services Agreement. The pricing policy is the same as that set out in (a) above.

(f) Pursuant to the Land Use Rights Lease Agreements entered into between Chinalco Group and us, operating leases for industrial or commercial land are charged at the market rent rate. The Group also entered into a building rental agreement with Chinalco Group and pays rent based on the market rate for its lease of buildings owned by Chinalco.

(g) The pricing policy for product processing services is the same as that set out in (a) above.

During the years ended December 31, 2014, 2015 and 2016, our significant transactions with other state-owned enterprises (excluding Chinalco and its subsidiaries) constituted a large portion of our sales of goods and purchases of raw materials, electricity, property, plant and equipment and services. In addition, substantially all restricted cash, time deposits, cash and cash equivalents and borrowings as of December 31, 2014, 2015 and 2016 and the relevant interest earned or paid during the year are transacted with banks and other financial institutions which are controlled by the PRC government.

We provide the following additional information on material related party transactions during the periods indicated:

(a) Significant related party transactions

| | For the year ended December 31 | | |
|---|---|---|---|
| | 2014 | 2015 | 2016 |
| | (RMB in thousands) | | |
| Sales of goods and services rendered: | | | |
| Sales of materials and finished goods to: | | | |
| Chinalco and its subsidiaries | 7,056,140 | 10,997,417 | 10,370,836 |
| Associates of Chinalco | 170,338 | 703,628 | 688,308 |
| Joint ventures of Chinalco | 142 | - | - |
| Joint ventures | 48,903 | 79,034 | 648,145 |
| Associates | 2,146,870 | 2,165,445 | 605,449 |
| | 9,422,393 | 13,945,524 | 12,312,738 |
| Provision of utility services to: | | | |
| Chinalco and its subsidiaries | 407,762 | 314,544 | 567,628 |
| Associates of Chinalco | 17,750 | 14,803 | 4,444 |
| Joint Ventures | 113 | - | 3,031 |
| Associates | 1,977 | 553 | 584 |
| | 427,602 | 329,900 | 575,687 |
| Provision of engineering, construction and supervisory services to: | | | |
| Chinalco and its subsidiaries | 988,782 | 46,328 | 96,527 |
| Joint ventures | - | - | 41,423 |
| | 988,782 | 46,328 | 137,950 |
| Provision of products processing services to: | | | |
| Chinalco and its subsidiaries | 3,169 | - | - |
| Rental revenue of land use rights and buildings to: | | | |
| Chinalco and its subsidiaries | 32,887 | 34,281 | 33,231 |
| Associates of Chinalco | - | 249 | - |
| | 32,887 | 34,530 | 33,231 |

| | | | |
|---|---|---|---|
| Purchase of goods and services: | | | |
| Purchases of engineering, construction and supervisory services from: | | | |
| Chinalco and its subsidiaries | 988,782 | 1,737,344 | 1,525,349 |
| | | | |
| Purchases of key and auxiliary materials and finished goods from: | | | |
| Chinalco and its subsidiaries | 2,957,742 | 1,640,051 | 1,600,770 |
| Associates of Chinalco | 386,609 | - | - |
| Joint ventures | 1,268,123 | 1,276,078 | 3,799,116 |
| Associates | 762,003 | 414,539 | 31,413 |
| | 5,347,477 | 3,330,668 | 5.431,299 |
| | | | |
| Provision of social services and logistics services by: | | | |
| Chinalco and its subsidiaries | 312,626 | 324,872 | 307,354 |
| Provision of utilities services by: | | | |
| Chinalco and its subsidiaries | 563,468 | 643,597 | 688,513 |
| Joint Ventures | - | - | 3,386 |
| | 563,468 | 643,597 | 691,899 |
| Provision of products processing services by: | | | |
| Chinalco and its subsidiaries | 76,075 | 62,623 | - |
| Provision of other services by: | | | |
| a joint venture | - | - | 151,552 |
| Rental expenses for buildings and land use rights charged by: | | | |
| Chinalco and its subsidiaries | 561,528 | 590,657 | 509,558 |
| Joint ventures | - | - | 126 |
| | 561,528 | 590,657 | 509,684 |
| Other significant related party transactions: | | | |
| Borrowing from a subsidiary of Chinalco | 1,429,000 | 5,929,000 | 5,145,959 |
| Interest expense on borrowing and discounted notes from a subsidiary of Chinalco | 38,772 | 140,410 | 226,118 |
| Entrusted loan from a subsidiary of Chinalco | 70,000 | - | - |
| Entrusted loan and other borrowings to: | | | |
| Joint ventures | 764,000 | 140,000 | 212,400 |
| | | | |
| Interest income on entrusted loan and other borrowings to: | | | |
| Joint ventures | 60,459 | 14,061 | 31,373 |
| An associate | 88 | - | - |
| Chinalco and its subsidiaries | 2,027 | - | - |
| | 62,574 | 14,061 | 31,373 |
| Interest income from the unpaid disposal proceeds from: | | | |
| Chinalco and its subsidiaries | 542,811 | 326,217 | 246,149 |
| Disposal of assets under a sale and leaseback contract to a subsidiary of Chinalco | 300,000 | 1,150,000 | 1,040,000 |
| Finance lease under a sale and leaseback contract from a subsidiary of Chinalco | 304,239 | 1,150,064 | 1,040,036 |

| | | | |
|---|---|---|---|
| Provision of financial guarantees to: | | | |
| Joint ventures | 345,760 | 340,900 | 24,245 |
| An associate | 23,710 | 17,470 | - |
| | 369,470 | 358,370 | 24,245 |
| Financial guarantees provided by: | | | |
| Subsidiaries of Chinalco | 138,000 | 27,000 | 23,000 |
| Discounted notes receivable to a subsidiary of Chinalco | 118,757 | 122,000 | 40,200 |

(b) Balances with related parties

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Cash and cash equivalents deposited with | | |
| A subsidiary of Chinalco | 7,585,515 | 7,073,289 |
| Trade and notes receivables | | |
| Chinalco and its subsidiaries | 849,417 | 1,093,378 |
| Associates of Chinalco | 23 | 10,200 |
| Joint ventures | 28,268 | 38,055 |
| | 877,708 | 1,141,633 |
| Provision for impairment of receivables | (125,694 ) | (78,262 ) |
| | 752,014 | 1,063,371 |
| Other current assets | | |
| Chinalco and its subsidiaries | 4,830,463 | 5,065,589 |
| Joint ventures | 1,354,427 | 2,092,369 |
| Associates | 84,511 | 73,546 |
| | 6,269,401 | 7,231,504 |
| Provision for impairment of other current assets | (49,013 ) | (48,510 ) |
| | 6,220,388 | 7,182,994 |
| Other non-current assets | | |
| Chinalco and its subsidiaries | 4,252,776 | 27,946 |
| Joint ventures | 409,251 | 112,403 |
| Associates | 111,846 | 111,846 |
| | 4,773,873 | 252,195 |
| Borrowings and finance lease payable | | |
| Subsidiaries of Chinalco | 6,370,365 | 6,051,288 |
| Trade and notes payables | | |
| Chinalco and its subsidiaries | 563,377 | 356,497 |
| Joint ventures | 160,215 | 300 |
| | 723,592 | 356,797 |
| Other payables and accrued liabilities | | |
| Chinalco and its subsidiaries | 1,594,175 | 1,538,167 |
| Associates of Chinalco | 171 | 1,149 |
| Associates | 1,019 | 53,000 |
| Joint ventures | 62,613 | 159,669 |
| | 1,657,978 | 1,751,985 |

Guarantees

We provided guarantees to our related parties to guarantee their loans during the period from January 1, 2016 to February 28, 2017. The outstanding balance of the loans we guaranteed was RMB24.2 million as of February 28, 2017 and the largest amount outstanding of the loans we guaranteed during the period from January 1, 2016 to February 28, 2017 was RMB132.6 million. The interest rates on such loans are from 6.55% to 6.765%.

Our related parties also provided guarantees to us to guarantee our loans during the period from January 1, 2016 to February 28, 2017. The outstanding balance of the loans guaranteed by our related parties was RMB23 million as of February 28, 2017 and the largest amount outstanding of the loans guaranteed by our related parties during the period from January 1, 2016 to February 28, 2017 was RMB15 million. The interest rate on such loan are from 2.3% to 6.53%.

Loans

We provided several entrusted loans to our related parties mainly for the purpose of supplementing working capital during the period from January 1, 2016 to February 28, 2017. The outstanding balance of such entrusted loans was mainly RMB729 million as of February 28, 2017 and the largest amount outstanding of the entrusted loans during the period from January 1, 2016 to February 28, 2017 was RMB200 million. The interest rates on such entrusted loans range from 4.35% to 10%.

Our related party also provided several loans to us mainly for the purpose of supplementing working capital during the period from January 1, 2016 to February 28, 2017. The outstanding balance of such loans was RMB6.05 billion as of February 28, 2017 and the largest amount outstanding of the loans during the period from January 1, 2016 to February 28, 2017 was RMB1 billion. The interest rates on such loans range from 4.13% to 6.7%.

C. INTERESTS OF EXPERTS AND COUNSEL

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. CONSOLIDATED STATEMENTS AND OTHER FINANCIAL INFORMATION

We have appended our consolidated financial statements filed as part of this annual report on Form 20-F.

Legal Proceedings

We are not currently a party to any pending legal proceedings which are expected to have a significant effect on our financial position or results of operations, nor are we aware of any proceedings that are pending or threatened which may have a significant effect on our financial position or results of operations. We may from time to time become a party to various legal or administrative proceedings arising in the ordinary course of our business.

Dividend Policy

Our Board declares dividends, if any, in Renminbi with respect to H Shares on a per share basis and pays such dividends in HK dollars. Any final dividend for a fiscal year is subject to shareholders' approval. The Bank of New York Mellon, as depositary, converts the HK dollar dividend payments and distributes them to holders of ADSs in U.S. dollars, less expenses of conversion. Under the Company Law of the PRC and our Articles of Association, all of our shareholders have equal rights to dividends and distributions. The holders of the H Shares share proportionately on a per share basis in all dividends and other distributions declared by our Board.

We believe that our dividend policy strikes a balance between two important goals providing our shareholders with a competitive return on investment and assuring sufficient reinvestment of profits to enable us to achieve our strategic objectives. The declaration of dividends is subject to the discretion of our Board, which takes into account the following factors:

- our financial results;
- capital requirements;
- contractual restrictions on the payment of dividends by us to our shareholders or by our subsidiaries to us;
- our shareholders' interests;
- the effect on our creditworthiness;
- general business conditions; and
- other factors our Board may deem relevant.

Pursuant to PRC laws and regulations, dividends may only be distributed after allowance has been made for: (1) recovery of losses, if any and (2) allocations to the statutory surplus reserve. The allocations to the statutory surplus reserve is 10% of our net profit determined in accordance with PRC Generally Accepted Accounting Principles, unless the accumulated statutory surplus reserve exceeds 50% of our registered share capital, in which case the surplus reserve is discretional. Our distributable profits for the current fiscal year will be equal to our net profits determined in accordance with IFRSs, less allocations to the statutory surplus reserve. See "Item 10. Additional Information - E. Taxation" for a discussion of the tax consequences of receipt of dividends.

B. SIGNIFICANT CHANGES

Except as disclosed elsewhere in this annual report, we have not experienced any significant changes since the date of our audited consolidated financial statements which is included in this annual report.

ITEM 9. THE OFFER AND LISTING

The Shanghai Stock Exchange is the principal trading market for our A Shares, and the Hong Kong Stock Exchange is the principal trading market for our H Shares. The ADSs have been issued by the Bank of New York Mellon, acting as depositary bank, and are listed on the New York Stock Exchange under the symbol "ACH" with each ADS representing 25 H Shares.

The following table sets forth, for the periods indicated, the reported high and low market prices for our shares on the New York Stock Exchange, the Hong Kong Stock Exchange and the Shanghai Stock Exchange:

| Calendar Period | NYSE | | Hong Kong Stock Exchange | | Shanghai Stock Exchange | |
|---|---|---|---|---|---|---|
| | High | Low | High | Low | High | Low |
| | (US$ per ADS) | | (HK$ per H Share) | | (RMB per A Share) | |
| 2012 | 13.88 | 9.22 | 4.45 | 2.86 | 7.89 | 4.55 |
| 2013 | 13.29 | 7.25 | 4.21 | 2.20 | 5.37 | 3.01 |
| 2014 | 12.6 | 8.25 | 3.85 | 2.54 | 6.66 | 2.97 |
| First Quarter | 9.53 | 8.25 | 2.99 | 2.54 | 3.6 | 3.11 |
| Second Quarter | 10.31 | 8.62 | 3.23 | 2.64 | 3.5 | 2.97 |
| Third Quarter | 12.6 | 8.99 | 3.85 | 2.77 | 4.27 | 3.03 |
| Fourth Quarter | 11.8 | 9.73 | 3.73 | 3.1 | 6.66 | 3.46 |
| 2015 | | | | | | |
| First Quarter | 13.51 | 10.75 | 4.28 | 3.33 | 6.97 | 4.73 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Second Quarter | 17.44 | 12.32 | 5.62 | 3.70 | 10.8 | 6.25 |
| Third Quarter | 12.46 | 7.20 | 3.92 | 2.26 | 9.21 | 4.53 |
| Fourth Quarter | 9.32 | 7.01 | 2.94 | 2.13 | 5.77 | 4.67 |
| 2016 | | | | | | |
| First Quarter | 9.50 | 6.87 | 3.05 | 2.16 | 5.00 | 3.49 |
| Second Quarter | 8.93 | 7.28 | 2.81 | 2.25 | 4.89 | 3.66 |
| Third Quarter | 9.48 | 8.01 | 3.00 | 2.35 | 4.19 | 3.71 |
| Fourth Quarter | 11.78 | 9.16 | 3.74 | 2.82 | 5.05 | 3.75 |
| | | | | | | |
| September | 9.48 | 8.86 | 3.00 | 2.74 | 3.96 | 3.71 |
| October | 9.68 | 9.16 | 3.08 | 2.82 | 4.22 | 3.75 |
| November | 11.78 | 9.23 | 3.74 | 2.87 | 5.03 | 3.89 |
| December | 11.75 | 9.93 | 3.72 | 3.05 | 5.05 | 4.20 |
| 2017 | | | | | | |
| January | 13.12 | 10.23 | 4.11 | 3.14 | 5.14 | 4.22 |
| February | 13.85 | 12.37 | 4.39 | 3.86 | 5.42 | 4.86 |
| March | 13.52 | 11.39 | 4.45 | 3.60 | 5.25 | 4.54 |
| April (through April 4, 2017) | 12.59 | 12.41 | 3.94 | 3.79 | - | - |

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## ITEM 10. ADDITIONAL INFORMATION

### A. SHARE CAPITAL

Not applicable.

### B. MEMORANDUM AND ARTICLES OF ASSOCIATION

A copy of the English translation of our Articles of Association was filed with the SEC as an exhibit to the registration statement on Form F-1 (Registration No. 333-14068) under the Securities Act in connection with a global offering of our H Shares and American depositary shares on December 5, 2001. We filed a copy of the English translation of our Articles of Association as of December 31, 2015 as an exhibit to our annual report on Form 20-F filed on April 15, 2016. From January 1, 2016 to the date of this annual report, we did not make any amendments to our Articles of Association.

The following are summaries of material provisions of our Articles of Association insofar as they relate to the material terms of our shares.

Our objects and purposes

Our Articles of Association as amended from time to time are filed with the Hong Kong Companies Registrar. Our business scope can be found in Article 13 of our Articles of Association, as amended at the shareholders' general meeting held on February 28, 2011.

Directors' power to vote on matters in which he or she has an interest

Under Article 169, a director shall not vote in any resolution of the board of directors for approving any contract, transaction or arrangement in which such director or any of his associates (as defined in the applicable rules governing the listing of securities amended from time to time) is materially interested, and shall not be counted into the quorum of the meeting either. Unless the interested director has disclosed his or her interest to the board of directors in accordance with the Article 169 and the contract, transaction or arrangement has been approved by the board of directors at a meeting in which the interested director is not counted in the quorum and has refrained from voting, a contract, transaction or arrangement in which such director is materially interested is voidable at the instance of our Company except as against a bona fide party thereto acting without notice of the breach of duty by such director.

Borrowing powers

Subject to compliance with applicable laws and regulations of the PRC, we have the power to raise and borrow money which power includes (without limitation) the issuance of debentures and the charging or mortgaging of part or whole of our business or properties and other rights permitted. The Articles of Association do not contain any specific provision in respect of the manner in which borrowing powers may be exercised by the directors nor do they contain any specific provision in respect of the manner in which such powers may be varied, other than (a) provisions which give the directors the power to formulate proposals for the issuance of debentures by us; (b) Article 86(2), which provides that the issuance of bond must be approved by the shareholders in a general meeting by way of a special resolution; and (c) Article 108(4), which provides that the directors have the power to formulate our annual final financial budgets and final accounts which shall be passed by over half of the directors.

Age limit for retirement

There is no provision pertaining to the retirement of directors pursuant to an age limit requirement in our Articles of Association.

Directors' qualifying shares

Under Article 103, the directors are not required to hold any qualifying shares.

Dividend rights

Article 54(1) provides that holders of our ordinary shares have the right to receive dividends and distribution of profits in other forms, in proportion to the number of shares held. Under Article 48, when we convene a general shareholders' meeting, allocate dividends, liquidate or perform other activities that require the verification of equity rights, the Board or the general meeting convener must specify a date as the record date. The shareholders registered in the shareholder roster after closing as at the record date are the Company's shareholders entitled to appropriate rights and interests.

Voting rights

Article 54(2) provides that holders of our ordinary shares have the right to lawfully request, convene, chair, attend in person or appoint a proxy to attend and vote at general meetings of shareholders in respect of the number of shares held.

Rights to share profits

Article 60(7) provides that a plan for profit distribution and a plan for making up for losses formulated by the Board in accordance with Article 108(6) must be approved by way of the shareholders' general meeting.

Rights to share surplus in the event of liquidation

Article 54(6) provides that the holders of ordinary shares have the right to participate in the distribution of our surplus assets in proportion to the number of shares held in the event of the termination or liquidation of us.

Redemption provisions; sinking fund provisions and liability to further capital calls

Article 29 provides that we may repurchase issued shares in accordance with the procedures provided in the Articles of Association and with the approvals from the relevant governing authorities of PRC under the following circumstances: (1) cancellation of shares for the purpose of reducing our capital; (2) amalgamation with another company which owns our shares; (3) granting bonus shares to our employees; (4) shareholders disagreeing with our general meeting's resolution on merger or division and requiring us to acquire the shares in their possession; and (5) other purposes permitted by law and administrative regulations.

No securities issued by us are redeemable, entitled to a sinking fund or subject to liability for further capital calls.

Actions necessary to change the rights of holders of our shares or holders of a class of shares

Under Article 86(5), revision of any rights of class shareholders, e.g., rights to dividends, share profits or surplus in the event of liquidation or voting rights, requires a special resolution of the shareholders' general meeting. Under Article 79, a special resolution must be passed by votes representing more than two-thirds of the voting rights represented by the shareholders (including proxies) present at the meeting.

The rights attached to any class of shares may be varied or abrogated only with the sanction of a special resolution passed at the shareholders' general meeting and by holders of shares of the affected class passed at a separate general meeting of the class convened in accordance with Articles 97 to Article 101 respectively. The circumstances which are deemed to be a variation or abrogation of the class rights are set forth under Article 96. Except for the circumstances under Article 96 (1), (9) and (10), shareholders of the affected class, whether or not otherwise having the right to vote at shareholders' general meetings, have the right to vote at class meetings but Interested Shareholders (as defined under Article 97) are not entitled to vote at class meetings.

Resolutions of a class meeting shall be passed by two-thirds or more of the shares with voting rights held by the class shareholders who, according to Article 97, are entitled to vote at that class meeting. Written notice must be given to all shareholders who are registered as holders of that class in the register of shareholders 45 days (inclusive of date of meeting) before the date of the class meeting. Such notice must contain the matters to be considered at such meeting, the date and the place of meeting. Those shareholders of the class who intend to attend shall send the written reply to us 20 days before the class meeting according to Article.

The proceedings of class meetings shall be conducted as near as possible to those of shareholders' general meetings. The provisions in the Articles of Association relating to the proceedings of shareholders' general meetings shall apply to class meetings.

The special procedures for approval by a class of shareholders do not apply where we issue, upon approval by special resolution of shareholders in general meeting, either separately or concurrently once every 12 months, not more than 20% of each of our existing issued Domestic-Invested Shares and Overseas-Listed Foreign-Invested Shares (as defined under Article 18).

Provisions discriminating against any existing or prospective shareholder as a result of owning a substantial number of shares

Chinalco, as our controlling shareholder, shall not exercise its voting rights in a manner prejudicial to the interest of all or some part of the shareholders when making decisions:

- to relieve a director or supervisor of his duty to act honestly in our best interest;
- to approve the expropriation by a director or supervisor (for his own benefit or for the benefit of another) of our assets, in any manner, including but not limited to an opportunity beneficial to us; or
- to approve the expropriation by a director or supervisor (for his own benefit or for the benefit of another) the individual rights of other shareholders, including but not limited to rights to distributions and voting rights save and except for our restructuring, submitted for approval by the shareholders in general meeting in accordance with the Articles of Association.

Conditions governing the manner in which annual general meetings and extraordinary general meetings of shareholders are convoked

Shareholders' general meetings can be held as annual general meetings or extraordinary general meetings. Annual general meetings are held once a year within six months after the end of the preceding fiscal year.

The Board is required to convene an extraordinary general meeting within two months of the occurrence of any of the following circumstances:

(1) the number of directors falls below the number required by the PRC Company Law or two-thirds of the number required by the Articles of Association;

(2) our unrecovered losses amount to one-third of the total amount of its paid-in-capital;

(3) upon the request of shareholder(s) holding 10 percent or more of our shares for more than ninety consecutive days (the number of shares held shall be the figures as of the date of the written request from the shareholder); and

(4) whenever the Board deems necessary or the supervisory committee proposes to convene the same.

We shall, within 45 days (inclusive of date of meeting) before the date of meeting, send written notices of the shareholders' general meeting and inform all registered shareholders of the matters to be considered at the meeting and the date and venue of the meeting. Those shareholders who intend to attend the meeting shall send the written reply to the Company 20 days before the meeting.

Motions put forward at the general meeting shall be specific and shall relate to the matters to be considered at a shareholders' general meeting. Motions raised at a general meeting shall:

(1) be free of conflicts with the provision of laws, administrative regulations and Articles of Association, and fall within our business scope and the terms of the reference of the shareholders' general meeting;

(2) have definite topics to discuss and specific matters to resolve; and

(3) be submitted in writing or served to the board of directors.

Limitations on the rights to own securities

Under Article 18, the shares issued to domestic investors and denominated in Renminbi are Domestic-Invested Shares whereas the shares issued to overseas investors and denominated in foreign currency are Foreign-Invested Shares. Under Article 17, our Domestic-Invested Shares can be held only by PRC shareholders and our Foreign-Invested Shares, such as H Shares and ADSs, can be held only by foreign shareholders and other shareholders from regions of Hong Kong, Macau and Taiwan.

Provisions having an effect of delaying, deferring or preventing a change in control

Under Article 111, decisions in respect of market development, merger and acquisition, and investment in a new field, where the consideration to be paid or the assets to be acquired exceed 10% of our total assets, the Board is required to engage relevant professional consultants to provide professional opinions, which shall serve as the key reference for the decision of the Board concerning such investment, merger or acquisition.

Under Article 86(3), division, merger, dissolution and liquidation of us and material acquisitions and disposals by us must be approved by a special resolution at a shareholders' general meeting.

There are no provisions under the Articles of Association pertaining to the ownership threshold above which shareholder ownership must be disclosed.

Conditions governing changes in registered capital

Under Article 108(7), any proposal for the increase or decrease of our registered capital must be formulated by the Board Article 86(1) further provides that any increase or reduction in share capital requires adoption of a special resolution at a shareholders' general meeting.

C. MATERIAL CONTRACTS

For the two years immediately preceding the date of this annual report, we have not entered into any additional material contracts other than in the ordinary course of business and other than those described in "Item 4. Information on the Company - History and Development of the Company" and "Item 7. - Major Shareholders and Related Party Transactions - B. Related Party Transactions."

D. EXCHANGE CONTROLS

The existing foreign exchange regulations have significantly reduced government foreign exchange controls for transactions under the current account, including trade and service-related foreign exchange transactions and payment of dividends. We may undertake current account foreign exchange transactions without prior approval from the SAFE by producing commercial documents evidencing such transactions, provided that they are processed through Chinese banks licensed to engage in foreign exchange transactions. The PRC government has stated publicly that it intends to make the Renminbi freely convertible in the future. However, we cannot predict whether the PRC government will continue its existing foreign exchange policy and when the PRC government will allow free conversion of Renminbi to foreign currency.

Foreign exchange transactions under the capital account, including principal payments in respect of foreign currency-denominated obligations, continue to be subject to significant foreign exchange controls and require the approval of the SAFE. These limitations could affect our ability to obtain foreign exchange through debt or equity financing, or to obtain foreign exchange for capital expenditures.

Since 1994, the conversion of Renminbi into HK and U.S. dollars has been based on rates set by the People's Bank of China (the "PBOC"), which are set daily based on the previous day's PRC interbank foreign exchange market rate and current exchange rates on the world financial markets. From 1994 to July 20, 2005, the official exchange rate for the conversion of Renminbi to U.S. dollars was generally stable. On July 21, 2005, the PRC government introduced a managed floating exchange rate system to allow the value of the Renminbi to fluctuate within a regulated band based on market supply and demand and by reference to a basket of currencies. Since then, the PRC government has made, and may in the future make, further adjustments to the exchange rate system. 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 PBOC allows the Renminbi to rise or fall 1% from a mid-point every day, effective April 16, 2012, compared with its previous 0.5% limit. The PBOC further allows the Renminbi to rise or fall 2% from a mid-point every day, effective March 17, 2014. The PBOC announces the closing price of a foreign currency traded against the Renminbi in the inter-bank foreign exchange market after the closing of the market on each working day, and makes it the central parity for trading against the Renminbi on the following working day. Fluctuations in exchange rates may adversely affect the value, translated or converted into U.S. dollars or HK dollars, of our net assets, earnings and any declared dividends. We cannot give any assurance that any future movements in the exchange rate of the Renminbi against the U.S. dollar and other foreign currencies will not adversely affect our results of operations and financial condition.

## E. TAXATION

### PRC Taxation

The following summary of the material PRC and United States federal income tax provisions relating to the ownership and disposition of H Shares or ADSs held by the investor as capital assets is based upon laws and relevant interpretations thereof in effect as of the date of this annual report, all of which are subject to change, and does not constitute legal or tax advice. This summary does not deal with all possible tax consequences relating to an investment in our ordinary shares, such as the tax consequences under state, local and other tax laws.

### Dividends Paid to Individual Investors

For a foreign individual who is not a resident of China, the receipt of dividends from a foreign-invested company in China is normally not subject to individual income tax, unless otherwise stipulated by tax law or regulations. In 2011, the PRC State Administration of Taxation (the "SAT") issued the "Circular on the Issues Concerning the Collection and Administration of Individual Income Tax Following the Repeal of Circular 45 (No. 348)", under which dividends paid by a non-foreign-invested and PRC incorporated company listed in Hong Kong will generally be subject to a withholding tax of 20% and will be adjusted pursuant to the arrangement for the avoidance of double taxation signed between the PRC and the country where the foreign individual is a resident.

Dividends Paid to Non-PRC Enterprises

According to the Enterprise Income Tax Law and its implementation rules, which became effective on January 1, 2008, dividends derived from the revenues accumulated from January 1, 2008 and are paid by Chinese companies to non-resident enterprises, which are established under the laws of non-PRC jurisdictions and have no establishment or residence in China or whose dividends from China do not relate to their establishment or residence in China, are ordinarily subject to a Chinese withholding tax levied at a flat rate of 10% unless exempted or reduced pursuant to an applicable double-taxation treaty. Dividends paid by PRC companies to resident enterprises, including enterprises established under the laws of non-PRC jurisdictions but whose "de facto management body" is located in the PRC, are not subject to any PRC tax, unless the dividends are derived from the publicly traded shares which have been held continuously by the resident enterprises for less than twelve months. However, the withholding tax rate could be reduced under an applicable double-taxation treaty.

Tax Treaties

China currently has such treaties with more than one hundred countries and regions, including the following countries:

- the United States;
- Australia;
- Canada;
- France;
- Germany;
- Japan;
- Malaysia;
- Singapore;
- the United Kingdom; and
- the Netherlands.

Under most treaties, the rate of withholding tax imposed by China's taxation authorities remains 10%. The double taxation treaty between China and the United States provides that China may tax dividends paid by us to an eligible U.S. holder up to 10% of the gross amount received by such person. Under the treaty, an eligible U.S. holder is a person who, by reason of domicile, residence, place of head office, place of incorporation or any other criterion of similar nature is subject to taxation in the United States, as applicable under the treaty's "treaty shopping provisions."

Capital Gains

According to the Enterprise Income Tax Law and its implementation rules, which became effective on January 1, 2008, capital gains realized by foreign enterprises, which are established under the laws of non-PRC jurisdictions and have no establishment or residence in China or whose capital gains from China do not relate to their establishment or residence in China, are ordinarily subject to capital gains tax at the rate of 10%. The capital gains realized by resident enterprises, including enterprises established under the laws of non-PRC jurisdictions but whose "de facto management body" is located in the PRC, upon the sales of overseas-listed shares are subject to the PRC enterprise income tax.

With respect to individual holders of H Shares, the Provisions for Implementation of Individual Income Tax Law of China, as amended, stipulated that income tax on gains realized on the sale of equity shares shall be regulated in separate rules to be drafted by the MOF. On March 30, 1998, the MOF and the SAT jointly issued the "Circular of Taxation Regarding the Continued Exemption of Individual Income Taxes Levied on Income Obtained from the Transfer of Shares", which provided that income derived from the transfer of shares issued by listed companies shall not be taxed as income for the purposes of levying individual income taxes after July 1, 1997.

On October 31, 2014, the SAT issued "Circular on Tax Policies Relating to the Pilot Program of Shanghai-Hong Kong Stock Connect", which provides that any capital gain from transferring stocks listed on the SEHK by a PRC mainland investors will not be subject to tax during the period from November 17, 2014 to November 16, 2017. For mainland enterprises, such capital gains will be included in its income and subject to income tax.

Additional China Tax Considerations

Under the Provisional Regulations of the PRC Concerning the Stamp Duty, a stamp duty is not imposed by China on the transfer of shares, such as the H Shares or ADSs, of Chinese publicly traded companies that take place outside of China. In case foreign investors transfer A Shares, the stamp duty will be imposed on the transferor

United States Federal Income Taxation

Each potential investor is strongly urged to consult its own tax advisor to determine the particular U.S. federal, state, local, treaty and foreign tax consequences of acquiring, owning or disposing of the H Shares or ADSs.

The following summary describes the principal U.S. federal income tax consequences of purchasing, owning and disposing of the H Shares or ADSs. This summary only applies to U.S. holders, as defined below, who hold the H Shares or ADSs as capital assets within the meaning of Section 1221 of
the Internal Revenue Code of 1986 as amended (the "Code"). This discussion does not address all of the tax consequences relating to the purchase, ownership and disposition of the H Shares or ADSs, and does not take into account U.S. holders that may be subject to special rules, including:

- Financial institutions;
- insurance companies;
- tax-exempt organizations;
- real estate investment trusts, regulated investment companies, grantor trusts;
- persons that have a functional currency other than the U.S. dollar;
- persons that will own H Shares or ADSs through partnerships or other pass-through entities;
- persons that own 10% or more, by vote, of our equity for U.S. federal income tax purposes;

- dealers or traders in securities or currencies;
- certain former citizens or long-term residents of the United States;
- persons that will hold the H Shares or ADSs as a position in a "straddle" or as part of a "hedging" or "conversion" or other risk reduction transaction for U.S. federal income tax purposes;
- persons who receive the H Shares or ADSs as compensation for services;
- "dual resident" corporations;
- persons that generally mark their securities to market for U.S. federal income tax purposes; or
- persons who are residents of the People's Republic of China or who are subject to Hong Kong profits tax.

Moreover, this description does not address U.S. federal estate, gift or alternative minimum taxes, the U.S. federal unearned income Medicare contribution tax, or any foreign state or local tax consequences of the acquisition, ownership and disposition of the H Shares or ADSs. Each U.S. holder should consult its tax advisor with respect to the U.S. federal, state, local and foreign tax consequences of acquiring, owning and disposing of H Shares or ADSs.

This discussion is based on the Code, its legislative history, final, temporary and proposed U.S. Treasury regulations promulgated thereunder, published rulings and court decisions as in effect on the date hereof, all of which are subject to change, or change in interpretation, possibly with retroactive effect. In addition, this discussion is based in part upon representations of the depositary and the assumption that each obligation in the deposit agreement and any related agreements will be performed according to its terms.

You are a "U.S. holder" if you are a beneficial owner of H Shares or ADSs and, for U.S. federal income tax purposes, are:

- an individual citizen or resident of the United States;
- a corporation created or organized under the laws of the United States or any political subdivision thereof;
- an estate the income of which is subject to U.S. federal income tax without regard to its source; or
- a trust: (i) subject to the primary supervision of a U.S. court and one or more U.S. persons (within the meaning of the Code) have the authority to control all substantial decisions of the trust; or (ii) that has validly elected to be treated as a U.S. person under applicable U.S. Treasury Regulations.

If a partnership (including any entity treated as a partnership for U.S. federal tax purposes) holds H Shares or ADSs, the tax treatment of the partnership and a partner in such partnership will generally depend upon the status of the partner and the activities of the partnership. If an investor is a partner in a partnership that holds H Shares or ADSs, such investor should consult its tax advisor.

In general, if you hold ADRs evidencing H Shares, you will be treated as the owner of the H Shares represented by the ADSs. Exchanges of H Shares for ADRs, and ADRs for H Shares, generally will not be subject to United States federal income tax.

INVESTORS SHOULD CONSULT THEIR TAX ADVISORS AS TO THE PARTICULAR TAX CONSIDERATIONS APPLICABLE TO THEM RELATING TO THE PURCHASE, OWNERSHIP AND DISPOSITION OF THE H SHARES OR ADSs, INCLUDING THE APPLICABILITY OF U.S. FEDERAL, STATE AND LOCAL TAX LAWS OR NON-U.S. TAX LAWS, ANY CHANGES IN APPLICABLE TAX LAWS AND ANY PENDING OR PROPOSED LEGISLATION OR REGULATIONS.

Distributions on the H Shares or ADSs

Subject to the discussions below under "- Passive Foreign Investment Company", the gross amount of any distribution (without reduction for any PRC tax withheld) we make on the H Shares or ADSs will be includible in income as dividend income when the distribution is actually or constructively received by you. Because we do not calculate earnings and profits in accordance with U.S. tax principles, all distributions by us to U.S. holders will generally be treated as dividends. Any dividend will not be eligible for the dividends-received deduction allowed to certain U.S. corporations in respect of dividends received from U.S. corporations. The amount of any distribution of property other than cash will be the fair market value of such property on the date of such distribution.

The U.S. dollar amount of dividends received by an individual, trust or estate will be subject to taxation at a maximum rate of 20% if the dividends are "qualified dividends." Dividends paid on H Shares or ADSs will be treated as qualified dividends if (a) certain holding period requirements are satisfied, (b) either (i) we are eligible for the benefits of a comprehensive income tax treaty with the United States that the Internal Revenue Service, or IRS, has approved for the purposes of the qualified dividend rules, or (ii) the dividends are with respect to ADSs readily tradable on a U.S. securities market, and (c) provided that we were not, in the year prior to the year in which the dividend was paid, and are not, in the year in which the dividend is paid, a passive foreign investment company, or PFIC. The Agreement Between the Government of the United States of America and the Government of the People's Republic of China for the Avoidance of Double Taxation and the Prevention of Tax Evasion with Respect to Taxes on Income (the "Treaty") has been approved for the purposes of the qualified dividend rules. We should be considered a qualified foreign corporation with respect to the ADSs because our ADSs are listed on the New York Stock Exchange. Finally, based on our audited financial statements and relevant market data, we believe that we did not satisfy the definition for PFIC status for U.S. federal income tax purposes with respect to our 2016 taxable year. In addition, based on our audited financial statements and our current expectations regarding the value and nature of our assets, the sources and nature of our income, and relevant market data, we do not anticipate becoming a PFIC for our 2017 taxable year or any future year. However, our status in the current year and future years will depend on our income and assets (which for this purpose depends in part on the market value of the H Shares or ADSs) in those years. See the discussion below under "- Passive Foreign Investment Company." Relevant U.S. holders should consult their tax advisors regarding whether such dividends will qualify for the reduced rates provided by the "qualified dividend" rules.

If we make a distribution paid in HK dollars, you will be considered to receive the U.S. dollar value of the distribution determined at the spot HK dollar/U.S. dollar rate on the date such distribution is received actually or constructively by you, regardless of whether you convert the distribution into U.S. dollars. Any gain or loss resulting from currency exchange fluctuations during the period from the date the dividend payment is includible in your income to the date you convert the distribution into U.S. dollars will be treated as ordinary income or loss from U.S. sources. If dividends received in HK dollars are converted into U.S. dollars on the day they are received, the U.S. holder generally will not be required to recognize foreign currency gain or loss in respect of the dividend income.

Dividends paid by us generally will constitute income from sources outside the United States for U.S. foreign tax credit limitation purposes and will be categorized as "passive income" or, in the case of certain U.S. holders, as "general category income" for U.S. foreign tax credit purposes. We may be required to withhold PRC income tax on dividends paid to U.S. holders on the H Shares or ADSs. Subject to various limitations, any PRC tax withheld from distributions in accordance with the Treaty will be deductible or creditable against your U.S. federal income tax liability.

You may not be able to claim a foreign tax credit (and instead may qualify to claim a deduction) for non-U.S. taxes imposed on dividends paid on the H Shares or ADSs if you (i) have held the H Shares or ADSs for less than a specified minimum period during which you are not protected from risk of loss with respect to such shares, or (ii) are obligated to make payments related to the dividends (for example, pursuant to a short sale). The rules relating to the U.S. foreign tax credit are complex and U.S. holders may be subject to various limitations on the amount of foreign tax credits that are available. In addition, if the dividends are taxed as qualified dividend income (as discussed above), the amount of the dividend taken into account for purposes of calculating a U.S. holder's foreign tax credit limitation will generally be limited to the gross amount of the taxable dividend, multiplied by the reduced tax rate applicable to qualified dividend income and divided by the highest tax rate normally applicable to dividends. U.S. holders should consult their own tax advisors regarding the effect of these rules in their particular circumstance.

Sale, Exchange or Other Disposition

Subject to the discussions below under "- Passive Foreign Investment Company", upon a sale, exchange or other disposition of the H Shares or ADSs, you will generally recognize capital gain or loss for U.S. federal income tax purposes in an amount equal to the difference between the U.S. dollar value of the amount realized and your tax basis, determined in U.S. dollars, in such H Shares or ADSs. Generally, gain or loss recognized upon the sale or other disposition of H Shares or ADSs will be capital gain or loss, will be long-term capital gain or loss if the U.S. holder's holding period for such H Shares or ADSs exceeds one year, and will be income or loss from sources within the United States for foreign tax credit limitation purposes. For non-corporate U.S. holders, the U.S. income tax rate applicable to net long-term capital gain currently will not exceed 20.0%. The deductibility of capital losses is subject to significant limitations.

With respect to the sale or exchange of H Shares or ADSs, the amount realized generally will be the U.S. dollar value of the payment received determined on (i) the date of receipt of payment in the case of a cash basis U.S. holder and (ii) the date of disposition in the case of an accrual basis U.S. holder. If H Shares or ADSs are traded on an "established securities market", a cash basis taxpayer or, if it so elects, an accrual basis taxpayer, will determine the U.S. dollar value of the amount realized by translating the amount received at the spot rate of exchange on the settlement date of the sale. A U.S. holder will have a tax basis in the foreign currency received equal to the U.S. dollar amount realized. Any currency exchange gain or loss realized on a subsequent conversion of the foreign currency into U.S. dollars for a different amount generally will be treated as ordinary income or loss from sources within the United States. However, if such foreign currency is converted into U.S. dollars on the date received by the U.S. holder, a cash basis or electing accrual basis U.S. holder should not recognize any gain or loss on such conversion.

The rules relating to the U.S. foreign tax credit are complex. U.S. holders should consult their own tax advisors regarding the effect of these rules in their particular circumstances. Any gain or loss will generally be U.S. source gain or loss for foreign tax credit limitation purposes and, as a result of the U.S. foreign tax credit limitation, foreign taxes, if any, imposed upon capital gains in respect of H Shares or ADSs may not be currently creditable. Under the Treaty, however, if any PRC tax were to be imposed on any gain from the disposition of H Shares or ADSs, the gain could be treated as PRC source income. U.S. holders are urged to consult their tax advisors regarding the tax consequences if a foreign withholding tax is imposed on a disposition of H Shares or ADSs, including the availability of the foreign tax credit under their particular circumstances.

Passive Foreign Investment Company

A non-U.S. corporation is a PFIC for any taxable year in which, after applying relevant look-through rules with respect to the income and assets of subsidiaries:

- 75% or more of its gross income consists of passive income, such as dividends, interest, rents, royalties, and gains from the sale of assets that give rise to such income; or
- 50% or more of the average quarterly value of its gross assets consists of assets that produce, or are held for the production of, passive income.

Passive income does not include rents and royalties derived from the active conduct of a trade or business. If the stock of a non-U.S. corporation is publicly traded for the taxable year, the asset test is applied using the fair market value of the assets for purposes of measuring such corporation's assets. If we own at least 25% (by value) of the stock of another corporation, we will be treated, for purposes of the PFIC tests, as owning our proportionate share of the other corporation's assets and receiving our proportionate share of the other corporation's income for purposes of the PFIC income and asset tests.

Based on the composition of our assets and income and the current expectations regarding the price of the H Shares and ADSs, we believe that we were not a PFIC for U.S. federal income tax purposes with respect to our 2016 taxable year and we do not intend or anticipate becoming a PFIC for any future taxable year. However, the determination of PFIC status is a factual determination that must be made annually at the close of each taxable year and, therefore, there can be no certainty as to our status in this regard until the close of the current or any future taxable year. Changes in the nature of our income or assets or a decrease in the trading price of the H Shares or ADSs may cause us to be considered a PFIC in the current or any subsequent year. If we were a PFIC in any year during a U.S. holder's holding period for the H Shares or ADSs, we would ordinarily continue to be treated as a PFIC for each subsequent year during which the U.S. holder owned the H Shares or ADSs.

If we were a PFIC in any taxable year that you held the H Shares or ADSs, you generally would be subject to special rules with respect to "excess distributions" made by us on the H Shares or ADSs and with respect to gain from your disposition of the H Shares or ADSs. An "excess distribution" generally is defined as the excess of the distributions you receive with respect to the H Shares or ADSs in any taxable year over 125% of the average annual distributions you have received from us during the shorter of the three preceding years, or your holding period for the H Shares or ADSs. Generally, you would be required to allocate any excess distribution or gain from the disposition of the H Shares or ADSs ratably over your holding period for the H Shares or ADSs. The portion of the excess distribution or gain allocated to a prior taxable year, other than a year prior to the first year in which we became a PFIC, would be taxed at the highest U.S. federal income tax rate in effect for such taxable year, and you would be subject to an interest charge on the resulting tax liability, determined as if the tax liability had been due with respect to such particular taxable years. The portion of the excess distribution or gain that is not allocated to prior taxable years, together with the portion allocated to the years prior to the first year in which we became a PFIC, would be included in your gross income for the taxable year of the excess distribution or disposition and taxed as ordinary income.

These adverse tax consequences may be mitigated if the U.S. holder is eligible to and does elect to annually mark-to-market the H Shares or ADSs. If a U.S. holder makes a mark-to-market election, such holder will generally include as ordinary income the excess, if any, of the fair market value of the H Shares or ADSs at the end of each taxable year over its adjusted basis, and will be permitted an ordinary loss in respect of the excess, if any, of the adjusted basis of the H Shares or ADSs over their fair market value at the end of the taxable year (but only to the extent of the net amount of income previously included in income as a result of the mark-to-market election). Any gain recognized on the sale or other disposition of the H Shares or ADSs will be treated as ordinary income. The mark-to-market election is available only for "marketable stock," which is stock that is traded in other than de minimis quantities on at least 15 days during each calendar quarter on a qualified exchange or other market, as defined in the applicable Treasury regulations. The H Shares or ADSs may qualify as "marketable stock" because the ADSs are listed on the New York Stock Exchange.

A U.S. holder's adjusted tax basis in the H Shares or ADSs will be increased by the amount of any income inclusion and decreased by the amount of any deductions under the mark-to-market rules. If a U.S. holder makes a mark-to-market election it will be effective for the taxable year for which the election is made and all subsequent taxable years unless the H Shares or ADSs are no longer regularly traded on a qualified exchange or the IRS consents to the revocation of the election. U.S. holders are urged to consult their tax advisors about the availability of the mark-to-market election, and whether making the election would be advisable in their particular circumstances. However, the stock of any of our subsidiaries that were PFICs would not be eligible for the mark-to-market election.

Alternatively, a timely election to treat us as a qualified electing fund could be made to avoid the foregoing rules with respect to excess distributions and dispositions. You should be aware, however, that if we become a PFIC, we do not intend to satisfy the recordkeeping requirements that would permit you to make a qualified electing fund election.

If we were regarded as a PFIC, a U.S. holder of H Shares or ADSs generally would be required to file an information return on IRS Form 8621 for any year in which the holder received a direct or indirect distribution with respect to the H Shares or ADSs, recognized gain on a direct or indirect disposition of the H Shares or ADSs, or made an election with respect to the H Shares or ADSs, reporting distributions received and gains realized with respect to the H Shares or ADSs. In addition, pursuant to recently enacted legislation, if we were regarded as a PFIC, a U.S. holder would be required to file an annual information return (also on IRS Form 8621) relating to the holder's ownership of the shares or ADSs. This requirement would be in addition to other reporting requirements applicable to ownership in a PFIC. U.S. holders should consult their tax advisors concerning the U.S. federal income tax consequences of holding the H Shares or ADSs if we were considered to be a PFIC.

Backup Withholding and Information Reporting

In general, information reporting requirements will apply to dividends in respect of the H Shares or ADSs or the proceeds of the sale, exchange, or redemption of the H Shares or ADSs paid within the United States, and in some cases, outside of the United States, other than to various exempt recipients, including corporations. In addition, you may, under some circumstances, be subject to "backup withholding" with respect to dividends paid on the H Shares or ADSs or the proceeds of any sale, exchange or transfer of the H Shares or ADSs, unless you:

- are a corporation or fall within various other exempt categories, and, when required, demonstrate this fact; or
- provide a correct taxpayer identification number on a properly completed IRS Form W-9 or a substitute form, certify that you are exempt from backup withholding and otherwise comply with applicable requirements of the backup withholding rules; or
- provide a properly completed IRS Form W-8BEN, certifying your status as a non-US holder.

Any amount withheld under the backup withholding rules generally will be creditable against your U.S. federal income tax liability or may be refunded to the extent they exceed such liability provided that you furnish the required information to the IRS in a timely manner.

Certain U.S. Holders may be required to report information with respect to such holder's interest in "specified foreign financial assets" (as defined in Section 6038D of the Code), including stock of a non-U.S. corporation that is not held in an account maintained by certain financial institutions, if the aggregate value of all such assets exceeds certain dollar thresholds. Persons who are required to report specified foreign financial assets and fail to do so may be subject to substantial penalties. U.S. Holders are urged to consult their own tax advisors regarding the foreign financial asset reporting obligations and their possible application to the holding of H Shares or ADSs.

Hong Kong Taxation

The following discussion summarizes the material Hong Kong tax provisions relating to the ownership of H Shares or ADSs held by you.

Dividends

Under current Hong Kong Inland Revenue Department practice, no Hong Kong tax is payable by the recipient in respect of dividends paid by us.

Taxation of Capital Gains

Hong Kong profits tax is currently charged at a flat rate of 16.5% for corporations and 15% for individuals.

No Hong Kong tax is imposed on capital gains arising from the sale of property (such as H Shares) acquired and held as a capital investment. However, if a person carries on a business in Hong Kong that includes trading and dealing in securities, and derives trading gains from such activities or from other Hong Kong sources, Hong Kong profits tax will be payable. Gains from sales of H Shares effected on the Hong Kong Stock Exchange are considered to be from a Hong Kong source for this purpose. The source of gains from off exchange transactions is less clear and, generally, will depend on whether the purchase and sale contracts were negotiated and, in substance, concluded in Hong Kong. In addition, exemption from profits tax is available for certain classes of taxpayers, notably non-Hong Kong residents who do not otherwise carry on business in Hong Kong, subject to compliance with various other requirements.

The Hong Kong tax position with respect to gains from the disposal of ADSs is similar. However, no Hong Kong tax will apply on trading gains arising from the sale of ADSs where the purchase and sale were effected on the NYSE.

Hong Kong Stamp Duty

Hong Kong stamp duty is payable by each seller and purchaser for every sold note and every bought note created for every sale and purchase of the H Shares. Stamp duty is charged at the total rate of 0.2% of the value of the H Shares transferred (the buyer and seller each paying half of such stamp duty). In addition, a fixed duty of HK$5 is currently payable on an instrument of transfer of H Shares. If one of the parties to a sale is a non-resident of Hong Kong and does not pay the required stamp duty, the unpaid stamp duty will be assessed on the instrument of transfer (if any), and the transferee will be liable for the full payment of such amount.

If the withdrawal of H Shares when ADSs are surrendered or the issuance of ADSs when H Shares are deposited results in a change of beneficial ownership in the H Shares under Hong Kong law, Hong Kong stamp duty at the rate described above for sale and purchase transaction will apply. The issuance of ADSs for deposited H Shares issued directly to the depositary or for the account of the depositary should not lead to a Hong Kong stamp duty liability. Holders of the ADSs are not liable for the Hong Kong stamp duty on transfers of ADSs outside of Hong Kong so long as the transfers do not result in a change of beneficial interest in the H Shares under Hong Kong law.

F. DIVIDENDS AND PAYING AGENTS

Not applicable

G. STATEMENT BY EXPERTS

Not applicable

H. DOCUMENTS ON DISPLAY

We are subject to the periodic reporting and other informational requirements of the Exchange Act. Under the Exchange Act, we are required to file reports and other information with the SEC. Specifically, we are required to file an annual report under Form 20-F no later than four months after the close of each of our fiscal years, which is December 31, for fiscal years ended after December 15, 2011. Copies of reports and other information, when so filed, may be inspected without charge and may be obtained at prescribed rates at the SEC's public reference room located at 100 F Street, NE, Washington, D.C. 20549. The public may obtain information regarding the Washington, D.C. Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a website at www.sec.gov that contains reports and other information regarding registrants that make electronic filings with the SEC using its EDGAR filing system. As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and officers, directors and principal shareholders of ours are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act.

I. SUBSIDIARY INFORMATION

Not applicable

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK SHARE CAPITAL

We are exposed to various types of market risks, including credit risk relating to financial assets and changes in foreign exchange rates, interest rates and the prices of alumina and primary aluminum, in the normal course of business.

We borrow short-term, medium-term and long-term funds, including variable rate debts, principally denominated in Renminbi. We hedge a limited amount of our sales through the trade of futures contracts on the SHFE and LME. Our hedging activities are subject to policies approved by our senior management. Substantially all of the financial instruments we hold are for purposes other than trading.

The following discussion, which contains "forward-looking statements" that involve risks and uncertainties, summarize our market-sensitive financial instruments. Such discussions address markets risk only and do not present other risks, which we face in the normal course of business.

Credit Risk

Credit risk arises from balances with banks and financial institutions, short-term investments, trade and notes receivables, other current and non-current receivables as well as credit exposures of customers, including outstanding receivables and committed transactions. We also provide financial guarantees to certain subsidiaries, a joint venture and a third party entity. The carrying amounts of these receivables and amounts of financial guarantees represent our maximum exposure to credit risk in relation to our financial assets and guarantees.

We maintain a significant majority of our bank balances and cash and short-term investments in several major state-owned banks in the PRC. The directors are of the opinion that these assets are not exposed to significant credit risk.

With regard to receivables, the marketing department assesses the credit quality of the customers and related parties, taking into account their financial positions, past experience and other factors. We perform periodic credit evaluations of our customers and believe that adequate provisions for impairment of receivables have been made in the financial statements. Management does not expect any further losses from non-performance by these counterparties.

For the year ended December 31, 2016, revenues of approximately RMB30,940 million are derived from entities directly or indirectly owned or controlled by the PRC government including Chinalco. There were no other individual customers from whom we have derived revenue of more than 10% of our revenue during the year ended December 31, 2014, 2015 and 2016. Thus, the directors are of the opinion that we were not exposed to any significant concentration of credit risk as at December 31, 2014, 2015 and 2016.

Foreign Exchange Rate Risk

We conduct our business primarily in Renminbi, which is our functional and reporting currency. We convert a portion of our Renminbi revenues into other currencies to meet foreign currency obligations and to pay for imported equipment and materials.

Many foreign currency exchange transactions involving Renminbi, including foreign exchange transactions under our capital account, are subject to foreign exchange controls and require the approval of the SAFE. Actions taken by the PRC government could cause future exchange rates to vary significantly from current or historical exchange rates. On July 21, 2005, the People's Bank of China announced a reform of its exchange rate system. Under the reform, the RMB is no longer effectively linked to the U.S. dollar but instead is allowed to fluctuate within a narrow and managed band against a basket of foreign currencies, according to market demand and supply conditions. 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 allows the Renminbi to rise or fall 1% from a mid-point every day, effective on April 16, 2012, compared with its previous 0.5% limit. The People's Bank of China 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 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.

Our bank balances and cash on hand as of December 31, 2016 amounted to RMB25,895.5 million, including Renminbi balances and foreign currency deposits of U.S. dollar, HK dollar, Euro, Australian dollar and Indonesian Rupiah, which translated into RMB5,343.6 million, RMB6.3 million, RMB0.02 million, RMB2.6 million and RMB0.1 million, respectively. Most of our sales are domestic and as such we have a limited amount of foreign currency denominated trade and notes receivable. As of December 31, 2016, we had foreign currency denominated loans with principal amount of RMB23 million in Japanese Yen and RMB1,572 million in U.S. dollars. In addition, as of December 31, 2016, our trade and notes receivables denominated in U.S. dollars amounted to RMB458 million and in Euro amounted to RMB5 million.

As at December 31, 2016, if RMB had strengthened/weakened by 5% against USD with all other variables held constant, the profit for the year would have been approximately RMB269 million lower/higher, mainly as a result of foreign exchange gains and losses arising from translation of USD-denominated borrowings and receivables. Profit was more sensitive to the fluctuation in the RMB/USD exchange rates in 2016 than in 2015 and 2014, mainly due to the increase in the USD denominated cash and receivables.

As the assets and liabilities denominated in other foreign currencies other than USD were relative to the total assets and liabilities of the Group, the directors of the Company are of the opinion that the Group was not exposed to any significant foreign currency risk arising from these foreign currency denominated assets and liabilities as at December 31, 2015 and 2016.

Interest Rate Risk

As of December 31, 2016, as our Group had no significant interest-bearing assets except for bank deposits, entrusted loans, receivables arising from disposal of subsidiaries, business and assets and a prepayment paid to a supplier, our Group's income and operating cash flows are substantially independent of changes in market interest rates.

Most of the bank deposits are maintained in savings and time deposit accounts in the PRC. The interest rates are regulated by the People's Bank of China and the Group Treasury closely monitors the fluctuation on such rates periodically. The interest rates of entrusted loans and a deposit paid to a supplier are fixed, the interest rate of the receivables from disposal of businesses to Chinalco is at the rate of one-year bank loan determined by the People's Bank of China at the payment date and the interest rate of the receivables from disposal of an entity to a subsidiary of Chinalco is LIBOR plus 0.9%. As the interest rates applied to the deposits and receivables from disposal of subsidiaries, business and assets were relatively low and the interest rates applied to the entrusted loans and a prepayment paid to a supplier were fixed, our directors are of the opinion that our Group was not exposed to any significant interest rate risk for its financial assets held as of December 31, 2015 and 2016.

The interest rate risk for our Group's financial liabilities primarily arises from interest-bearing loans. Loans borrowed at floating interest rates expose us to cash flow interest rate risk. We enter into debt obligations to support general corporate purposes including capital expenditures and working capital needs. Our Group treasury closely monitors market interest rates and maintains a balance between variable rate and fixed rate borrowings in order to reduce the exposures to the interest rate risk described above.

As at December 31, 2016, if interest rates had been 100 basis higher/lower for bank and other loans borrowed at floating interest rates with all other variables held constant, net profit for the year would have been RMB479 million lower/higher, respectively, mainly as a result of the higher/lower interest expense on floating rate borrowings.

Commodity Price Risk

We are exposed to fluctuations in the prices of alumina, primary aluminum and other products. We import a portion of our alumina supply from suppliers outside China. Such purchases are made at market prices. In addition, all our sales of alumina, primary aluminum and other products are made at market prices. Therefore, fluctuations in the prices of alumina and primary aluminum have a significant effect on our operating performances.

We use mainly futures contracts and option contracts traded on the Shanghai Futures Exchange and London Metal Exchange to hedge against fluctuations in primary aluminum prices. We use the futures contract for hedging other than speculation. As at December 31, 2016, the fair values of the outstanding futures contracts amounting to RMB55 million and RMB3 million were recognized in financial assets and financial liabilities at fair value through profit or loss, respectively. As at December 31, 2016, the fair value of the outstanding options contracts amounting to RMB0.1 million was recognized in financial liabilities at fair value through profit or loss.

The fair value of futures contracts are based on quoted market prices. As of December 31, 2015 and 2016, our position in futures contracts was as follows:

| | 2015 | 2016 |
|---|---|---|
| Primary aluminum | Decrease/increase RMB43.776 million | Decrease/increase RMB6.761 million |
| Copper | Decrease/increase RMB1.736 million | Decrease/increase RMB4.085 million |
| Zinc | Increase/decrease RMB0.144 million | Decrease/increase RMB0.752 million |
| Lead | N/A | Increase/decrease RMB0.066 million |
| Coal | N/A | Decrease/increase RMB1.103 million |

Liquidity risk

We monitor rolling forecasts of our liquidity requirements to ensure we have sufficient cash to meet operational needs while maintaining sufficient headroom on our undrawn committed borrowing facilities at all times so that we do not breach borrowing limits or covenants (where applicable) on any of our borrowing facilities. Such forecast takes into consideration our debt financing plans, covenant compliance, compliance with internal balance sheet ratio targets and, if applicable, external regulatory or legal requirements. Our management also monitors rolling forecasts of our liquidity reserve on the basis of expected cash flows.

As of December 31, 2016, we had total banking facilities of approximately RMB134,235 million, of which RMB61,980 million had been utilized, and unutilized banking facilities amounted to RMB72,255 million as of December 31, 2016, among which, banking facilities of approximately RMB67,510 million will be subject to renewal during the next 12 months from January 1, 2017. Our directors are confident that all banking facilities could be renewed upon their expiration based on our past experience with banks and our good credit standing. In addition, as of December 31, 2016, we had credit facilities through our futures agent at LME amounting to US$120 million, of which approximately US$50 million has been utilized. The futures agent has the right to adjust the related credit facilities. The following table sets forth the maturity profile of our financial liabilities as of December 31, 2016:

| | Within 1 year | 1 to 2 years | 2 to 5 years | Over 5 years | Total |
|---|---|---|---|---|---|
| | (RMB in millions) | | | | |
| Finance lease payable, including current portion | 2,253.7 | 2,068.3 | 2,895.3 | - | 7,217.3 |
| Long-term bank and other loans, including current portion | 4,725.2 | 8,000.7 | 10,275.9 | 8,698.5 | 31,700.3 |
| Long-term bonds | 2,000.0 | - | - | - | 2,000.0 |
| Medium-term notes and bonds, including current portion | 6,400.0 | 12,500.0 | 3,215.0 | - | 22,115.0 |
| Short-term bonds | 7,900.0 | - | - | - | 7,900.0 |
| Gold leasing arrangement | 3,000.0 | - | - | - | 3,000.0 |
| Short-term bank and other loans | 32,154.8 | - | - | - | 32,154.8 |
| Interest payables for borrowings | 6,045.3 | 1,701.5 | 2,436.1 | 470.5 | 10,653.4 |
| Financial liabilities at fair value through profit or loss | 3.6 | - | - | - | 3.6 |
| Financial liabilities included in other payables and accrued liabilities, excluding accrued interest | 8,495.7 | - | - | - | 8,495.7 |
| Financial liabilities included in other non-current liabilities | - | 218.2 | 330.0 | 405.3 | 953.5 |
| Trade and notes payables | 11,285.3 | - | - | - | 11,285.3 |
| Total | 84,263.6 | 24,488.7 | 19,152.3 | 9,574.3 | 137,478.9 |

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

A. DEBT SECURITIES

Not applicable.

B. WARRANTS AND RIGHTS

Not applicable.

C. OTHER SECURITIES

Not applicable.

D. AMERICAN DEPOSITARY SHARES

The following table summarizes the fees and charges that a holder of our ADSs may have to pay, directly or indirectly, in connection with the ownership of Chalco's American Depositary Receipts.

Persons depositing or withdrawing shares must pay: For:

| | |
|---|---|
| $5.00 (or less) per 100 ADSs (or portion of 100 ADSs) $0.02 (or less) per ADS | • Issuance of ADSs, including issuances resulting from a distribution of shares or rights or other property<br>• Cancellation of ADSs for the purpose of withdrawal, including if the deposit agreement terminates<br>• Any cash distribution to ADS registered holders |

A fee equivalent to the fee that would be payable if securities distributed to you had Distribution of securities distributed to holders of deposited securities

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| | |
|---|---|
| $0.02 (or less) per ADS per calendar year Registration or transfer fees | • Depositary services |
| | • Transfer and registration of shares on our share register to or from the name of the depositary or its agent when you deposit or withdraw shares |
| Expenses of the depositary | • Cable, telex and facsimile transmissions (when expressly provided in the deposit agreement) |
| | • Converting foreign currency to U.S. dollars |
| Taxes and other governmental charges that the depositary or the custodian have to pay on any ADS or share underlying an ADS, for example, stock transfer taxes, stamp duty or withholding taxes | • As necessary |
| Any charges incurred by the depositary or its agents for servicing the deposited securities | • As necessary |

The Bank of New York Mellon, as depositary, has agreed to reimburse certain expenses related to the administration and maintenance of our ADR program incurred by us in connection with the program. From January 1, 2016 to December 31, 2016, we did not receive any depositary reimbursements for our continuing annual stock exchange listing fees and our expenses incurred in connection with investor relationship programs. The depositary has also agreed to waive certain standard out-of-pocket administrative, maintenance and shareholder services expenses related to our ADR program. From January 1, 2016 to December 31, 2016, the total amount of the fees that were waived was US$130,142.68.

# PART II

## ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

## ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

None.

## ITEM 15. CONTROLS AND PROCEDURES

Our management, with the participation of our principal executive officer and principal financial officer, after evaluating the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15(d)-15(e) of the Exchange Act) as of the end of the period covered by this annual report, have concluded that, as of such date, our disclosure controls and procedures were effective.

### Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d- 15(f) under the Exchange Act. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Our internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of a company's assets, (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of our management and directors, and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the consolidated financial statements. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Under the supervision of and with the participation of the principal executive officer and principal financial officer, our management conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2016, based on the framework in the Internal Control-Integrated Framework (2013 Framework) issued by the Committee of Sponsoring Organizations of the Treadway Commission in May 2013.

Based on our evaluation under the framework in Internal Control-Integrated Framework (2013 Framework) issued by the Committee of Sponsoring Organizations of the Treadway Commission, our management concluded that, as of December 31, 2016, our internal control over financial reporting was effective to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRSs.

The effectiveness of our internal controls over financial reporting as of December 31, 2016 has been audited by Ernst & Young Hua Ming LLP, an independent registered public accounting firm, as stated in their report which is included herein.

Changes in Internal Control over Financial Reporting

During 2016, there have been no material changes in our internal control over financial reporting that occurred during the fiscal year covered by this annual report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our audit committee members are Ms. Chen Lijie, Mr. Hu Shihai and Mr. Lie-A-Cheong Tai Chong, David. Our Board has determined that Mr. Lie-A-Cheong Tai Chong, David, the chairman of the audit committee, qualifies as an "audit committee financial expert" as defined in Item 16A of Form 20-F and is the financial expert serving on our audit committee. See "Item 6. Directors, Senior Management and Employees."

ITEM 16B. CODE OF ETHICS

We have adopted a code of ethics that applies to our chief executive officer, chief financial officer, other directors, independent non-executive directors, senior management and employees. We have posted our code of ethics on our website: www.chalco.com.cn. A hard copy of this code of ethics is available to investors free of charge upon written request to the address on the cover of this annual report on Form 20-F.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Ernst & Young Hua Ming LLP served as our independent auditor for the fiscal year ended December 31, 2015 and 2016. A description of the fees billed to us by Ernst & Young, Ernst & Young Hua Ming LLP and Ernst & Young (China) Advisory Limited for professional services in each of the last two fiscal years is set forth below:

| | Year ended December 31 | |
|---|---|---|
| | 2015 | 2016 |
| | (RMB in thousands) | |
| Audit fee [(1)] and audit-related fees [(2)] | 23,264 | 23,475 |
| Other fees [(3)] | - | 250 |

(1) "Audit fee" represents the fee obtained from annual audit work charged by Ernst & Young and Ernst & Young Hua Ming LLP for the years ended

December 31, 2015 and 2016.

(2) "Audit-related fees" represent aggregate fees charged by Ernst & Young and Ernst & Young Hua Ming LLP for permissible professional services rendered in connection with issuance of a subsequent letter for additional issuance of A Shares according to the requirement of CSRC, as well as an auditors' letter for calculation accuracy of profit forecast of Shanxi Huaxing used in its circular for disposal for the year ended December 31, 2015, and comfort letter issued for permissible professional services rendered in connection with issuance of USD senior perpetual securities, auditors' letters on calculation accuracy of

profit forecast in relation to transactions such as disposal of environmental protection assets, transaction of Maochang mine and acquisition of equity interests of Chinalco Shanxi Jiaokou Xinghua Technology Co., Ltd.* ( for the year ended December 31, 2016.

(3) "Other fees" represent the fee charged by Ernst & Young (China) Advisory Limited for permissible professional services rendered in connection with environmental, social and governance report for the year ended December 31, 2016.

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Our audit committees pre-approves all audit, audit-related services and other services performed by Ernst & Young, Ernst & Young Hua Ming LLP and Ernst & Young (China) Advisory Limited, for the years ended December 31, 2015 and 2016.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16E. PURCHASE OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

We do not have an equity securities repurchase program and did not repurchase any of our equity securities during the year ended December 31, 2016.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

Effective from December 29, 2015, we have engaged Ernst & Young Hua Ming LLP as the Company's independent registered public accounting firm, and dismissed Ernst & Young. The change of the Company's independent registered public accounting firm was resolved by our Board of Directors as recommended by our audit committee on November 13, 2015, and approved by our shareholders at the annual general meeting on December 29, 2015. The decision was not made due to any disagreements with Ernst & Young.

Ernst Young's audit reports on our consolidated financial statements as of December 31, 2014 and 2013 and for each of the two years ended December 31, 2014 and 2013 did not contain an adverse opinion or a disclaimer of opinion and were not qualified or modified as to uncertainty, audit scope or accounting principles. The audit report of Ernst & Young on the effectiveness of the Company's internal control over financial reporting as of December 31, 2014 did not contain an adverse opinion, nor was it qualified or modified.

During each of the years ended December 31, 2014 and 2013 and the subsequent interim period through December 28, 2015, there were (i) no disagreements between the Company and Ernst & Young on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, any of which, if not resolved to Ernst & Young's satisfaction, would have caused Ernst & Young to make reference thereto in their reports, and (ii) no "reportable events" requiring disclosure pursuant to Item 16F(a)(1)(v) of the instructions to Form 20-F in connection with the Company's annual report on Form 20-F.

The Company provided Ernst & Young with a copy of the disclosures it is making in this annual report on Form 20-F and requested from Ernst & Young a letter addressed to the Securities and Exchange Commission indicating whether it agrees with such disclosures. A copy of Ernst & Young's letter dated April 15, 2016 was filed as Exhibit 15.1 to the Form 20-F for the year ended December 31, 2015 which we filed with the SEC on April 15, 2016.

During each of the two years ended December 31, 2014 and 2013 and the subsequent interim period through December 28, 2015, we have not consulted with Ernst & Young Hua Ming LLP regarding (i) the application of accounting principles to a specific transaction, either completed or proposed, or the type of audit opinion that might be rendered on the Company's consolidated financial statements, and neither a written report nor oral advice was provided to the Company that Ernst & Young Hua Ming LLP concluded were important factors considered by the Company in reaching a decision as to any accounting, auditing, or financial reporting issue, (ii) any matter that was the subject of a disagreement pursuant to Item 16F(a)(1)(iv) of the instructions to Form 20-F, or (iii) any "reportable event" as described in pursuant to Item 16F(a)(1)(v) of the instructions to Form 20-F.

ITEM 16G. CORPORATE GOVERNANCE

The NYSE has imposed a series of corporate governance listing standards for companies listed on the NYSE in Section 303A of its listing rules. However, the NYSE provides that listed companies that are foreign private issuers, subject to certain limitations and conditions, are permitted to follow "home country" practice in lieu of the provisions of Section 303A of the NYSE Listed Company Manual. As a foreign issuer listed on the NYSE, we are required to disclose a summary of the significant differences between our domestic corporate governance rules and NYSE corporate governance rules that apply to U.S. domestic issuers.

| | NYSE Listed Company Manual Requirements on Corporate Governance | Our Practice |
|---|---|---|
| Majority of independent directors | NYSE requires that the board of a listed company must comprise a majority of independent directors. There is no identical corporate governance requirement in the PRC. PRC securities regulatory authorities require that the board of a listed company shall comprise at least one-third of independent directors. | Our Board currently comprises three independent directors and six non-independent directors which is in compliance with the requirement by the PRC securities regulatory authorities. |
| Compensation Committee | NYSE requires U.S. domestic issuers to have a compensation committee composed entirely of independent directors. As a foreign private issuer, we are not subject to such requirement. | We have a remuneration committee that consists of two independent directors and a non-independent director. |
| Nominating Committee | NYSE requires U.S. domestic issuers to have only independent directors on their nominating committees. As a foreign private issuer, we are not subject to such requirement. | We have a nomination committee that consists of two non-independent directors and three independent directors. |
| Corporate governance committee | NYSE requires a listed company to establish a corporate governance committee which comprises entirely of independent directors. The corporate governance committee shall be co-established with the nomination committee and have a written charter. The corporate governance committee is responsible (i) for recommending to the board a accordingly do not separately maintain a set of corporate governance guidelines applicable to the corporation; and (ii) supervising the operation of the board and the management. The corporate governance committee shall also be subject to evaluation annually. There is no identical corporate governance requirement in the PRC. | Like most of the other companies incorporated in the PRC, we believe that corporate governance measures are of critical importance and should be implemented by the Board. We accordingly do not separately maintain a corporate governance committee. |

ITEM 16H. MINE SAFETY DISCLOSURE

As of the date of this annual report, we do not own or operate any mine in the United States. For details of the mining safety control of our bauxite mines in China, see "Item 4. Information on the Company - B. Business Overview - Raw Materials - Alumina - Own Mines."

PART III

ITEM 17. FINANCIALSTATEMENTS

We have elected to provide the financial statements and related information specified in Item 18 in lieu of Item 17.

ITEM 18. FINANCIALSTATEMENTS

The audited Consolidated Financial Statements as required under Item 18 are attached hereto starting on page F-1 of this Form 20-F.

ITEM 19. EXHIBITS

| Exhibit Number | Description |
|---|---|
| 1.1 | English translation of Articles of Association of Aluminum Corporation of China Limited (incorporated by reference to Exhibit 1.1 of our annual report on Form 20-F (File No. 001-15264) filed with the Securities and Exchange Commission or April 15, 2015) |
| 2.1 | Registrant's Specimen American Depositary Receipt (incorporated by reference to Exhibit 2.1 of our annual report on Form 20-F/A (file No. 001-15264) filed with the Securities and Exchange Commission on October 9, 2012) |
| 2.2 | Registrant's Specimen Certificate for H Shares (incorporated by reference to Exhibit 2.2 of our annual report on Form 20-F/A (file No.001-15264) filed with the Securities and Exchange Commission on October 9, 2012) |
| 2.3 | Deposit Agreement among the Registrant, The Bank of New York, as depositary, and Owners and Beneficial Owners of the American Depositary Receipts (incorporated by reference to Exhibit 2.3 of our annual report on Form 20-F/A (file No. 001-15264) filed with the Securities and Exchange Commission on October 9, 2012) |
| 4.1 | English translation of Form of Employment Contract (incorporated by reference to Exhibit 4.1 of our annual report on Form 20-F/A (file No. 001-15264) filed with the Securities and Exchange Commission on October 9, 2012) |
| 8.1* | List of Subsidiaries of Aluminum Corporation of China Limited as of December 31, 2016 |
| 12.1* | Certification by the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 |
| 12.2* | Certification by the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 |
| 13.1* | Certification by the Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |
| 13.2* | Certification by the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |
| 15.1 | Letter from Ernst & Young (incorporated by reference to Exhibit 15.1 of our annual report on Form 20-F (File No. 001-15264) filed with the Securities and Exchange Commission on April 15, 2015) |

* Filed with this annual report on Form 20-F

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on this Form 20-F on its behalf.

ALUMINUM CORPORATION OF CHINA LIMITED

By: /s/ YU Dehui

Name: YU Dehui

Title: Chairman of the Board

Date: April 18, 2017

ALUMINUM CORPORATION OF CHINA LIMITED
AND ITS SUBSIDIARIES

Consolidated Financial Statements

For the Years Ended December 31, 2014, 2015 and 2016

Together with Reports of Independent Public Accounting Firm
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ALUMINUM CORPORATION OF CHINA LIMITED


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Report of Independent Registered Public Accounting Firm on Consolidated Financial Statements

The Board of Directors and Shareholders of Aluminum Corporation of China Limited
(Incorporated in the People's Republic of China with limited liability)

We have audited the accompanying consolidated statements of financial position of Aluminum Corporation of China Limited and its subsidiaries (the "Group") as of December 31, 2015 and 2016, and the related consolidated statements of comprehensive income, statements of changes in equity and statements of cash flows for each of the two years ended December 31, 2016. These consolidated financial statements are the responsibility of the Group's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States) and International Standards on Auditing. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Group at December 31, 2015 and 2016, and the consolidated results of their operations and their cash flows for each of the two years ended December 31, 2016, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Aluminum Corporation of China Limited's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated April 18, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young Hua Ming LLP

Beijing, People's Republic of China
April 18, 2017
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Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting

The Board of Directors and Shareholders of Aluminum Corporation of China Limited
(Incorporated in the People's Republic of China with limited liability)

We have audited Aluminum Corporation of China Limited's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the "COSO criteria"). Aluminum Corporation of China Limited's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying "Management's Report on Internal Control over Financial Reporting". Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. An audit includes obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Aluminum Corporation of China Limited maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting (Continued)

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) and International Standards on Auditing, the consolidated statements of financial position of Aluminum Corporation of China Limited as of December 31, 2015 and 2016, and the related consolidated statements of comprehensive income, changes in equity and cash flows for each of the two years ended December 31, 2016 of Aluminum Corporation of China Limited and our report dated April 18, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young Hua Ming LLP

Beijing, People's Republic of China
April 18, 2017

Report of Independent Registered Public Accounting Firm on Consolidated Financial Statements

The Board of Directors and Shareholders of Aluminum Corporation of China Limited
(Incorporated in the People's Republic of China with limited liability)

We have audited the accompanying consolidated statement of comprehensive income, statement of changes in equity and statement of cash flows of Aluminum Corporation of China Limited and its subsidiaries (the "Group") for the year ended December 31, 2014. These consolidated financial statements are the responsibility of the Group's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States) and International Standards on Auditing. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated result of its operation and its cash flows for the year ended December 31, 2014, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

/s/ Ernst & Young

Hong Kong

April 15, 2015, except for the effects of business combination under common control as discussed in Note 2, as to which the date is April 18, 2017.

ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
As of December 31, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| | Notes | December 31, 2015 RMB'000 | December 31, 2016 RMB'000 | USD'000 |
|---|---|---|---|---|
| ASSETS | | | | |
| Non-current assets | | | | |
| Intangible assets | 5 | 10,439,015 | 10,608,791 | 1,527,984 |
| Property, plant and equipment | 6 | 91,626,428 | 90,525,652 | 13,038,406 |
| Investment properties | 7 | - | 1,245,033 | 179,322 |
| Land use rights and leasehold land | 8 | 3,450,355 | 3,325,286 | 478,941 |
| Investments in joint ventures | 9(a) | 5,150,887 | 6,240,200 | 898,776 |
| Investments in associates | 9(b) | 5,602,701 | 5,926,533 | 853,598 |
| Available-for-sale financial investments | 10 | 130,440 | 164,393 | 23,678 |
| Deferred tax assets | 11 | 1,362,995 | 1,426,707 | 205,489 |
| Other non-current assets | 12 | 9,833,179 | 4,188,121 | 603,214 |
| Total non-current assets | | 127,596,000 | 123,650,716 | 17,809,408 |
| Current assets | | | | |
| Inventories | 13 | 20,341,312 | 17,903,986 | 2,578,710 |
| Trade and notes receivables | 14 | 5,143,486 | 7,327,181 | 1,055,334 |
| Other current assets | 15 | 15,914,262 | 15,244,812 | 2,195,709 |
| Financial assets at fair value through profit or loss | 37.1/37.2 | 2,058 | 54,756 | 7,887 |
| Available-for-sale financial investments | 10 | 224,820 | - | - |
| Restricted cash and time deposits | 16 | 1,801,239 | 2,087,447 | 300,655 |
| Cash and cash equivalents | 16 | 20,756,202 | 23,808,048 | 3,429,072 |
| | | 64,183,379 | 66,426,230 | 9,567,367 |
| Assets of a disposal group classified as held for sale | 17 | 200,187 | - | - |
| Non-current assets held for sale | 17 | 78,838 | - | - |
| Total current assets | | 64,462,404 | 66,426,230 | 9,567,367 |
| Total assets | | 192,058,404 | 190,076,946 | 27,376,775 |

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ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION (Continued)
As of December 31, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| | Notes | December 31, 2015 RMB'000 | December 31, 2016 RMB'000 | USD'000 |
|---|---|---|---|---|
| EQUITY AND LIABILITIES | | | | |
| EQUITY | | | | |
| Equity attributable to owners of the parent | | | | |
| Share capital | 18 | 14,903,798 | 14,903,798 | 2,146,593 |
| Other reserves | 19 | 29,833,178 | 27,692,441 | 3,988,541 |
| Accumulated losses | | | | |
| — proposed final dividend for the year | 34 | - | - | - |
| — others | | (4,781,084) | (4,488,590) | (646,491) |
| | | 39,955,892 | 38,107,649 | 5,488,643 |
| Non-controlling interests | | 11,937,634 | 17,479,840 | 2,517,621 |
| Total equity | | 51,893,526 | 55,587,489 | 8,006,264 |
| LIABILITIES | | | | |
| Non-current liabilities | | | | |
| Interest-bearing loans and borrowings | 20 | 54,000,874 | 47,322,748 | 6,815,893 |
| Other non-current liabilities | 22 | 3,350,559 | 3,237,741 | 466,333 |
| Deferred tax liabilities | 11 | 1,006,155 | 984,304 | 141,769 |
| Total non-current liabilities | | 58,357,588 | 51,544,793 | 7,423,995 |

ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION (Continued)
As of December 31, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| EQUITY AND LIABILITIES | Notes | December 31, 2015 RMB'000 | December 31, 2016 RMB'000 | USD'000 |
|---|---|---|---|---|
| LIABILITIES | | | | |
| Current liabilities | | | | |
| Trade and notes payables | 24 | 14,726,544 | 11,285,334 | 1,625,426 |
| Other payables and accrued liabilities | 23 | 12,090,570 | 13,006,678 | 1,873,351 |
| Financial liabilities at fair value through profit or loss | 37.1/37.2 | 161,700 | 3,575 | 515 |
| Income tax payable | | 43,356 | 356,683 | 51,373 |
| Interest-bearing loans and borrowings | 20 | 54,761,255 | 58,292,394 | 8,395,851 |
| | | 81,783,425 | 82,944,664 | 11,946,516 |
| Liabilities of a disposal group classified as held for sale | 17 | 23,865 | - | - |
| Total current liabilities | | 81,807,290 | 82,944,664 | 11,946,516 |
| Total liabilities | | 140,164,878 | 134,489,457 | 19,370,511 |
| Total equity and liabilities | | 192,058,404 | 190,076,946 | 27,376,775 |
| Net current liabilities | | 17,344,886 | 16,518,434 | 2,379,149 |
| Total assets less current liabilities | | 110,251,114 | 107,132,282 | 15,430,259 |

The accompanying notes are an integral part of these financial statements.

Yu Dehui Zhang Zhankui
Director Chief Financial Officer

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ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
For the years ended December 31, 2014, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| | Note | 2014 RMB'000 | 2015 RMB'000 | 2016 RMB'000 | USD'000 |
|---|---|---|---|---|---|
| Revenue | 4 | 142,059,691 | 123,475,434 | 144,065,518 | 20,749,751 |
| Cost of sales | | (141,438,233) | (120,982,778) | (133,508,536) | (19,229,229) |
| Gross profit | | 621,458 | 2,492,656 | 10,556,982 | 1,520,522 |
| Selling and distribution expenses | | (1,766,666) | (1,784,114) | (2,065,453) | (297,487) |
| General and administrative expenses | | (4,843,400) | (2,346,565) | (3,348,345) | (482,262) |
| Research and development expenses | | (293,766) | (168,870) | (168,862) | (24,321) |
| Impairment loss on property, plant and equipment | 6 | (5,679,521) | (10,011) | (57,080) | (8,221) |
| Other income | 27 | 823,986 | 1,771,027 | 745,206 | 107,331 |
| Other gains, net | 28 | 356,929 | 5,023,600 | 166,633 | 24,000 |
| Finance income | 29 | 1,047,631 | 812,367 | 815,678 | 117,482 |
| Finance costs | 29 | (6,733,874) | (5,960,993) | (5,004,715) | (720,829) |
| Share of profits and losses of: | | | | | |
| Joint ventures | 9(a) | 89,510 | 23,238 | (95,508) | (13,756) |
| Associates | 9(b) | 350,575 | 284,531 | 115,091 | 16,577 |
| (Loss)/ profit before income tax | | (16,027,138) | 136,866 | 1,659,627 | 239,036 |
| Income tax (expense)/benefit | 32 | (1,074,910) | 230,147 | (404,172) | (58,213) |
| (Loss)/ profit for the year | | (17,102,048) | 367,013 | 1,255,455 | 180,823 |

ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (Continued)
For the years ended December 31, 2014, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| | Note | 2014 RMB'000 | 2015 RMB'000 | 2016 RMB'000 | USD'000 |
|---|---|---|---|---|---|
| (Loss)/ profit attributable to: | | | | | |
| Owners of the parent | | (16,269,477) | 148,622 | 402,494 | 57,971 |
| Non-controlling interests | | (832,571) | 218,391 | 852,961 | 122,852 |
| | | (17,102,048) | 367,013 | 1,255,455 | 180,823 |
| Other comprehensive income, net of tax: | | | | | |
| Other comprehensive income to be reclassified to profit or loss in subsequent periods: | | | | | |
| Available-for-sale investments: | | | | | |
| Changes in fair value | | - | 57,940 | 104,103 | 14,994 |
| Reclassification adjustments for gains included in the consolidated statement of profit or loss | | | | | |
| - Gain on disposal | | - | - | (102,854) | (14,814) |
| Income tax effect | | - | - | (13,288) | (1,914) |
| Share of other /(Transfer out) comprehensive income of an associate | | - | 4,658 | (4,658) | (671) |
| Exchange differences on translation of foreign operations | | 64,102 | 499,837 | 657,531 | 94,704 |
| Net other comprehensive income to be reclassified to profit or loss in subsequent periods | | 64,102 | 562,435 | 640,834 | 92,299 |
| Total other comprehensive income, net of tax | | 64,102 | 562,435 | 640,834 | 92,299 |
| Total comprehensive (loss) /income for the year | | (17,037,946) | 929,448 | 1,896,289 | 273,122 |
| Total comprehensive (loss)/ income for the year attributable to: | | | | | |
| Owners of the parent | | (16,205,375) | 711,057 | 1,043,328 | 150,270 |
| Non-controlling interests | | (832,571) | 218,391 | 852,961 | 122,852 |
| | | (17,037,946) | 929,448 | 1,896,289 | 273,122 |
| Basic and diluted (loss)/ earnings per share attributable to ordinary equity holders of the parent (expressed in RMB per share) | 33 | (1.20) | 0.01 | 0.02 | 0.004 |

Details of the dividends payable and proposed for the year are disclosed in note 34 to the consolidated financial statements.

The accompanying notes are an integral part of these consolidated financial statements.

ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
For the years ended December 31, 2014, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| | Attributable to owners of the parent | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Capital reserves | | | | | | | |
| | Share capital | Share premium | Other capital reserves | Statutory surplus reserve | Special reserve | Foreign currency translation reserve | Retained earnings | Total | Non-contr intere |
| At January 1, 2014 | 13,524,488 | 13,098,082 | 645,012 | 5,867,557 | 146,200 | (251,401) | 11,344,080 | 44,374,018 | 9,34 |
| Add: Adjustment due to business combinations under common control | - | 866,098 | 258,494 | - | - | - | 14,979 | 1,139,571 | 430. |
| At January 1, 2014 | 13,524,488 | 13,964,180 | 903,506 | 5,867,557 | 146,200 | (251,401) | 11,359,059 | 45,513,589 | 9,77 |
| Loss for the year | - | - | - | - | - | - | (16,269,477) | (16,269,477) | (832 |
| Other comprehensive income for the year: | | | | | | | | | |
| Exchange differences on translation of foreign operations | - | - | - | - | - | 64,102 | - | 64,102 | - |
| Total comprehensive income / (loss) for the year | - | - | - | - | - | 64,102 | (16,269,477) | (16,205,375) | (832 |
| Release of deferred government subsidies | - | - | 20,000 | - | - | - | - | 20,000 | - |
| Disposal of a subsidiary | - | - | - | - | - | - | - | - | (950 |
| Issuance of senior perpetual securities, net of issuance costs | - | - | - | - | - | - | - | - | 2,46 |
| Capital injection | - | 94,849 | - | - | - | - | - | 94,849 | 743. |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Increase of equity interest in a subsidiary | - | - | 24,061 | - | - | - | - | 24,061 | (24, |
| Other appropriation | - | - | - | - | 33,404 | - | - | 33,404 | 32,0 |
| Share of reserves of a joint venture and associates | - | - | - | - | 8,254 | - | - | 8,254 | - |
| Share of change in an associate due to passive equity dilution | - | - | (14,979 ) | - | - | - | - | (14,979 ) | - |
| Senior perpetual securities' distribution | - | - | - | - | - | - | - | - | (224 |
| Dividends paid to non-controlling shareholders | - | - | - | - | - | - | - | - | (98, |
| At December 31, 2014 | 13,524,488 | 14,059,029 | 932,588 | 5,867,557 | 187,858 | (187,299) | (4,910,418 ) | 29,473,803 | 11,8 |

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ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY (Continued)
For the years ended December 31, 2014, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| | Attributable to owners of the parent | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Capital reserves | | | | | | | |
| | Share capital (note 18) | Share premium | Other capital reserves | Statutory surplus reserve | Special reserve | Gain on available-for-sale financial assets | Other equity instruments | Foreign currency translation reserve | Accumula losses |
| At January 1, 2015 | 13,524,488 | 13,098,082 | 674,094 | 5,867,557 | 187,858 | - | - | (187,299) | (4,864,08 |
| Add: Adjustment due to business combinations under common control | - | 960,947 | 258,494 | - | - | - | - | - | (46,329 |
| At January 1, 2015 | 13,524,488 | 14,059,029 | 932,588 | 5,867,557 | 187,858 | - | - | (187,299) | (4,910,41 |
| Profit for the year | - | - | - | - | - | - | - | - | 148,622 |
| Other comprehensive income for the year | | | | | | | | | |
| Gain on available-for-sale financial assets | - | - | - | - | - | 57,940 | - | - | - |
| Share of other comprehensive income of an associate | - | - | - | - | - | 4,658 | - | - | - |
| Exchange differences related to foreign operations | - | - | - | - | - | - | - | 499,837 | - |
| Total comprehensive income for the year | - | - | - | - | - | 62,598 | - | 499,837 | 148,622 |
| Issuance of A shares | 1,379,310 | 6,518,162 | - | - | - | - | - | - | - |
| Business combination under common control | - | (37,662) | - | - | - | - | - | - | - |
| | - | - | - | - | (5,405) | - | - | - | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Disposal of subsidiaries | | | | | | | | | |
| Issuance of perpetual medium-term notes | - | - | - | - | - | - | 2,000,000 | - | - |
| Capital injection from non-controlling shareholders | - | - | - | - | - | - | - | - | - |
| Other appropriation | - | - | - | - | (81,302 ) | - | - | - | - |
| Share of reserves of joint ventures and associates | - | - | - | - | 11,878 | - | - | - | - |
| Partial disposal of Jiaozuo Wangfang | - | - | - | - | (13,949 ) | - | - | - | - |
| Dividends distributed by subsidiaries to non-controlling shareholders | - | - | - | - | - | - | - | - | - |
| Other equity instruments' distribution | - | - | - | - | - | - | 19,288 | - | (19,288 |
| At December 31, 2015 | 14,903,798 | 20,539,529 | 932,588 | 5,867,557 | 99,080 | 62,598 | 2,019,288 | 312,538 | (4,781,08 |

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ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY (Continued)
For the years ended December 31, 2014, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| | Attributable to owners of the parent | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Capital reserves | | | | | | | |
| | Share capital (note 18) | Share premium | Other capital reserves | Statutory surplus reserve | Special reserve | Gain on available-for-sale financial assets | Other equity instruments | Foreign currency translation reserve | Accumul losses |
| At January 1, 2016 | 14,903,798 | 19,578,582 | 674,094 | 5,867,557 | 98,700 | 62,598 | 2,019,288 | 312,538 | (4,677,0 |
| Add: Adjustment due to business combinations under common control | - | 960,947 | 258,494 | - | 380 | - | - | - | (104,026 |
| At January 1, 2016 | 14,903,798 | 20,539,529 | 932,588 | 5,867,557 | 99,080 | 62,598 | 2,019,288 | 312,538 | (4,781,0 |
| Profit for the year | - | - | - | - | - | - | - | - | 402,494 |
| Other comprehensive income for the year | | | | | | | | | |
| Changes in fair value of available-for-sale financial assets | - | - | - | - | - | 90,815 | - | - | - |
| Transfer out due to disposal of available-for-sale financial assets, net of tax | - | - | - | - | - | (102,854) | - | - | - |
| Transfer out of share of other comprehensive income of an associate | - | - | - | - | - | (4,658 ) | - | - | - |
| Exchange differences on translation of foreign operations | - | - | - | - | - | - | - | 657,531 | - |
| Total comprehensive income for the year | - | - | - | - | - | (16,697 ) | - | 657,531 | 402,494 |
| Release of deferred government | - | - | 20,290 | - | - | - | - | - | - |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| subsidies | | | | | | | | | |
| Business combinations under common control (note 39) | - | (3,010,627 ) | - | - | - | - | - | - | - |
| Dividends distributed by subsidiaries to non-controlling shareholders | - | - | - | - | - | - | - | - | - |
| Capital injection from non-controlling shareholders | - | 176,615 | - | - | - | - | - | - | - |
| Other appropriations | - | - | - | - | 23,182 | - | - | - | - |
| Share of reserves of joint ventures and associates (note 9) | - | - | - | - | 8,969 | - | - | - | - |
| Issuance of senior perpetual securities | - | - | - | - | - | - | - | - | - |
| Coupon accrued for other equity instruments | - | - | - | - | - | - | 110,000 | - | (110,00 |
| Other equity instruments' distribution | - | - | - | - | - | - | (110,000 ) | - | - |
| At December 31, 2016 | 14,903,798 | 17,705,517 | 952,878 | 5,867,557 | 131,231 | 45,901 | 2,019,288 | 970,069 | (4,488,5 |

The accompanying notes are an integral part of these consolidated financial statements.

ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended December 31, 2014, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| | Note | 2014 RMB'000 | 2015 RMB'000 | 2016 RMB'000 | USD'000 |
|---|---|---|---|---|---|
| Net cash flows from operating activities | 35 | 13,782,322 | 7,297,055 | 11,518,674 | 1,659,034 |
| Investing activities | | | | | |
| Purchases of intangible assets | | (106,077) | (34,610) | (286,282) | (41,233) |
| Purchases of property, plant and equipment | | (8,414,291) | (9,198,263) | (6,241,596) | (898,977) |
| Purchases of land use rights and leasehold land | | (295,506) | (139,624) | (20,963) | (3,019) |
| Purchases of investment properties | | - | - | (41,982) | (6,047) |
| Proceeds from disposal of property, plant and equipment | | 238,525 | 805,764 | 271,609 | 39,120 |
| Proceeds from disposal of intangible assets | | 11,637 | - | - | - |
| Proceeds from disposal of a joint venture and associates | | 7,993 | 1,857,993 | - | - |
| Proceeds from disposal of land use rights | | - | 554,554 | - | - |
| Cash consideration paid for business combinations under common control | 39 | - | (30,000) | (2,456,512) | (353,811) |
| Proceeds from disposal of the environmental protection business | 40 | - | - | 1,754,365 | 252,681 |
| Proceeds from disposal of subsidiaries and Alumina Production Line of Guizhou Branch of the Company | | 3,639,193 | 1,568,950 | 1,568,914 | 225,971 |
| Interest received from unpaid disposal proceeds | | 654,028 | 389,758 | 353,665 | 50,938 |
| Interest received from loans and borrowings to others | | 155,922 | 14,639 | 31,657 | 4,560 |
| Proceeds from disposal of Chalco Iron Holdings Limited, net of cash disposed of | | 2,801,901 | 2,680,288 | 2,877,391 | 414,431 |
| Disposal of Shanxi Huaxing, net of cash disposed of | | - | 590,650 | - | - |
| Disposal of Ningxia Photovoltaic subsidiaries, net of cash disposed of | | - | (189) | - | - |
| Investments in joint ventures | | - | (10,263) | (1,134,512) | (163,404) |
| Investments in associates | | (67,358) | (1,365,230) | (30,000) | (4,321) |
| Prepaid equity investment | | - | (150,000) | - | - |
| Proceeds from dividends and (purchases)/disposal of available-for-sale investments | | (4,540,101) | 4,410,780 | 474,404 | 68,328 |
| Investment income from financial products | 28 | 71,023 | 38,469 | 15,905 | 2,291 |
| Dividends received | | 58,929 | 320,857 | 65,083 | 9,374 |
| (Increase)/decrease in restricted cash | | (4,000) | 8,500 | - | - |
| Increase in time deposits | | - | (51,000) | (21,700) | (3,125) |
| Proceeds/(Payment) from settlement of futures, options and forward foreign exchange contracts, net | | 181,768 | (680,685) | (2,006,583) | (289,009) |
| Payment for acquisition of a subsidiary acquired in prior year | | (36,958) | - | - | - |
| Loans to related parties | 36 | (764,000) | (140,000) | (547,957) | (78,922) |
| Loans repaid by related parties | | 972,139 | 111,000 | 213,354 | 30,729 |
| Loan to a third party | | (68,439) | - | - | - |
| Assets related government grants received | | 442,499 | 840,769 | 164,547 | 23,700 |
| Others | | (78,494) | - | - | - |

| | | | | |
|---|---|---|---|---|
| Net cash flows (used in)/from investing activities | (5,139,667 ) | 2,393,107 | (4,997,193 ) | (719,745 ) |

ALUMINUM CORPORATION OF CHINA LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS (Continued)
For the years ended December 31, 2014, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

| | Note | 2014 RMB'000 | 2015 RMB'000 | 2016 RMB'000 | USD'000 |
|---|---|---|---|---|---|
| Financing activities | | | | | |
| Proceeds from a gold leasing arrangement | 20(g) | - | - | 3,000,000 | 432,090 |
| Payment of upfront interest of a gold leasing arrangement | 20(g) | - | - | (86,424) | (12,448) |
| Proceeds from issuance of short-term bonds and medium-term notes and private placement notes, net of issuance costs | | 34,892,986 | 20,988,166 | 11,070,660 | 1,594,507 |
| Proceeds from issuance of senior perpetual securities, net of issuance costs | 41 | 2,461,813 | 2,000,000 | 3,374,398 | 486,014 |
| Repayments of short-term bonds and medium-term notes and bonds | | (26,700,000) | (32,000,000) | (13,500,000) | (1,944,404) |
| Distribution paid for other equity instruments | | (224,241) | (297,766) | (434,762) | (62,619) |
| Drawdown of short-term and long-term loans | | 60,562,225 | 55,810,352 | 44,497,423 | 6,408,962 |
| Repayments of short-term and long-term loans | | (70,276,842) | (59,196,790) | (48,318,364) | (6,959,292) |
| Proceeds from government subsidies | | 25,000 | - | - | - |
| Proceeds from finance lease, net of deposit and transaction costs | | 1,768,840 | 5,657,694 | 1,527,085 | 219,946 |
| Finance lease instalment paid | | (390,433) | (472,902) | (1,580,986) | (227,709) |
| Proceeds from issuance of A shares, net of issuance costs | | - | 7,897,472 | - | - |
| Capital injection | | 756,711 | 261,000 | 1,838,540 | 264,805 |
| Dividends paid by subsidiaries to non-controlling shareholders | | (19,273) | (20,045) | (20,481) | (2,950) |
| Interest paid | | (6,766,473) | (6,052,821) | (5,028,270) | (724,222) |
| Others | | 96,336 | - | - | - |
| Net cash flows used in financing activities | | (3,813,351) | (5,425,640) | (3,661,181) | (527,320) |
| Net increase in cash and cash equivalents | | 4,829,304 | 4,264,522 | 2,860,300 | 411,969 |
| Cash and cash equivalents at beginning of year | | 11,541,675 | 16,376,914 | 20,756,202 | 2,989,515 |
| Effect of foreign exchange rate changes, net | | 5,935 | 114,766 | 191,546 | 27,588 |
| Cash and cash equivalents at December 31 | 16 | 16,376,914 | 20,756,202 | 23,808,048 | 3,429,072 |

The accompanying notes are an integral part of these consolidated financial statements.

ALUMINUM CORPORATION OF CHINA LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
For the years ended December 31, 2014, 2015 and 2016
(Amounts expressed in thousands of RMB unless otherwise stated)

1. GENERAL INFORMATION

Aluminum Corporation of China Limited (the "Company") ( ) and its subsidiaries (together the "Group") are principally engaged in the manufacture and distribution of alumina, primary aluminum and energy products. The Group is also engaged in the development of bauxite related resources, the production, fabrication and distribution of bauxite, carbon and relevant non-ferrous metal products and the trading and logistics and transport services of non-ferrous metal products and coal products.

The Company is a joint stock company which is domiciled and was established on September 10, 2001 in the People's Republic of China (the "PRC") with limited liability. The address of its registered office is No. 62 North Xizhimen Street, Haidian District, Beijing, the PRC.

The Company's shares have been listed on the Main Board of the Hong Kong Stock Exchange and the New York Stock Exchange since 2001. The Company also listed its A shares on the Shanghai Stock Exchange in 2007.

In the opinion of the directors, the ultimate holding company and parent of the Company is Aluminum Corporation of China ("Chinalco") ( ), a company incorporated and domiciled in the PRC and wholly owned by the State-owned Assets Supervision and Administration Commission of the State Council.

Information about subsidiaries

As at December 31, 2016, particulars of the Company's principal subsidiaries are as follows:

| Name | Place of registration and business | Registered capital | Principal activities | Percentage of equity attributable to the Company Direct | Indirect |
|---|---|---|---|---|---|
| Baotou Aluminum Co., Ltd. ("Baotou Aluminum") ( ) | PRC/Mainland of China | 1,668,980 | Manufacture and distribution of primary aluminum, aluminum alloy and related fabricated products and carbon products | 100.00% | - |
| China Aluminum International Trading Co., Ltd. ("Chalco Trading") ( ) | PRC/Mainland of China | 1,731,111 | Import and export activities | 100.00% | - |
| Shanxi Huasheng Aluminum Co., Ltd. ("Shanxi Huasheng") ( ) | PRC/Mainland of China | 1,000,000 | Manufacture and distribution of primary aluminum, aluminum alloy and carbon-related products | 51.00% | - |
| Shanxi Huaze Aluminum and Power Co., Ltd. ( 澤 電 ) | PRC/Mainland of China | 1,500,000 | Manufacture and distribution of primary aluminum and anode carbon products and electricity generation and supply | 60.00% | - |

ALUMINUM CORPORATION OF CHINA LIMITED
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1. GENERAL INFORMATION (Continued)

Information about subsidiaries (Continued)

| | Place of registration and business | Registered capital | Principal activities | Percentage of equity attributable to the Company Direct | Indirect |
|---|---|---|---|---|---|
| uminum Co., Ltd. (遵義 ) | PRC/Mainland of China | 802,620 | Manufacture and distribution of primary aluminum | 62.10% | - |
| unyi Alumina Co., Ltd. ("Zunyi Alumina") 36981;義氧化 ) | PRC/Mainland of China | 1,400,000 | Manufacture and distribution of alumina | 73.28% | - |
| Huayu Alloy Materials Co., Ltd. 31; 宇铝合金材料 ) ng Huayu") | PRC/Mainland of China | 1,627,697 | Manufacture and distribution of aluminum alloy | 55.00% | - |
| ong Kong Ltd. ( 香港 ) | Hong Kong | HKD849,940 in thousand | Overseas investments and alumina import and export activities | 100.00% | - |
| ining Co., Ltd. ( 礦 ) | PRC/Mainland of China | 760,000 | Manufacture, acquisition and distribution of bauxite mines, limestone ore, aluminum magnesium ore and related non-ferrous metal products | 100.00% | - |
| nergy Co., Ltd. ( 能源 ) | PRC/Mainland of China | 819,993 | Thermoelectric supply and investment management | 100.00% | - |
| uminum Ningxia Energy Group Co., Ltd. ("Ningxia （ 寧夏能源 ） | PRC/Mainland of China | 5,025,800 | Thermal power, wind power and solar power generation, | 70.82% | - |

| | | | | | |
|---|---|---|---|---|---|
| | | | coal mining, and power related equipment manufacturing | | |
| Huajin Aluminum Co., Ltd. ("Guizhou Huajin")<br>;州 錦 ) | PRC/Mainland of China | 1,000,000 | Manufacture and distribution of alumina | 60.00% | - |

ALUMINUM CORPORATION OF CHINA LIMITED
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1. GENERAL INFORMATION (Continued)

Information about subsidiaries (Continued)

| | Place of registration and business | Registered capital | Principal activities | Percentage of equity attributable to the Company Direct | Indirect |
|---|---|---|---|---|---|
| u Research Institute of Non-ferrous Metal Co., Ltd. 州 色金屬研究院) | PRC/Mainland of China | 214,858 | Research and development services | 100.00% | - |
| g Co., Ltd. ("Chalco Shandong")( 東 ) | PRC/Mainland of China | 2,500,000 | Manufacture and distribution of alumina | 100.00% | - |
| u Aluminum Co., Ltd. ( 州 ) | PRC/Mainland of China | 3,200,000 | Manufacture and distribution of alumina | 100.00% | - |
| n China Resources Co., Ltd. ( 潤 )("Shanxi Huarun") | PRC/Mainland of China | 200,000 | Manufacture and distribution of primary aluminum | 50.00% | - |
| Logistics Group Corporation Co., Ltd. ( 物流 ) | PRC/Mainland of China | 50,000 | Logistic transportation | 81.87% | 18.13% |
| Jiaokou Xinghua Technology Ltd.("Xinghua Technology") ( ) | PRC/Mainland of China | 270,000 | Manufacture and distribution of primary aluminum | 33.00% | 33.00% |
| ai Company Limited ("Chinalco （上海） ) | PRC/Mainland of China | 968,300 | Trading and engineering project management | 60.00% | - |

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ALUMINUM CORPORATION OF CHINA LIMITED
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## 2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES

The principal accounting policies applied in the preparation of these financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

### 2.1 Basis of preparation

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRSs") issued by the International Accounting Standards Board (the "IASB") and the disclosure requirements of the Hong Kong Companies Ordinance. They have been prepared on a historical cost basis, except for available-for-sale financial investments and financial assets and liabilities at fair value through profit or loss which have been measured at fair value. Disposal groups held for sale are stated at the lower of their carrying amounts and fair values less costs to sell.

These financial statements are presented in thousands of Chinese Renminbi ("RMB") unless otherwise stated.

ALUMINUM CORPORATION OF CHINA LIMITED
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.1 Basis of preparation (Continued)

Going concern

As at December 31, 2016, the Group's current liabilities exceeded its current assets by approximately RMB16,518 million (December 31, 2015: RMB17,345 million ). The directors of the Company have considered the Group's available sources of funds as follows:

- The Group's expected net cash inflows from operating activities in 2017;
- Unutilized banking facilities of approximately RMB72,255 million as at December 31, 2016, of which amounts totaling RMB67,510 million will be subject to renewal during the next 12 months. The directors of the Company are confident that these banking facilities could be renewed upon expiration based on the Group's past experience and good credit standing; and
- Other available sources of financing from banks and other financial institutions given the Group's credit history.

The directors of the Company believe that the Group has adequate resources to continue operation for the foreseeable future of not less than 12 months from the approval date of these financial statements. The directors of the Company therefore are of the opinion that it is appropriate to adopt the going concern basis in preparing the consolidated financial statements.

Consolidation

The consolidated financial statements comprise the financial statements of the Company and all of its subsidiaries for the year ended December 31, 2016. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Specifically, the Group controls an investee if and only if the Group has:

- Power over the investee (i.e.existing rights that give it the current ability to direct the relevant activities of the investee);
- Exposure, or rights, to variable returns from its involvement with the investee; and
- The ability to use its power over the investee to affect its returns.

ALUMINUM CORPORATION OF CHINA LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.1 Basis of preparation (Continued)

Consolidation (Continued)

Generally, there is a presumption that a majority of voting rights result in control. To support this presumption and when the Group has less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including:

- The contractual arrangement with the other vote holders of the investee;
- Rights arising from other contractual arrangements; and
- The Group's voting rights and potential voting rights.

The Group re-assesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control of the subsidiary. Assets, liabilities, income and expenses of a subsidiary acquired or disposed of during the year are included in the statement of comprehensive income from the date the Group gains control until the date the Group ceases to control the subsidiary.

Profit or loss and each component of other comprehensive income ("OCI") are attributed to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with the Group's accounting policies. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

ALUMINUM CORPORATION OF CHINA LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)
For the years ended December 31, 2014, 2015 and 2016
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.1 Basis of preparation (Continued)

Consolidation (Continued)

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction. If the Group loses control over a subsidiary, it:

- Derecognizes the assets (including goodwill) and liabilities of the subsidiary;
- Derecognizes the carrying amount of any non-controlling interests;
- Derecognizes the cumulative translation differences recorded in equity;
- Recognizes the fair value of the consideration received;
- Recognizes the fair value of any investment retained;
- Recognizes any surplus or deficit in profit or loss; and
- Reclassifies the parent's share of components previously recognized in OCI to profit or loss or retained earnings, as appropriate, as would be required if the Group had directly disposed of the related assets or liabilities.

(a) Merger accounting for business combinations under common control

The consolidated financial statements incorporate the financial statements of the combining entities or businesses in which the common control combination occurs as if they had been combined from the date when the combining entities or businesses first came under the control of the controlling party.

The net assets of the combining entities or businesses are combined using the existing book values from the controlling parties' perspective. No amount is recognized in consideration for goodwill or excess of the acquirers' interest in the net fair value of the acquiree's identifiable assets, liabilities and contingent liabilities over cost at the time of the common control combination, to the extent of the continuation of the controlling party's interest.

ALUMINUM CORPORATION OF CHINA LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.1 Basis of preparation (Continued)

Consolidation (Continued)

(a) Merger accounting for business combinations under common control

The consolidated statement of comprehensive income includes the results of each of the combining entities or businesses from the earliest date presented or since the date when the combining entities or businesses first came under common control, where this is a shorter period, regardless of the date of the common control combination.

The comparative financial data have been restated to reflect the business combinations under common control occurred during this year as disclosed in note 39.

Transaction costs, including professional fees, registration fees, costs of furnishing information to shareholders, costs or losses incurred in combining operations of the previously separate businesses and etc., incurred in relation to the common control combination that is to be accounted for by using the merger accounting method are recognized as expenses in the period in which they are incurred.

(b) Acquisition method of accounting for other business combinations

The acquisition method of accounting is used to account for the acquisition of subsidiaries by the Group, other than common control combinations. The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree and the equity interests issued by the Group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Acquisition-related costs are expensed as incurred. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. On an acquisition-by-acquisition basis, the Group recognizes any non-controlling interest in the acquiree either at fair value or at the non-controlling interest's proportionate share of the recognized amounts of the acquiree's identifiable net assets. The excess of the consideration transferred, the amount recognized for non-controlling interest in the acquiree and the acquisition-date fair value of any previous equity interest in the acquiree over the fair value of the identifiable net assets acquired is recorded as goodwill. If this is less than the fair value of the net assets of the subsidiary acquired in the case of a bargain purchase, the difference is recognized directly in profit or loss.

ALUMINUM CORPORATION OF CHINA LIMITED
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.1 Basis of preparation (Continued)

Consolidation (Continued)

(c) Subsidiaries

A subsidiary is an entity, directly or indirectly, controlled by the Company. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee (i.e., existing rights that give the Group the current ability to direct the relevant activities of the investee).

When the Company has, directly or indirectly, less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including:

(a) the contractual arrangement with the other vote holders of the investee;

(b) rights arising from other contractual arrangements; and

(c) the Group's voting rights and potential voting rights.

Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are de-consolidated from the date that control ceases.

Inter-company transactions, balances, income and expenses on transactions between group companies are eliminated. Profits and losses resulting from inter-company transactions that are recognized in assets are also eliminated. Accounting policies of subsidiaries have been changed where necessary in the consolidated financial statements to ensure consistency with the policies adopted by the Group.

In the Company's statement of financial position, as permitted under IFRS 1, the investments in subsidiaries acquired prior to January 1, 2008, being the date of transition to IFRS, are stated at deemed cost as required under the previously adopted accounting standards. Subsidiaries acquired after that date that are not classified as held for sale in accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations are stated at cost less provision for impairment losses. The results of subsidiaries are accounted for by the Company on the basis of dividends received and receivable.

ALUMINUM CORPORATION OF CHINA LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.2 Changes in accounting policies and disclosures

The Group has adopted the following new and revised IFRSs (which include International Financial Reporting Standards, International Accounting Standards, and Interpretations and amendments) for the first time for the current year's financial statements.

| | |
|---|---|
| Amendments to IFRS 10, IFRS 12 and IAS 28 (2011) | Investment Entities: Applying the Consolidation Exception |
| Amendments to IFRS 11 | Accounting for Acquisitions of Interests in Joint Operations |
| Amendments to IAS 1 | Disclosure Initiative |
| Amendments to IAS 16 and IAS 38 | Clarification of Acceptable Methods of Depreciation and Amortization |
| Amendments to IAS 27 (2011) | Equity Method in Separate Financial Statements |
| Annual Improvements 2012-2014 Cycle | Amendments to a number of IFRSs |

Except for the amendments to IFRS 10, IFRS 12 and IAS 28 (2011), and certain amendments included in the Annual Improvements 2012-2014 Cycle, which are not relevant to the preparation of the Group's financial statements, the principal effects of adopting these new and revised IFRSs are as follows:

Amendments to IFRS 11 Accounting for Acquisitions of Interests in Joint Operations

Amendments to IFRS 11 require that an acquirer of an interest in a joint operation in which the activity of the joint operation constitutes a business must apply the relevant principles for business combinations in IFRS 3.

The amendments also clarify that a previously held interest in a joint operation is not remeasured on the acquisition of an additional interest in the same joint operation while joint control is retained. In addition, a scope exclusion has been added to IFRS 11 to specify that the amendments do not apply when the parties sharing joint control, including the reporting entity, are under common control of the same ultimate controlling party. The amendments apply to both the acquisition of the initial interest in a joint operation and the acquisition of any additional interests in the same joint operation. The amendments have had no impact on the Group as there has been no interest acquired in a joint operation during the year.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.2 Changes in accounting policies and disclosures (Continued)

Amendments to IAS 1 Disclosure Initiative

Amendments to IAS 1 include narrow-focus improvements in respect of the presentation and disclosure in financial statements. The amendments clarify:

(i) the materiality requirements in IAS 1;
(ii) that specific line items in the statement of comprehensive income and the statement of financial position may be disaggregated;
(iii) that entities have flexibility as to the order in which they present the notes to financial statements; and
(iv) that the share of other comprehensive income of associates and joint ventures accounted for using the equity method must be presented in aggregate as a single line item, and classified between those items that will or will not be subsequently reclassified to profit or loss.

Furthermore, the amendments clarify the requirements that apply when additional subtotals are presented in the statement of financial position and the statement of profit or loss. The amendments have had no significant impact on the Group's financial statements.

Amendments to IAS 16 and IAS 38 Charification of Acceptable Methods of Depreciation and Amortization

Amendments to IAS 16 and IAS 38 clarify the principle in IAS 16 and IAS 38 that revenue reflects a pattern of economic benefits that are generated from operating a business (of which the asset is part) rather than the economic benefits that are consumed through the use of the asset. As a result, a revenue-based method cannot be used to depreciate property, plant and equipment and may only be used in very limited circumstances to amortize intangible assets. The amendments are applied prospectively. The amendments have had no impact on the financial position or performance of the Group as the Group has not used a revenue-based method for the calculation of depreciation of its non-current assets.

Amendments to IAS 27 (2011) Equity Method in Separate Financial Statements

The IAS 27 (2011) Amendments allow entities to use the equity method to account for investments in subsidiaries, joint ventures and associates in their separate financial statements. Entities already applying IFRSs and electing to change to the equity method to account for investments in subsidiaries, joint ventures and associates in their separate financial statements are required to apply the change retrospectively. The amendments have had no significant impact on the Group and the Company has not elected to change to equity method in its separate financial statement.

ALUMINUM CORPORATION OF CHINA LIMITED
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.2 Changes in accounting policies and disclosures (Continued)

Annual Improvements to IFRSs 2012-2014 (Continued)

Annual Improvements to IFRSs 2012-2014 Cycle issued in September 2014 sets out amendments to a number of IFRSs. Details of the amendments are as follows:

IFRS 5 Non-current Assets Held for Sale and Discontinued Operations: Clarifies that changes to a plan of sale or a plan of distribution to owners should not be considered to be a new plan of disposal, rather it is a continuation of the original plan. Accordingly, there is no change in the application of the requirements in IFRS 5. The amendments also clarify that changing the disposal method does not change the date of classification of the non-current assets or disposal group held for sale.

The amendments are applied prospectively. The amendments have had no impact on the Group as the Group did not have any disposal group held for sale at the end of the year.

2.3 Issued but not yet effective financial reporting standards

The Group has not applied the following new and revised IFRSs that have been issued but are not yet effective, in these financial statements:

| | |
|---|---|
| Amendments to IFRS 2 | Classification and Measurement of Share-based Payment Transactions[2] |
| Amendments to IFRS 4 | Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts[2] |
| IFRS 9 | Financial Instruments[2] |
| Amendments to IFRS 10 and IAS 28 (2011) | Sale or Contribution of Assets between an Investor and its Associate or Joint Venture[4] |
| IFRS 15 | Revenue from Contracts with Customers[2] |
| Amendments to IFRS 15 | Clarifications to IFRS 15 Revenue from Contracts with Customers[2] |
| IFRS 16 | Leases[3] |
| Amendments to IAS 7 | Disclosure Initiative[1] |
| Amendments to IAS 12 | Recognition of Deferred Tax Assets for Unrealized Losses[1] |
| Amendments to IAS 40 | Transfers of Investment Property[2] |
| IFRIC Interpretation 22 | Foreign Currency Transactions and Advance Consideration[2] |
| Annual Improvements to IFRSs 2014-2016 Cycle | Amendments to a number of IFRSs[1/2] |

1 Effective for annual periods beginning on or after January 1, 2017
2 Effective for annual periods beginning on or after January 1, 2018
3 Effective for annual periods beginning on or after January 1, 2019
4 No mandatory effective date yet determined but available for adoption

Further information about those IFRSs that are expected to be applicable to the Group is as follows:

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ALUMINUM CORPORATION OF CHINA LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.3 Issued but not yet effective financial reporting standards (Continued)

Amendments to IFRS 2 Classification and Measurement of Share-based Payment Transactions

The IASB issued amendments to IFRS 2 in June 2016 that address three main areas: the effects of vesting conditions on the measurement of a cash-settled share-based payment transaction; the classification of a share-based payment transaction with net settlement features for withholding a certain amount in order to meet the employee's tax obligation associated with the share-based payment; and accounting where a modification to the terms and conditions of a share-based payment transaction changes its classification from cash-settled to equity-settled. The amendments clarify that the approach used to account for vesting conditions when measuring equity-settled share-based payments also applies to cash-settled share-based payments. The amendments introduce an exception so that a share-based payment transaction with net share settlement features for withholding a certain amount in order to meet the employee's tax obligation is classified in its entirety as an equity-settled share-based payment transaction when certain conditions are met. Furthermore, the amendments clarify that if the terms and conditions of a cash-settled share-based payment transaction are modified, with the result that it becomes an equity-settled share-based payment transaction, the transaction is accounted for as an equity-settled transaction from the date of the modification. The Group expects to adopt the amendments from January 1, 2018. The amendments are not expected to have any significant impact on the Group's financial statements.

IFRS 9 Financial Instruments

In July 2014, the IASB issued the final version of IFRS 9, bringing together all phases of the financial instruments project to replace IAS 39 and all previous versions of IFRS 9. The standard introduces new requirements for classification and measurement, impairment and hedge accounting. The Group expects to adopt IFRS 9 from January 1, 2018. The Group is currently assessing the impact of the standard.

2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.3 Issued but not yet effective financial reporting standards (Continued)

Amendments to IFRS 10 and IAS 28 (2011) Sale or Contribution of Assets between an Investor and its Associate or Joint Venture

Amendments to IFRS 10 and IAS 28 (2011) address an inconsistency between the requirements in IFRS 10 and in IAS 28 (2011) in dealing with the sale or contribution of assets between an investor and its associate or joint venture. The amendments require a full recognition of a gain or loss when the sale or contribution of assets between an investor and its associate or joint venture constitutes a business. For a transaction involving assets that do not constitute a business, a gain or loss resulting from the transaction is recognized in the investor's profit or loss only to the extent of the unrelated investor's interest in that associate or joint venture. The amendments are to be applied prospectively. The previous mandatory effective date of amendments to IFRS 10 and IAS 28 (2011) was removed by the IASB in January 2016 and a new mandatory effective date will be determined after the completion of a broader review of accounting for associates and joint ventures. However, the amendments are available for adoption now.

Amendments to IFRS 15 Clarifications to IFRS 15 Revenue from Contracts with Customers

IFRS 15 establishes a new five-step model to account for revenue arising from contracts with customers. Under IFRS 15, revenue is recognized at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The principles in IFRS 15 provide a more structured approach for measuring and recognising revenue. The standard also introduces extensive qualitative and quantitative disclosure requirements, including disaggregation of total revenue, information about performance obligations, changes in contract asset and liability account balances between periods and key judgements and estimates. The standard will supersede all current revenue recognition requirements under IFRSs. In June 2016, the IASB issued amendments to IFRS 15 to address the implementation issues on identifying performance obligations, application guidance on principal versus agent and licences of intellectual property, and transition. The amendments are also intended to help ensure a more consistent application when entities adopt IFRS 15 and decrease the cost and complexity of applying the standard. Either a full retrospective application or a modified retrospective application is required for annual periods beginning on or after January 1, 2018. Early adoption is permitted. During the year ended December 31, 2016, the Group performed a preliminary assessment on the impact of the adoption of IFRS 15, which is subject to changes arising from a more detailed ongoing analysis. Furthermore, the Group is considering the clarifications issued by the IASB in 2016 and will monitor any further developments.

ALUMINUM CORPORATION OF CHINA LIMITED
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.3 Issued but not yet effective financial reporting standards (Continued)

Amendments to IFRS 15 Clarifications to IFRS 15 Revenue from Contracts with Customers (Continued)

The Group's principal activities consist of the manufacture and sale of alumina, the manufacture and sale of primary aluminium and aluminum alloy products, trading and logistics of non-ferrous metal products, coal, electric power and other energy businesses. Upon initial evaluation, the Group expects to adopt IFRS 15 on January 1, 2018 using the modified retrospective method and the effect of adoption on the Group's financial statements is not expected to be material.

IFRS 16 Leases

IFRS 16 replaces IAS 17 Leases, IFRIC-4 Determining whether an Arrangement contains a Lease, SIC-15 Operating Leases - Incentives and SIC-27 Evaluating the Substance of Transactions Involving the Legal Form of a Lease. The standard sets out the principles for the recognition, measurement, presentation and disclosure of leases and requires lessees to recognize assets and liabilities for most leases. The standard includes two recognition exemptions for lessees – leases of low-value assets and short-term leases. At the commencement date of a lease, a lessee will recognize a liability to make lease payments and an asset representing the right to use the underlying asset during the lease term. The right-of-use asset is subsequently measured at cost less accumulated depreciation and any impairment losses unless the right-of-use asset meets the definition of investment property in IAS 40. The lease liability is subsequently increased to reflect the interest on the lease liability and reduced for the lease payments. Lessees will be required to separately recognize the interest expense on the lease liability and the depreciation expense on the right-of-use asset. Lessees will also be required to remeasure the lease liability upon the occurrence of certain events, such as change in the lease term and change in future lease payments resulting from a change in an index or rate used to determine those payments. Lessees will gen erally recognize the amount of the remeasurement of the lease liability as an adjustment to the right-of-use asset. Lessor accounting under IFRS 16 is substantially unchanged from the accounting under IAS 17. Lessors will continue to classify all leases using the same classification principle as in IAS 17 and distinguish between operating leases and finance leases. The Group expects to adopt IFRS 16 on January 1, 2019 and is currently assessing the impact of IFRS 16 upon adoption.

Amendments to IAS 7 Disclosure Initiative

Amendments to IAS 7 require an entity to provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes. The amendments will result in additional disclosure to be provided in the financial statements. The Group expects to adopt the amendments from January 1, 2017.

ALUMINUM CORPORATION OF CHINA LIMITED
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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.3 Issued but not yet effective financial reporting standards (Continued)

Amendments to IAS 12 Recognition of Deferred Tax Assets for Unrealized Losses

Amendments to IAS 12 were issued with the purpose of addressing the recognition of deferred tax assets for unrealized losses related to debt instruments measured at fair value, although they also have a broader application for other situations. The amendments clarify that an entity, when assessing whether taxable profits will be available against which it can utilize a deductible temporary difference, needs to consider whether tax law restricts the sources of taxable profits against which it may make deductions on the reversal of that deductible temporary difference. Furthermore, the amendments provide guidance on how an entity should determine future taxable profits and explain the circumstances in which taxable profit may include the recovery of some assets for more than their carrying amount. The Group expects to adopt the amendments from January 1, 2017.

Amendments to IAS 40 Transfers of Investment Property

The amendments clarify when an entity should transfer property, including property under construction or development into, or out of investment property. The amendments state that a change in use occurs when the property meets, or ceases to meet, the definition of investment property and there is evidence of the change in use. A mere change in management's intentions for the use of a property does not provide evidence of a change in use. The amendments are effective for annual periods beginning on or after January 1, 2018. Early application of the amendments is permitted and must be disclosed. The Group expects to adopt the amendments from January 1, 2018.

IFRIC Interpretation 22 Foreign Currency Transactions and Advance Consideration

The interpretation clarifies that in determining the spot exchange rate to use on initial recognition of the related asset, expense or income (or part of it) on the derecognition of a non-monetary asset or non-monetary liability relating to advance consideration, the date of the transaction is the date on which an entity initially recognizes the nonmonetary asset or non-monetary liability arising from the advance consideration. If there are multiple payments or receipts in advance, then the entity must determine a date of the transactions for each payment or receipt of advance consideration. The interpretation is effective for annual periods beginning on or after January 1, 2018. Early application of the amendments is permitted and must be disclosed. The Group expects to adopt the amendments from January 1, 2018.

2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.3 Issued but not yet effective financial reporting standards (Continued)

Annual Improvements to IFRSs 2014-2016 Cycle

Annual Improvements to IFRSs 2014-2016 Cycle issued in December 2016 sets out amendments to a number of IFRSs. Details of the amendments are as follows:

IFRS 1 First-time Adoption of International Financial Reporting Standards

Short-term exemptions in paragraphs E3–E7 of IFRS 1 were deleted because they have now served their intended purpose. The amendment is effective from January 1, 2018. The amendments have had no impact on the Group as the Group has already adopted International Financial Reporting Standards.

IAS 28 Investments in Associates and Joint Ventures

The amendments clarifies that:

- An entity that is a venture capital organization, or other qualifying entity, may elect, at initial recognition on an investment-by-investment basis, to measure its investments in associates and joint ventures at fair value through profit or loss.

- If an entity that is not itself an investment entity has an interest in an associate or joint venture that is an investment entity, the entity may, when applying the equity method, elect to retain the fair value measurement applied by that investment entity associate or joint venture to the investment entity associate's or joint venture's interests in subsidiaries. This election is made separately for each investment entity associate or joint venture, at the later of the date on which (a) the investment entity associate or joint venture is initially recognized; (b) the associate or joint venture becomes an investment entity; and (c) the investment entity associate or joint venture first becomes a parent.

The amendments should be applied retrospectively and are effective from January 1, 2018, with earlier application permitted. If an entity applies those amendments for an earlier period, it must disclose that fact. The Group expects to adopt the amendments from January 1, 2018.

IFRS 12 Disclosure of Interests in Other Entities

The amendments clarify that the disclosure requirements in IFRS 12, other than those in paragraphs B10–B16, apply to an entity's interest in a subsidiary, a joint venture or an associate (or a portion of its interest in a joint venture or an associate) that is classified (or included in a disposal group that is classified) as held for sale. The amendments are effective from January 1, 2017 and must be applied retrospectively. The Group expects to adopt the amendments from January 1, 2017.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.4 Investments in joint ventures and associates

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

An associate is an entity over which the Group has significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the investee, but is not control or joint control over those policies.

The Group's investments in associates and joint ventures are accounted for using the equity method.

Under the equity method, the investment in an associate or a joint venture is initially recognized at cost. The carrying amount of the investment is adjusted to recognize changes in the Group's share of net assets of the associate or joint venture since the acquisition date. Goodwill relating to the associate or joint venture is included in the carrying amount of the investment, and tested for impairment each year end.

The consolidated statement of comprehensive income reflects the Group's share of the results of operations of the associate or joint venture. Any change in OCI of those investees is presented as part of the Group's OCI. In addition, when there has been a change recognized directly in the equity of the associate or joint venture, the Group recognizes its share of any changes, when applicable, in the consolidated statement of changes in equity. Unrealized gains and losses resulting from transactions between the Group and the associate or joint venture are eliminated to the extent of the interest in the associate or joint venture.

The aggregate of the Group's share of profit or loss of an associate and a joint venture is shown on the face of the statement of comprehensive income outside operating profit and represents profit or loss after tax and non-controlling interests in the subsidiaries of the associate or joint venture.

2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.4 Investments in joint ventures and associates (Continued)

The financial statements of the associate or joint venture are prepared for the same reporting period as the Group. When necessary, adjustments are made to bring the accounting policies in line with those of the Group.

After application of the equity method, the Group determines whether it is necessary to recognize an impairment loss on its investment in its associate or joint venture. At each reporting date, the Group determines whether there is objective evidence that the investment in the associate or joint venture is impaired. If there is such evidence, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate or joint venture and its carrying value, then recognizes the loss in profit or loss.

If an investment in an associate becomes an investment in a joint venture or vice versa, the retained interest is not remeasured. Instead, the investment continues to be accounted for under the equity method. In all other cases, upon loss of significant influence over the associate or joint control over the joint venture, the Group measures and recognizes any retained investment at its fair value. Any difference between the carrying amount of the associate or joint venture upon loss of significant influence or joint control and the fair value of the retained investment and the proceeds from disposal is recognized in profit or loss.

The Group's investments in associates and joint ventures are classified as non-current assets and are stated at cost less any impairment losses.The results of associates and joint ventures are included in the Group's profit or loss to the extent of dividends received and receivable.

When an investment in an associate or a joint venture is classified as held for sale, it is accounted for in accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations.

2.5 Segment reporting

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The chief operating decision-makers, who are responsible for allocating resources and assessing the performance of the operating segments, have been identified as the presidents of the Company that make strategic decisions.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.6 Related parties

A party is considered to be related to the Group if:

(a) the party is a person or a close member of that person's family and that person:

(i) has control or joint control over the Group;

(ii) has a significant influence over the Group; or

(iii) is a member of the key management personnel of the Group or of a parent of the Group;

or

(b) the party is an entity where any of the following conditions applies:

(i) the entity and the Group are members of the same group;

(ii) one entity is an associate or joint venture of the other entity (or of a parent, subsidiary or fellow subsidiary of the other entity);

(iii) the entity and the Group are joint ventures of the same third party;

(iv) one entity is a joint venture of a third entity and the other entity is an associate of the third entity;

(v) the entity is a post-employment benefit plan for the benefit of employees of either the Group or an entity related to the Group;

(vi) the entity is controlled or jointly controlled by a person identified in (a);

(vii) a person identified in (a) (i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity); and

(viii) the entity, or any member of a group of which it is a part, provides key management personnel services to the Group or to the parent of the Group.

2.7 Fair value measurement

The Group measures its derivative financial instruments and available-for-sale financial investments at fair value at the end of each reporting period. Also, the fair values of financial instruments measured at amortized cost are disclosed in note 37.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.7 Fair value measurement (Continued)

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability; or
- In the absence of a principal market, in the most advantageous market for the asset or liability.

The principal or the most advantageous market must be accessible by the Group. The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

Level 1 — Based on quoted (unadjusted) market prices in active markets for identical assets or liabilities

Level 2 — Based on valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable

Level 3 — Based on valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognized in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.8 Foreign currency translation

(a) Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the "functional currency"). The consolidated financial statements are presented in RMB, which is the Company's functional currency and the Group's presentation currency.

(b) Currency Translation for Financial Statements Presentation

Translations of amounts from RMB into US$ for the convenience of the reader have been calculated at the exchange rate of RMB6.9430 per US$1.00 on December 31, 2016, the last business day in fiscal year 2016, as published on the website of the United States Federal Reserve Board. No representation is made that the RMB amounts could have been, or could be, converted into U.S. dollars at such rate.

(c) Transactions and balances

Foreign currency transactions recorded by the entities in the Group are initially recorded using their respective functional currency rates prevailing at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are translated at the functional currency rates of exchange ruling at the end of the reporting period. Differences arising on settlement or translation of monetary items are recognized in the statement of profit or loss.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was measured. The gain or loss arising on translation of a non-monetary item measured at fair value is treated in line with the recognition of the gain or loss on change in fair value of the item.

(d) Group companies

The results and financial positions of all the Group entities (none of which has the currency of a hyper-inflationary economy) that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

(i) assets and liabilities in each statement of financial position presented are translated at the closing rates at the end of the reporting period;

(ii) income and expenses in each statement of comprehensive income are translated at average exchange rates (unless this average is not a reasonable approximation of the cumulative effect of the rates prevailing on the transaction dates, in which case income and expenses are translated at the rates at the dates of the transactions); and

(iii) all resulting exchange differences are recognized in other comprehensive income. Upon disposal of a foreign operation, the other comprehensive income related to the foreign operation is reclassified to profit or loss.

Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as assets and liabilities of the foreign entity and translated at the closing rate. Exchange differences arising are recognized in other comprehensive income.

## 2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

### 2.9 Property, plant and equipment

Property, plant and equipment, other than construction in progress, are stated at cost less accumulated depreciation and any impairment losses. When an item of property, plant and equipment is classified as held for sale or when it is part of a disposal group classified as held for sale, it is not depreciated and is accounted for in accordance with IFRS 5. The cost of an item of property, plant and equipment comprises its purchase price and any directly attributable costs of bringing the asset to its working condition and location for its intended use.

Expenditure incurred after items of property, plant and equipment have been put into operation, such as repairs and maintenance, is normally charged to the statement of comprehensive income in the period in which it is incurred. In situations where the recognition criteria are satisfied, the expenditure for a major inspection is capitalized in the carrying amount of the asset as a replacement. Where significant parts of property, plant and equipment are required to be replaced at intervals, the Group recognizes such parts as individual assets with specific useful lives and depreciates them accordingly.

Depreciation is calculated on the straight-line basis to write off the cost of each item of property, plant and equipment to its residual value over its estimated useful life. The principal annual rates used for this purpose are as follows:

| | |
|---|---|
| Buildings | 8 - 45 years |
| Machinery | 3 - 30 years |
| Transportation facilities | 6 - 10 years |
| Office and other equipment | 3 - 10 years |

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.9 Property, plant and equipment (Continued)

The assets' depreciation method, residual values and useful lives are reviewed and adjusted, if appropriate, at the end of each reporting period. An item of property, plant and equipment including any significant part initially recognized is derecognized upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss on disposal or retirement recognized in the statement of comprehensive income in the year the asset is derecognized is the difference between the net sales proceeds and the carrying amount of the relevant asset.

Construction in progress ("CIP") represents buildings under construction, and plant and equipment pending for installation, and is stated at cost less any impairment losses. Cost comprises construction expenditures, other expenditures necessary for the purpose of preparing the CIP for its intended use and those borrowing costs incurred before the asset is ready for its intended use that is eligible for capitalization. CIP is transferred to property, plant and equipment when the CIP is ready for its intended use.

2.10 Intangible assets

(a) Goodwill

Goodwill arises on the acquisition of subsidiaries, associates and joint ventures and represents the excess of the consideration transferred over the fair value of the Group's share of the net identifiable assets of the acquiree at the date of acquisition.

For the purpose of impairment testing, goodwill acquired in a business combination is allocated to each of the cash-generating units, or groups of cash-generating units, that is expected to benefit from the synergies of the combination. Each unit or group of units to which the goodwill is allocated represents the lowest level within the entity at which the goodwill is monitored for internal management purposes. Goodwill is monitored at the operating segment level.

Goodwill impairment reviews are undertaken annually or more frequently if events or changes in circumstances indicate a potential impairment. The carrying value of goodwill is compared to the recoverable amount, which is the higher of value in use and the fair value less costs of disposal. Any impairment is recognized immediately as an expense and is not subsequently reversed.

(b) Mining rights and mineral exploration rights

The Group's mineral exploration rights and mining rights relate to coal, bauxite and other mines.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.10 Intangible assets (Continued)

(b) Mining rights and mineral exploration rights (Continued)

(i) Recognition

Mineral exploration rights and mining rights are initially recorded at the cost which includes the acquisition consideration, qualifying exploration and other direct costs. The mineral exploration rights are stated at cost less any impairment, and the mining rights are stated at cost less any amortization and impairment.

(ii) Reclassification

Mineral exploration rights are converted to mining rights when technical feasibility and commercial viability of extracting a mineral resource are demonstrable. Mineral exploration rights are subject to amortization when the mineral exploration rights are converted to mining rights and commercial production has commenced.

The Group assesses the stage of each mine under construction to determine when a mine moves into the production stage. The criteria used to assess the start date are determined based on the unique nature of each mine construction project. The Group considers various relevant criteria, such as completion of a reasonable period of testing of the mine and equipment, ability to produce in saleable form (within specifications) and ability to sustain ongoing production to assess when a mine is substantially complete and ready for its intended use.

(iii) Amortization

Amortization of bauxite and other mining rights (except for coal mining rights) is provided on a straight-line basis according to the shorter of the expiration date of the mining certificate and the mineable period of natural resources. Estimated mineable periods of the majority of the mining rights range from 3 to 30 years.

Coal mining rights are amortized on a unit-of-production basis over the economically recoverable reserves evaluated based on the reserves estimated in accordance with the standards in the Solid Mineral Resource/Reserve Classification of the PRC (GB/T17766-1999) of the mine concerned.

(iv) Impairment

An impairment review is performed when there are indicators that the carrying amount of the mineral exploration rights and mining rights may exceed their recoverable amounts. To the extent that this occurs, the excess is fully provided as an impairment loss.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.10 Intangible assets (Continued)

(c) Computer software

Acquired computer software licenses are capitalized on the basis of the costs incurred to acquire and bring to use the specific software. These costs are amortized over their estimated useful lives, which do not exceed 10 years. Costs associated with maintaining computer software programmes are recognized as an expense as incurred.

(d) Other intangible assets

Other intangible assets mainly include profit sharing right of Maochang mine, which are initially recorded at costs incurred to acquire the specific right. Amortization is calculated on the straight-line basis over its estimated useful life. The estimated useful live of profit sharing right of Maochang mine is 22.5 years.

(e) Periodic review of the useful lives and amortization method

For intangible assets with finite useful lives, the estimated useful lives and amortization method are reviewed annually at the end of each reporting period and adjusted when necessary.

2.11 Research and development costs

Research and development expenditures are classified as research expenditures and development expenditures according to the nature of the expenditures and whether there is significant uncertainty of development activities transforming to assets.

Research expenditures are recognized in profit or loss for the current period. Development expenditures are recognized as assets when all of the following criteria are met:

(i) it is technically feasible to complete the asset so that it will be available for use or sale;

(ii) management intends to complete the asset and intends and has the ability to use or sell it;

(iii) it can be demonstrated that the asset will generate probable future economic benefits;

(iv) there are adequate technical, financial and other resources to complete the development of the asset and management has the ability to use or sell the asset; and

(v) the expenditure attributable to the asset during its development phase can be reliably measured.

Development expenditures that do not meet the criteria above are recorded in profit or loss for the current period as incurred. Development expenditures that have been recorded in profit or loss in previous periods will be not recognized as assets in subsequent periods. Capitalized development expenditures are included in property, plant and equipment and intangible assets as appropriate according to their natures.

2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.12 Impairment of non-financial assets

Where an indication of impairment exists, or when annual impairment testing for an asset is required (for example goodwill or intangible assets not ready to use), the asset's recoverable amount is estimated. An asset's recoverable amount is the higher of the asset's or cash-generating unit's value in use and its fair value less costs of disposal, and is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets, in which case the recoverable amount is determined for the cash-generating unit to which the asset belongs.

An impairment loss is recognized only if the carrying amount of an asset exceeds its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. An impairment loss is charged to profit or loss in the period in which it arises in those expense categories consistent with the function of the impaired asset.

An assessment is made at the end of each reporting period as to whether there is an indication that previously recognized impairment losses may no longer exist or may have decreased. If such an indication exists, the recoverable amount is estimated. A previously recognized impairment loss of an asset other than goodwill is reversed only if there has been a change in the estimates used to determine the recoverable amount of that asset, but not to an amount higher than the carrying amount that would have been determined (net of any depreciation/amortization) had no impairment loss been recognized for the asset in prior years. A reversal of such an impairment loss is credited to profit or loss in the period in which it arises.

2.13 Investment properties

Investment properties are interests in land and buildings (including the leasehold interest under an operating lease for a property which would otherwise meet the definition of an investment property) held to earn rental income and/or for capital appreciation, rather than for use in the production or supply of goods or services or for administrative purposes; or for sale in the ordinary course of business. Such properties are measured initially at cost, including transaction costs. After initial recognition, the Group uses the cost model to measure all of its investment properties.

Depreciation is calculated on the straight-line basis to write off the cost to investment property's residual value over its estimated useful life. The estimated useful lives are as follows:

| | |
|---|---|
| Buildings | 50 years |
| Land use right | 40-70 years |

The carrying amounts of investment properties measured using the cost method are reviewed for impairment when events or changes in circumstances indicate that the carrying amounts may not be recoverable.

Any gains or losses on the retirement or disposal of an investment property are recognized in profit or loss in the year of the retirement or disposal.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.14 Non-current assets and disposal groups held for sale

Non-current assets and disposal groups are classified as held for sale if their carrying amounts will be recovered principally through a sales transaction rather than through continuing use. For this to be the case, the asset or disposal group must be available for immediate sale in its present condition subject only to terms that are usual and customary for the sale of such assets or disposal groups and its sale must be highly probable. All assets and liabilities of a subsidiary classified as a disposal group are reclassified as held for sale regardless of whether the Group retains a non-controlling interest in its former subsidiary after the sale.

Non-current assets and disposal groups (other than financial assets) classified as held for sale are measured at the lower of their carrying amounts and fair values less costs to sell. Property, plant and equipment and intangible assets classified as held for sale are not depreciated or amortized.

2.15 Financial assets

(a) Classification

The Group classifies its financial assets in the following categories: at fair value through profit or loss, loans and receivables and available-for-sale financial investments. The classification depends on the purpose for which the financial assets were acquired. Management determines the classification of its financial assets at initial recognition.

(i) Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss include financial assets held for trading and financial assets designated upon initial recognition as at fair value through profit or loss. Financial assets are classified as held for trading if they are acquired for the purpose of sale in the near term. Derivatives, including separated embedded derivatives, are also classified as held for trading unless they are designated as effective hedging instruments as defined by IAS 39.

Financial assets at fair value through profit or loss are carried in the statement of financial position at fair value with positive net changes in fair value presented as other income and gains and negative net changes in fair value presented as finance costs in the statement of profit or loss. These net fair value changes do not include any dividends or interest earned on these financial assets, which are recognized in accordance with the policies set out for "Revenue recognition" below.

Financial assets designated upon initial recognition as at fair value through profit or loss are designated at the date of initial recognition and only if the criteria in IAS 39 are satisfied.

Derivatives embedded in host contracts are accounted for as separate derivatives and recorded at fair value if their economic characteristics and risks are not closely related to those of the host contracts and the host contracts are not held for trading or designated as at fair value through profit or loss. These embedded derivatives are measured at fair value with changes in fair value recognized in profit or loss.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.15 Financial assets (Continued)

(a) Classification (Continued)

(i) Financial assets at fair value through profit or loss (Continued)

Reassessment only occurs if there is either a change in the terms of the contract that significantly modifies the cash flows that would otherwise be required or a reclassification of a financial asset out of the fair value through profit or loss category.

(ii) Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. After initial measurement, such assets are subsequently measured at amortized cost using the effective interest rate method less any allowance for impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition and includes fees or costs that are an integral part of the effective interest rate. The effective interest rate amortization is included in other income and gains in the statement of profit or loss. The loss arising from impairment is recognized in profit or loss in finance costs for loans and in other expenses for receivables.

(iii) Available-for-sale financial investments

Available-for-sale financial investments are non-derivative financial assets in listed and unlisted equity investments and debt securities. Equity investments classified as available for sale are those which are neither classified as held for trading nor designated as at fair value through profit or loss. Debt securities in this category are those which are intended to be held for an indefinite period of time and which may be sold in response to needs for liquidity or in response to changes in market conditions.

After initial recognition, available-for-sale financial investments are subsequently measured at fair value, with unrealized gains or losses recognized as other comprehensive income in the available-for-sale investment revaluation reserve until the investment is derecognized, at which time the cumulative gain or loss is recognized in profit or loss in other income, or until the investment is determined to be impaired, when the cumulative gain or loss is reclassified from the available-for-sale investment revaluation reserve to profit or loss in other gains or losses. Interest and dividends earned whilst holding the available-for-sale financial investments are reported as interest income and dividend income, respectively and are recognized in profit or loss as other income in accordance with the policies set out for "Interest income" and "Dividend income" below.

2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.15 Financial assets (Continued)

(a) Classification (Continued)

(iii) Available-for-sale financial investments (Continued)

When the fair value of unlisted equity investments cannot be reliably measured because (a) the variability in the range of reasonable fair value estimates is significant for that investment or (b) the probabilities of the various estimates within the range cannot be reasonably assessed and used in estimating fair value, such investments are stated at cost less any impairment losses.

The Group evaluates whether the ability and intention to sell its available-for-sale financial assets in the near term are still appropriate. When, in rare circumstances, the Group is unable to trade these financial assets due to inactive markets, the Group may elect to reclassify these financial assets if management has the ability and intention to hold the assets for the foreseeable future or until maturity.

For a financial asset reclassified from the available-for-sale category, the fair value carrying amount at the date of reclassification becomes its new amortized cost and any previous gain or loss on that asset that has been recognized in equity is amortized to profit or loss over the remaining life of the investment using the effective interest rate. Any difference between the new amortized cost and the maturity amount is also amortized over the remaining life of the asset using the effective interest rate. If the asset is subsequently determined to be impaired, then the amount recorded in equity is reclassified to profit or loss.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.15 Financial assets (Continued)

(b) Recognition and measurement

All regular purchases and sales of financial assets are recognized on the trade date, that is the date that the Group commits to purchase or sell the asset. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the period generally established by regulation or convention in the marketplace. Investments are initially recognized at fair value plus transaction costs, except in the case of financial assets recorded at fair value through profit or loss. Financial assets carried at fair value through profit or loss are initially recognized at fair value and transaction costs are expensed in profit or loss. Financial assets are derecognized when the rights to receive cash flows from the investments have expired or have been transferred and the Group has transferred substantially all risks and rewards of ownership. Available-for-sale financial investments and financial assets at fair value through profit or loss are subsequently carried at fair value. Loans and receivables are subsequently carried at amortized cost using the effective interest method.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.15 Financial assets (Continued)

(c) Derecognition of financial assets

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is primarily derecognized (i.e. removed from the Group's consolidated statement of financial position) when:

· the rights to receive cash flows from the asset have expired; or

· the Group has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a "pass-through" arrangement; and either (a) the Group has transferred substantially all the risks and rewards of the asset, or (b) the Group has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

When the Group has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement, it evaluates if and to what extent it has retained the risk and rewards of ownership of the asset. When it has neither transferred nor retained substantially all the risks and rewards of the asset nor transferred control of the asset, the Group continues to recognize the transferred asset to the extent of the Group's continuing involvement. In that case, the Group also recognizes an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Group has retained.

Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that the Group could be required to repay.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.15 Financial assets (Continued)

(d) Impairment of financial assets

The Group assesses at the end of each reporting period whether there is objective evidence that a financial asset or a group of financial assets is impaired. An impairment exists if one or more events that occurred after the initial recognition of the asset have an impact on the estimated future cash flows of the financial asset or the group of financial assets that can be reliably estimated. Evidence of impairment may include indications that a debtor or a group of debtors is experiencing significant financial difficulty, default or delinquency in interest or principal payments, the probability that they will enter bankruptcy or other financial reorganization and observable data indicating that there is a measurable decrease in the estimated future cash flows, such as changes in arrears or economic conditions that correlate with defaults.

Financial assets carried at amortized cost

For financial assets carried at amortized cost, the Group first assesses whether impairment exists individually for financial assets that are individually significant, or collectively for financial assets that are not individually significant. If the Group determines that no objective evidence of impairment exists for an individually assessed financial asset, whether significant or not, it includes the asset in a group of financial assets with similar credit risk characteristics and collectively assesses them for impairment. Assets that are individually assessed for impairment and for which an impairment loss is, or continues to be, recognized are not included in a collective assessment of impairment.

The amount of any impairment loss identified is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not yet been incurred). The present value of the estimated future cash flows is discounted at the financial asset's original effective interest rate (i.e., the effective interest rate computed at initial recognition).

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.15 Financial assets (Continued)

(d) Impairment of financial assets (Continued)

Financial assets carried at amortized cost (Continued)

The carrying amount of the asset is reduced through the use of an allowance account and the loss is recognized in the statement of profit or loss.  Interest income continues to be accrued on the reduced carrying amount using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss. Loans and receivables together with any associated allowance are written off when there is no realistic prospect of future recovery and all collateral has been realized or has been transferred to the Group.

If, in a subsequent period, the amount of the estimated impairment loss increases or decreases because of an event occurring after the impairment was recognized, the previously recognized impairment loss is increased or reduced by adjusting the allowance account.  If a write-off is later recovered, the recovery is credited to other expenses in profit or loss.

Available-for-sale financial investments

For available-for-sale financial investments, the Group assesses at the end of each reporting period whether there is objective evidence that an investment or a group of investments is impaired.

If an available-for-sale asset is impaired, an amount comprising the difference between its cost (net of any principal payment and amortization) and its current fair value, less any impairment loss previously recognized in the statement of profit or loss, is removed from other comprehensive income and recognized in profit or loss.

In the case of equity investments classified as available-for-sale financial investments, a significant or prolonged decline in the fair value of the security below its cost is considered as an indicator that the securities are impaired. If any such evidence exists for available-for-sale financial investments, the cumulative loss — measured as the difference between the acquisition cost and the current fair value, less any impairment loss on that financial asset previously recognized in the statement of comprehensive income — is removed from other comprehensive income and recognized in profit or loss. Impairment losses recognized in profit or loss on equity instruments are not reversed through profit or loss.

2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.15 Financial assets (Continued)

(d) Impairment of financial assets (Continued)

Available-for-sale financial investments (Continued)

The determination of what is "significant" or "prolonged" requires judgement. In making this judgement, the Group evaluates, among other factors, the duration or extent to which the fair value of an investment is less than its cost.

In the case of debt instruments classified as available for sale, impairment is assessed based on the same criteria as financial assets carried at amortized cost. However, the amount recorded for impairment is the cumulative loss measured as the difference between the amortized cost and the current fair value, less any impairment loss on that investment previously recognized in profit or loss. Future interest income continues to be accrued based on the reduced carrying amount of the asset and is accrued using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss. The interest income is recorded as part of finance income. Impairment losses on debt instruments are reversed through profit or loss if the subsequent increase in fair value of the instruments can be objectively related to an event occurring after the impairment loss was recognized in profit or loss.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.16 Financial liabilities

(a) Initial recognition and measurement

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, or as derivatives designated as hedging instruments in an effective hedge, as appropriate.

All financial liabilities are recognized initially at fair value plus, in the case of loans and borrowings, directly attributable transaction costs.

The Group's financial liabilities include financial liabilities at fair value through profit or loss and loans and borrowings.

(b) Subsequent measurement

The subsequent measurement of financial liabilities depends on their classification as follows:

Loans and borrowings

After initial recognition, loans and borrowings are subsequently measured at amortized cost, using the effective interest rate method unless the effect of discounting would be immaterial, in which case they are stated at cost. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the effective interest rate amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the effective interest rate. The effective interest rate amortization is included in finance costs in profit or loss.

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss.

Financial liabilities are classified as held for trading if they are acquired for the purpose of repurchasing in the near term. This category includes derivative financial instruments entered into by the Group that are not designated as hedging instruments in hedge relationships as defined by IAS 39. Separated embedded derivatives are also classified as held for trading unless they are designated as effective hedging instruments. Gains or losses on liabilities held for trading are recognized in profit or loss. The net fair value gain or loss recognized in profit or loss does not include any interest charged on these financial liabilities.

Financial liabilities designated upon initial recognition at fair value through profit or loss are designated at the date of initial recognition and only if the criteria of IAS 39 are satisfied.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.16 Financial liabilities (Continued)

(b) Subsequent measurement (Continued)

The subsequent measurement of financial liabilities depends on their classification as follows: (Continued)

Financial guarantee contracts

Financial guarantee contracts issued by the Group are those contracts that require a payment to be made to reimburse the holder for a loss it incurs because the specified debtor fails to make a payment when due in accordance with the terms of a debt instrument. A financial guarantee contract is recognized initially as a liability at its fair value, adjusted for transaction costs that are directly attributable to the issuance of the guarantee. Subsequent to initial recognition, the Group measures the financial guarantee contract at the higher of: (i) the amount of the best estimate of the expenditure required to settle the present obligation at the end of the reporting period; and (ii) the amount initially recognized less, when appropriate, cumulative amortization.

(c) Derecognition of financial liabilities

A financial liability is derecognized when the obligation under the liability is discharged or cancelled, or expires.

When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and a recognition of a new liability, and the difference between the respective carrying amounts is recognized in profit or loss.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.17 Offsetting financial instruments

Financial assets and liabilities are offset and the net amount reported in the statement of financial position when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the asset and settle the liability simultaneously.

2.18 Derivative financial instruments

Initial recognition and subsequent measurement

The Group uses derivative financial instruments, such as forward currency contracts and interest rate swaps, to hedge its foreign currency risk and interest rate risk, respectively. Such derivative financial instruments are initially recognized at fair value on the date on which a derivative contract is entered into and are subsequently remeasured at fair value. Derivatives are carried as assets when the fair value is positive and as liabilities when the fair value is negative.

Any gains or losses arising from changes in fair value of derivatives are taken directly to profit or loss, except for the effective portion of cash flow hedges, which is recognized in other comprehensive income and later reclassified to profit or loss when the hedged item affects profit or loss.

2.19 Inventories

Inventories comprise raw materials, work-in-progress, finished goods, spare parts and packaging materials and others, and are stated at the lower of cost and net recoverable amount. Cost is determined using the weighted average method. Work-in-progress and finished goods comprise materials, direct labour and an appropriate proportion of all production overhead expenditure (based on the normal operating capacity). Borrowing costs are excluded.

Provision for impairment of inventories is usually determined by the excess of cost over net recoverable amount and recorded in profit or loss. Net recoverable amounts are determined based on the estimated selling price less estimated conversion costs, selling expenses and related taxes in the ordinary course of business. Provision for or reversal of provision for impairment of inventories is recognized within "cost of sales" in profit or loss.

2.20 Trade and notes receivables and other receivables

Trade and notes receivables and other receivables are amounts due from customers for merchandize sold or services performed in the ordinary course of business. If collection of these receivables is expected in one year or less (or in the normal operating cycle of the business if longer), they are classified as current assets.

Trade and notes receivables and other receivables are recognized initially at fair value and subsequently measured at amortized cost using the effective interest method, less provision for impairment.

2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.21 Cash and cash equivalents

For the purpose of the consolidated statement of cash flows, cash and cash equivalents comprise cash on hand and demand deposits, and short term highly liquid investments that are readily convertible into known amounts of cash, are subject to an insignificant risk of changes in value, and have a short maturity of generally within three months when acquired, less bank overdrafts which are repayable on demand and form an integral part of the Group's cash management.

For the purpose of the consolidated statement of financial position, cash and cash equivalents comprise cash on hand and at banks, including term deposits, and assets similar in nature to cash, which are not restricted as to use.

2.22 Other income

Other income mainly includes government grants, which are recognized when the Group fulfils the conditions attached to them and there is reasonable assurance that the grant will be received. When the government grant is in the form of monetary assets, it is measured at the actual amount received. When the grant is provided based on a pre-determined rate, it is measured at the fair value of the amount receivable.

Asset-related government grants are recognized when the government document designates that the government grants are used for constructing or forming long-term assets. If the government document is inexplicit, the Group should make a judgement based on the basic conditions to obtain the government grants, and recognizes them as asset-related government grants if the conditions are to construct or to form long-term assets. Otherwise, the government grants should be income-related.

Asset-related government grants are recognized as deferred income and are amortized evenly in profit or loss over the useful lives of the related assets.

Income-related government grants that are used to compensate subsequent related expenses or losses of the Group are recognized as deferred income and recorded in profit or loss when the related expenses or losses are incurred. When the grants are used to compensate expenses or losses that were already incurred, they are directly recognized in profit or loss for the current period.

2.23 Trade and notes payables and other payables

Trade and notes payables and other payables are mainly obligations to pay for goods, equipment or services that have been acquired in the ordinary course of business from suppliers and service providers. These payables are classified as current liabilities if they are due within one year or less (or in the normal operating cycle of the business if longer).

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.24 Employee benefits

Employee benefits mainly include salaries, bonuses, allowances and subsidies, pension insurance, social insurance and housing funds, labour union fees, employees' education fees and other expenses related to the employees for their services. The Group recognizes employee benefits as liabilities during the accounting period when employees rendered the services and allocates the related cost of assets and expenses based on different beneficiaries.

(a) Bonus plans

The expected cost of bonus plans is recognized as a liability when the Group has a present legal or constructive obligation as a result of services rendered by employees and a reliable estimate of the obligation can be made.

(b) Retirement benefit obligations

The Group primarily pays contributions on a monthly basis to participate in a pension plan organized by the relevant municipal and provincial governments in the PRC. In 2016, the Group made monthly contributions at the rate of 20% (2015: 20%) of the qualified employees' salaries. The municipal and provincial governments undertake to assume the retirement benefit obligations of all existing and future retired employees payable under these plans. The Group has no legal or constructive obligations for further contributions if the fund does not hold sufficient assets to pay all employees the benefit relating to their current and past services.

(c) Other social insurance and housing funds

The Group provides other social insurance and housing funds to the qualified employees in the PRC based on certain percentages of their salaries. These percentages are not to exceed the upper limits of the percentages prescribed by the Ministry of Human Resources and Social Security of the PRC. These benefits are paid to social security organizations and the amounts are expensed as incurred. The Group has no legal or constructive obligations for further contributions if the fund does not hold sufficient assets to pay all employees the benefit relating to their current and past services.

(d) Termination benefit obligations and early retirement benefit obligations

Termination and early retirement benefit obligations are payable when employment is terminated by the Group before the normal retirement date, or whenever an employee accepts voluntary redundancy and/or early retirement in exchange for these benefits. The Group recognizes termination and early retirement benefit obligations when it is demonstrably committed to either: terminating the employment of current employees according to a detailed formal plan without possibility of withdrawal; or providing termination benefits as a result of an offer made to encourage voluntary redundancy and/or early retirement. The specific terms vary among the terminated and early retired employees depending on various factors including position, length of service and district of the employees concerned. Benefits falling due for more than 12 months after the end of the reporting period are discounted to their present values.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.25 Current and deferred income tax

The income tax expense for the period comprises current and deferred tax. Share of income tax expense of joint ventures and associates are included in "share of profits and loss of joint ventures and associates". Income tax expense is recognized in profit or loss except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, the tax is also recognized in other comprehensive income or directly in equity, respectively.

The current income tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period in the countries where the Company and its subsidiaries operate and generate taxable income. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax is provided using the liability method on all temporary differences at the end of reporting period between tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, deferred tax liabilities are not recognized if they arise from the initial recognition of goodwill; the deferred tax is not accounted for if it arises from the initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss. Deferred tax is determined using tax rates (and laws) that have been enacted or substantively enacted at the end of the reporting period and are expected to apply when the related deferred tax asset is realized or the deferred tax liability is settled.

Deferred tax assets are recognized for all deductible temporary differences, the carrying forward of unused tax losses and tax credits. Deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the temporary differences, the carry forward of unused tax losses and unused tax credits can be utilized.

Deferred tax liability is provided for all taxable temporary differences arising on investments in subsidiaries, joint ventures and associates, except where the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.26 Perpetual securities

Perpetual securities are classified as equity if they are non-redeemable, or redeemable only at the issuer's option, and any interests and distributions are discretionary. Interests and distributions on perpetual securities classified as equity are recognized as distributions within equity.

The perpetual securities issued by the Company are recognized as other equity instruments, and the perpetual securities issued by subsidiary of the Company are recognized as non-controlling interests.

2.27 Revenue recognition

The Group recognizes revenue when the amount of revenue can be reliably measured, it is probable that future economic benefits will flow to the Group and when specific criteria have been met for each of the Group's activities (see descriptions below).

(a) Sales of goods

Revenue from the sales of goods is recognized when the Group has already transferred the significant risks and rewards of ownership of the goods to the buyers, the Group has retained neither continuing managerial involvement nor control over the goods, it is probable that the economic benefits related to the transaction will flow into the Group, and the revenue and related costs incurred can be measured reliably.

If the Group is acting solely as an agent, amounts billed to customers are offset against the relevant costs, and the related revenue is reported on a net basis.

(b) Rendering of services

The Group provides machinery processing, transportation and packaging services and other services to third party customers. These services are recognized in the period when the related services are provided.

2.28 Interest income

Interest income is recognized using the effective interest method. When a loan or receivable is impaired, the Group reduces the carrying amount to its recoverable amount, being the estimated future cash flows discounted at the original effective interest rate of the instrument, and continues unwinding the discount as interest income. Interest income on impaired loans and receivables is recognized using the original effective interest rate.

2.29 Dividend income

Dividend income is recognized when the right to receive payment is established.

## 2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

### 2.30 Leases

The determination of whether an arrangement is, or contains, a lease is based on the substance of the arrangement at the inception date. The arrangement is assessed for whether fulfilment of the arrangement is dependent on the use of a specific asset or assets or the arrangement conveys a right to use the asset or assets, even if that right is not explicitly specified in an arrangement.

Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to profit or loss on a straight-line basis over the period of the lease.

The Group leases certain land use rights and property, plant and equipment. Land use rights and property, plant and equipment where the Group has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalized at the lease's commencement at the lower of the fair value of the leased land use rights and the present value of the minimum lease payments.

Each lease payment is allocated between the liability and finance charges. The corresponding rental obligations, net of finance charges, are included in other long-term payables. The interest element of the finance costs is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The property, plant and equipment acquired under finance leases are depreciated over the shorter of the useful life of the asset and the lease term.

Regarding the sale and leaseback agreements, the Group treats the sale and leaseback transactions as finance leases, the difference between the carrying amount and the consideration will be deferred and recognized in profit or loss during the useful lives of relevant assets as an adjustment of depreciation expense.

### 2.30 Borrowing costs

General and specific borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization.

All other borrowing costs are recognized in profit or loss in the period in which they are incurred. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds.

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2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES (Continued)

2.32 Dividend distribution

Dividend distribution to the Company's shareholders is recognized as a liability in the Group's and Company's financial statements in the period in which the dividends are approved by the Company's shareholders.

2.33 Provisions

A provision is recognized when a present obligation (legal or constructive) has arisen as a result of a past event and it is probable that a future outflow of resources will be required to settle the obligation, provided that a reliable estimate can be made of the amount of the obligation.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation using a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the obligation. The increase in the provision due to the passage of time is recognized as interest expense.

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3. SIGNIFICANT ACCOUNTING ESTIMATES AND JUDGEMENTS

The preparation of the Group's consolidated financial statements requires management to make judgements, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the accompanying disclosures, and the disclosure of contingent liabilities. Uncertainty about these judgements, assumptions and estimates could result in outcomes that require a material adjustment to the carrying amounts of assets or liabilities affected in future periods.

Judgements

In the process of applying the Group's accounting policies and preparing the Group's consolidated financial statements, management has made the following judgements, apart from those involving estimates, which have significant effect on the amounts recognized in the consolidated financial statements.

(a) Significant influence over an entity in which the Group holds less than 20% of voting rights

At December 31, 2015 and 2016, the Group owned a 15% equity interest of Chalco Mineral Resources Co. Ltd. ("Chalco Resources") (" 礦產資源 "). The Group considers that it has significant influence over Chalco Resources even though it owns less than 20% of the voting rights, on the grounds that the Group can appoint one out of the five directors of the board of directors of Chalco Resources.

At December 31, 2015 and 2016, the Group owned a 14.62% equity interest of China Rare Earth Co., Ltd. ("China Rare Earth") (" 稀 稀土 "). The Company considers that it has significant influence over China Rare Earth even though it owns less than 20% of the voting rights, on the grounds that the Group can appoint one out of the seven directors of the board of directors of China Rare Earth.

Prior to December 31, 2015, the Group owned a 15% equity interest of ABC-CA Fund Management Co., Ltd. ("ABC-CA") (農銀匯理基金管理 ). The Company considers that it has significant influence over ABC-CA even though it owns less than 20% of the voting rights, on the grounds that the Company can nominate one out of the nine directors of the board of directors of ABC-CA.

At December 31, 2016, the Group owned 17.7% of the voting right of Chinalco Capital Holdings Co., Ltd.* (" 資本控 ") ("Chinalco Capital"). The Group considers that it has significant influence over Chinalco Capital since it can appoint one out of three directors of the board of directors of Chinalco Capital.

At December 31, 2016, the Group owned a 16% equity interest of Baise New Aluminum Power Co., Ltd. * ("New Aluminum Power") ("百色新 電力 "). The Group considers that the Group has significant influence over New Aluminum Power even though it owns less than 20% of the voting rights, on the grounds that the Group can appoint one out of the nine directors of the board of directors of New Aluminum Power.

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3. SIGNIFICANT ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Judgements (Continued)

(b) Entity in which the Group holds more than a majority of voting rights that is not subject to consolidation

In April 2015, Ningxia Energy and Zhejiang Power Group Co., Ltd. *("Zhejiang Power") (浙江省能源 ) jointly established Ningxia Yinxing Power Co., Ltd. *("Yinxing Power") (寧夏銀星發電 責任 ). The registered capital of Yinxing Power is RMB800 million, of which Ningxia Energy and Zhejiang Power contributed 51% and 49%, respectively. Ningxia Energy can appoint four out of the seven directors of the board of directors. According to the articles of association of Yinxing Power, most of the resolutions of both shareholders' meeting and board of directors require more than two-thirds of the votes for passing. Accordingly, the directors of the Company consider that Ningxia Energy and Zhejiang Energy have joint control over Yinxing Power, which is accounted for as a joint venture.

(c) Consolidation of entities in which the Group holds less than a majority of voting rights

In December 2016, Yinxing Energy issued shares non-publicly and the equity interest of the Group in Yinxing Energy was diluted to 40.44%. Since the remaining 59.56% of the equity shares in Yinxing Energy are held by large number of individual shareholders, in opinion of the directors of the Company, the Group has control over Yinxing Energy, and Yinxing Energy continues to be included in the consolidation scope.

The Group had 50% equity interest in Shanxi China Huarun Co., Ltd.* (Shanxi Huarun)(" 潤 "). According the acting-in-concert agreement entered into by the Group and the other shareholder of Shanxi Huarun, Huarun (Coal) Group Co., Ltd. *(Huarun (Coal) Group)(" 潤（煤 ） "), Huarun (Coal) Group will exercise the shareholders vote in concert with the Group. Accordingly, the directors of the Company consider that the Group had control over Shanxi Huarun and included Shanxi Huarun in the consolidation scope.

(d) Lease classification

As disclosed in note 22, the Group has entered into several sales and lease back agreements with third party leasing companies and related party leasing companies. The Group assessed the terms in the agreements and considered that the Group had substantially all the risks and rewards of ownership and treated them as finance leases.

*The English name represents the best effort made by the management of the Group in translating its Chinese name as it does not have any official English names.

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3. SIGNIFICANT ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Estimates and assumptions

The key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are described below. The Group's assumptions and estimates are based on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

(a) Property, plant and equipment and intangible assets- recoverable amount

In accordance with the Group's accounting policy, each asset or cash-generating unit is evaluated in every reporting period to determine whether there are any indications of impairment. If any such indication exists, an estimate of the recoverable amount is performed and an impairment loss is recognized to the extent that the carrying amount exceeds the recoverable amount. The recoverable amount of an asset or cash-generating unit of assets is measured at the higher of fair value less costs of disposal and value in use.

Fair value is determined as the amount that would be obtained from the sale of the asset in an arm's length transaction between knowledgeable and willing parties.

Value in use is also generally determined as the present value of the estimated future cash flows of those expected to arise from the continued use of the asset in its present form and its eventual disposal. Present values are determined using a risk-adjusted pre-tax discount rate appropriate to the risks inherent in the asset. Future cash flow estimates are based on expected production and sales volumes, selling prices (considering current and historical prices, price trends and related factors) and operating costs. This policy requires management to make these estimates and assumptions which are subject to risk and uncertainty; hence there is a possibility that changes in circumstances will alter these projections, which may impact on the recoverable amounts of the assets. In such circumstances, some or all of the carrying value of the assets may be impaired and the impairment would be charged against profit or loss.

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3. SIGNIFICANT ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Estimates and assumptions (Continued)

(b) Property, plant and equipment and intangible assets- estimated useful lives and residual values

The Group's management determines the estimated useful lives and residual values (if applicable) and consequently the related depreciation/amortization charges for its property, plant and equipment and intangible assets. These estimates are based on the historical experience of the actual useful lives of property, plant and equipment of similar nature and functions, or based on value-in-use calculations or market valuations according to the estimated periods that the Group intends to derive future economic benefits from the use of intangible assets. Management will increase the depreciation/ amortization charge where useful lives are less than previously estimated, and it will write off or write down technically obsolete or non-strategic assets that have been abandoned or sold.

Actual economic lives may differ from estimated useful lives and actual residual values may differ from estimated residual values. Periodic review could result in change in depreciable lives and residual values and therefore change in depreciation/amortization expense in future periods.

(c) Estimated impairment of trade and other receivables and inventories

A provision for impairment of trade and other receivables is established when there is objective evidence that the Group will not be able to collect all amounts due according to the original repayment terms of the receivables. Significant financial difficulties of the debtor, probability that the debtor will enter bankruptcy or financial reorganization, and default or delinquency in payments are considered as indicators that a trade receivable is impaired. The amount of provision is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the original effective interest rate. Cash flows relating to trade and other receivables are discounted if the effect of discounting is material. The carrying amount of the asset is reduced through the use of an allowance account and the amount of the loss is recognized in profit or loss. When a trade and other receivable is uncollectible, it is written off against the allowance account for trade and other receivables. Subsequent recoveries of amounts previously written off are recognized as income in profit or loss. The impairment is subject to management's assessment at the end of the reporting period, and hence, the provision amount is subject to uncertainty.

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3. SIGNIFICANT ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Estimates and assumptions (Continued)

(c) Estimated impairment of trade and other receivables and inventories (Continued)

In accordance with the Group's accounting policy, the Group's management tests whether inventories suffered any impairment based on estimates of the net recoverable amount of the inventories. For different types of inventories, it requires the estimation on selling prices, costs of conversion, selling expenses and related tax expense to calculate the net recoverable amount of inventories. For inventories held for executed sales contracts, management estimates the net recoverable amount based on the contracted price; for other inventories, management estimates the realisable future price based on the actual prices during the period from the end of the reporting period to the date that these financial statements were approved for issue by the board of directors of the Company and takes into account the nature and balance of inventories and future estimated price trends. For raw materials and work-in-progress, management has established a model in estimating the net recoverable amount at which the inventories can be realized in the normal course of business after considering the Group's manufacturing cycles, production capacity and forecasts, estimated future conversion costs and selling prices. Management also takes into account the price or cost fluctuations and other related matters occurring after the end of the reporting period which reflect conditions that existed at the end of the reporting period.

It is reasonably possible that if there is a significant change in circumstances including the Group's business and the external environment, outcomes within the next financial year would be significantly affected.

(d) Coal reserve estimates and units-of-production depreciation for coal mining rights

External qualified valuation professionals evaluate "economically recoverable reserves" based on the reserves estimated by external qualified exploration engineers in accordance with the PRC standards. The estimates of coal reserves are inherently imprecise and represent only the approximate amounts of the coal reserves because of the subjective judgements involved in developing such information. Economically recoverable reserve estimates are evaluated on a regular basis and have taken into account recent production and technical information about each mine.

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3. SIGNIFICANT ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Estimates and assumptions (Continued)

(e) Income tax

The Group estimates its income tax provision and deferred income taxation in accordance with the prevailing tax rules and regulations, taking into account any special approvals obtained from the relevant tax authorities and any preferential tax treatment to which it is entitled in each location or jurisdiction in which the Group operates. There are many transactions and calculations for which the ultimate tax determination is uncertain during the ordinary course of business. The Group recognizes liabilities for anticipated tax audit issues based on estimates of whether additional taxes will be due. Where the final tax outcome of these matters is different from the amounts that were initially recorded, the differences will impact on the income tax and deferred income tax provisions in the period in which the determination is made.

Deferred tax assets are recognized for unused tax losses and deductible temporary differences, such as provision for impairment of receivables, inventories and property, plant and equipment and accruals of expenses not yet deductible for tax purposes, to the extent that it is probable that taxable profits will be available against which the losses deductible temporary difference can be utilized. Significant management judgement is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and level of future taxable profits together with future tax planning strategies.

An entity shall recognize a deferred tax liability for all taxable temporary differences associated with investments in subsidiaries, associates and joint ventures, except to the extent that both of the following conditions are satisfied:

· the parent, investor or joint venturer is able to control the timing of the reversal of the temporary difference; and

· it is probable that the temporary difference will not reverse in the foreseeable future.

ALUMINUM CORPORATION OF CHINA LIMITED
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3. SIGNIFICANT ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Estimates and assumptions (Continued)

(e) Income tax (Continued)

As at December 31, 2015 and 2016, the Group recognized the deferred tax liabilities for the taxable temporary differences associated with investments in an overseas subsidiary. Apart from that, the Group believes that the taxable temporary differences associated with investments in all other subsidiaries, associates and joint ventures satisfy the above criteria and therefore, relevant deferred tax liabilities were not recognized as disclosed in note 11 to the financial statements.

The Group considers it has recorded adequate current tax provision and deferred income taxes based on the prevailing tax rules and regulations and its current best estimates and assumptions. In the event that future tax rules and regulations or related circumstances change, adjustments to current and deferred income taxation may be necessary which would impact on the Group's results or financial position.

(f) Goodwill - recoverable amount

In accordance with the Group's accounting policy, goodwill is allocated to the Group's operating segments as it represents the lowest level within the Group at which the goodwill is monitored for internal management purposes and is tested for impairment annually by preparing a formal estimate of the recoverable amount. The recoverable amount is estimated as the value in use of the operating segment. Similar considerations to those described above in respect of assessing the recoverable amount of property, plant and equipment also apply to goodwill.

(g) Investment in joint ventures and associates - recoverable amount

In accordance with the Group's accounting policy, each investment in joint ventures and associates is evaluated in every reporting period to determine whether there are any indications of impairment. If any such indication exists, an estimate of the recoverable amount is performed and an impairment loss is recognized to the extent that the carrying amount exceeds the recoverable amount. The recoverable amount of the investment in a joint venture and an associate is measured at the higher of fair value less costs of disposal and value in use.

Fair value is determined as the amount that would be obtained from the sale of the investment in an arm's length transaction between knowledgeable and willing parties.

Value in use is also generally determined as the present value of the estimated future cash flows of those expected to arise from the continued use of the asset in its present form and its eventual disposal. Present values are determined using a risk-adjusted pre-tax discount rate appropriate to the risks inherent in the asset. Future cash flow estimates are based on expected production and sales volumes, commodity prices (considering current and historical prices, price trends and related factors) and operating costs. This policy requires management to make these estimates and assumptions which are subject to risk and uncertainty; hence there is a possibility that changes in circumstances will alter these projections, which may impact on the recoverable amounts of the investments. In such circumstances, some or all of the carrying value of the investments may be impaired and the impairment would be charged against profit or loss.

ALUMINUM CORPORATION OF CHINA LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)
For the years ended December 31, 2014, 2015 and 2016
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4. REVENUE AND SEGMENT INFORMATION

(a) Revenue

Revenue recognized during the years are as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Sales of goods (net of value-added tax) | 139,763,495 | 121,063,609 | 141,437,762 |
| Other revenue | 2,296,196 | 2,411,825 | 2,627,756 |
| | 142,059,691 | 123,475,434 | 144,065,518 |

Other revenue primarily includes revenue from the sale of scrap and other materials, the supply of heat and water and the provision of machinery processing, transportation and packaging and other services.

4. REVENUE AND SEGMENT INFORMATION (Continued)

(b) Segment information

The presidents of the Company have been identified as the chief operating decision-makers. They are responsible for the review of internal reports in order to allocate resources to operating segments and assess their performance of these operating segments.

The presidents monitor the business from a product perspective comprising alumina, primary aluminum and energy products which are identified as separate reportable operating segments. In addition, the Group's trading business is identified as a separate reportable operating segment. The Group's operating segments also include corporate and other operating activities.

The presidents assess the performance of operating segments based on profit or loss before income tax in related periods. Unless otherwise stated below, the manner of assessment used by the presidents is consistent with that applied in these financial statements. Management has determined the operating segments based on the reports reviewed by the presidents that are used to make strategic decisions.

ALUMINUM CORPORATION OF CHINA LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)
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4. REVENUE AND SEGMENT INFORMATION (Continued)

(b) Segment information (Continued)

The Group's five reportable operating segments are summarized as follows:

- The alumina segment, which consists of the mining and purchase of bauxite and other raw materials, the refining of bauxite into alumina, and the sale of alumina both internally to the Group's aluminum plants and externally to customers outside the Group. This segment also includes the production and sale of chemical alumina and metal gallium.

- The primary aluminum segment, which consists of the procurement of alumina and other raw materials, supplemental materials and electricity power, and the smelting of alumina to produce primary aluminum which is sold to external customers, including Chinalco and its subsidiaries. This segment also includes the production and sale of carbon products and aluminum alloy and other aluminum products.

- The energy segment, which consists of the research and development, production and operation of energy products, mainly includes coal mining, electricity generation by thermal power, wind power and solar power, and new energy related equipment manufacturing business. Sales of coals are mainly made to the Group's internal and external coals consuming customers; electricity is sold to regional power grid corporations.
- The trading segment, which consists of the trading of alumina, primary aluminum, aluminum fabrication products, other non-ferrous metal products, coal products, raw materials and supplemental materials and logistics and transport services to internal manufacturing plants and external customers in the PRC. The products are sourced from fellow subsidiaries of the Group, international and domestic suppliers of the Group. Sales of products manufactured by the Group's manufacturing business are included in the total revenue of the trading segment and are eliminated with the segment revenue of the respective segments which supply the products to the trading segment.

- Corporate and other operating segments, which mainly include corporate management, research and development activities and others.

Prepaid current income tax and deferred tax assets are excluded from segment assets, and income tax payable and deferred tax liabilities are excluded from segment liabilities. All sales among the operating segments were conducted on terms mutually agreed among group companies, and have been eliminated on consolidation.

ALUMINUM CORPORATION OF CHINA LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)
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4. REVENUE AND SEGMENT INFORMATION (Continued)

(b) Segment information (Continued)

| | Year ended December 31, 2014 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Alumina | Primary aluminum | Energy | Trading | Corporate and other operating segments | Inter-segment elimination | Total |
| Total revenue | 30,765,751 | 40,650,480 | 5,242,329 | 110,107,996 | 348,017 | (45,054,882) | 142,059,691 |
| Inter-segment revenue | (24,852,245) | (10,260,057) | (148,158) | (9,761,841) | (32,581) | 45,054,882 | - |
| Sales of self-produced products (Note (i)) | | | | 27,973,346 | | | |
| Sales of products sourced from external suppliers | | | | 72,372,809 | | | |
| Revenue from external customers | 5,913,506 | 30,390,423 | 5,094,171 | 100,346,155 | 315,436 | - | 142,059,691 |
| Segment (loss)/profit before income tax | (6,029,585) | (6,366,489) | (1,736,365) | 658,678 | (2,277,503) | (275,874) | (16,027,138) |
| Income tax expense | | | | | | | (1,074,910) |
| Profit for the year | | | | | | | (17,102,048) |
| Other items | | | | | | | |
| Finance income | 221,435 | 42,034 | 69,419 | 265,428 | 449,315 | - | 1,047,631 |
| Finance costs | (1,280,667) | (1,396,929) | (1,256,195) | (449,456) | (2,350,627) | - | (6,733,874) |
| | - | - | 78,392 | - | 11,118 | - | 89,510 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Share of profits of joint ventures | | | | | | | |
| Share of (losses)/profits of associates | - | (1,446) | 281,932 | (7) | 70,096 | - | 350,575 |
| Amortization of land use rights and leasehold land | (39,034) | (30,239) | (13,976) | (15) | (17,172) | - | (100,436) |
| Depreciation and amortization (excluding the amortization of land use rights and leasehold land) | (3,429,180) | (2,744,872) | (1,196,038) | (6,715) | (74,037) | - | (7,450,842) |
| Gain/(loss) on disposal of property, plant and equipment | 2,537 | (48,434) | 437 | 11 | 1,305 | - | (44,144) |
| Impairment of property, plant and equipment | (3,292,425) | (859,866) | (1,479,574) | - | (47,656) | - | (5,679,521) |
| Government grants | 112,301 | 565,790 | 91,843 | 34,382 | 19,670 | - | 823,986 |
| Impairment of intangible assets | (23,744) | - | (84,680) | - | - | - | (108,424) |
| Impairment of land use rights and leasehold land | (140,804) | - | - | - | - | - | (140,804) |
| Change for impairment of inventories | (43,251) | (590,357) | (87,423) | 54,305 | 330 | - | (666,396) |
| Provision for impairment of receivables, net | 4,321 | (2,860) | (61,970) | (81,755) | - | - | (142,264) |
| Investment in associates | - | 314,313 | 2,389,395 | - | 2,137,260 | - | 4,840,968 |
| Investment in joint ventures | 4,900 | - | 1,165,149 | - | 1,355,698 | - | 2,525,747 |
| Capital expenditure in: | | | | | | | |
| Intangible assets | 54,165 | 12 | 49,325 | 1,231 | 1,344 | - | 106,077 |
| Land use rights and leasehold | 8,340 | 284,514 | 2,652 | - | - | - | 295,506 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| land | | | | | | | |
| Property, plant and equipment (Note (ii)) | 3,601,811 | 2,038,608 | 2,321,906 | 117,814 | 194,160 | - | 8,274,299 |

(i) The sales of self-produced products include sales of self-produced alumina amounting to RMB13,231 million, sales of self-produced primary aluminum amounting RMB9,979 million, and sales of self-produced other products amounting to RMB4,763 million.

(ii) The additions in property, plant and equipment under sale and leaseback contracts (note 21) are not included in capital expenditure in property, plant and equipment.

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ALUMINUM CORPORATION OF CHINA LIMITED
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4. REVENUE AND SEGMENT INFORMATION (Continued)

(b) Segment information (Continued)

| | Year ended December 31, 2015 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Alumina | Primary aluminum | Energy | Trading | Corporate and other operating segments | Inter-segment eliminations | Total |
| Total revenue | 33,305,027 | 36,973,230 | 4,290,915 | 94,131,114 | 302,377 | (45,527,229) | 123,475,434 |
| Inter-segment revenue | (26,643,874) | (8,861,390) | (98,124) | (9,908,906) | (14,935) | 45,527,229 | - |
| Sales of self-produced products(Note (i)) | | | | 23,294,776 | | | |
| Sales of products sourced from external suppliers | | | | 60,927,432 | | | |
| Revenue from external customers | 6,661,153 | 28,111,840 | 4,192,791 | 84,222,208 | 287,442 | - | 123,475,434 |
| Segment profit/(loss) before income tax | 1,910,631 | (1,386,922) | (74,153) | (1,234,554) | 733,760 | 188,104 | 136,866 |
| Income tax benefit | | | | | | | 230,147 |
| Profit for the year | | | | | | | 367,013 |
| Other items | | | | | | | |
| Finance income | 204,488 | 20,820 | 39,231 | 265,372 | 282,456 | - | 812,367 |
| Finance costs | (1,062,885) | (1,347,593) | (1,016,869) | (562,645) | (1,971,001) | - | (5,960,993) |
| Share of profits and losses of joint ventures | - | - | 6,979 | - | 16,259 | - | 23,238 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Share of profits and losses of associates | - | (2,027) | 270,963 | - | 15,595 | - | 284,531 |
| Amortization of land use rights and leasehold land | (44,064) | (28,989) | (12,557) | (15) | (18,307) | - | (103,932) |
| Depreciation and amortization (excluding the amortization of land use rights and leasehold land) | (3,053,339) | (2,871,447) | (1,203,659) | (27,526) | (114,840) | - | (7,270,811) |
| Gain/(loss) on disposal of property, plant and equipment and land use rights | 218,401 | 1,747,796 | (611) | 56,120 | 296,168 | - | 2,317,874 |
| Other income | 299,789 | 1,369,644 | 79,611 | 12,816 | 9,167 | - | 1,771,027 |
| Gain on disposal of Shanxi Huaxing | 1,035,254 | - | - | - | 1,552,880 | - | 2,588,134 |
| Partial disposal of Jiaozuo Wanfang | - | - | - | - | 832,369 | - | 832,369 |
| Impairment of property, plant and equipment | - | - | (10,011) | - | - | - | (10,011) |
| Change for impairment of inventories *(Note (ii))* | (219,997) | 55,288 | 7,417 | (459,575) | - | - | (616,867) |
| Reversal of provision/ (provision) for impairment of receivables, net | 5,389 | 40,603 | 64,417 | 121,741 | - | - | 232,150 |
| Investments in associates | 21,000 | 312,286 | 2,323,968 | 118,352 | 2,827,095 | - | 5,602,701 |
| Investments in joint ventures | 1,886,083 | - | 1,412,223 | - | 1,852,581 | - | 5,150,887 |
| Capital expenditure in: | | | | | | | |
| Intangible assets | 5,167 | 872 | 27,991 | 580 | - | - | 34,610 |
| Land use rights and leasehold land | - | 133,686 | 5,938 | - | - | - | 139,624 |
| Property, plant and | 5,522,592 | 1,862,662 | 2,377,708 | 16,930 | 412,632 | - | 10,192,524 |

equipment(Note
(iii))

(i) The sales of self-produced products include sales of self-produced alumina amounting to RMB12,699 million, sales of self-produced primary aluminum amounting RMB8,099 million, and sales of self-produced other products amounting to RMB2,497 million.

(ii) Change for impairment of inventories do not include change for impairment due to disposal of subsidiaries and transferred to non-current assets held for sale.

(iii) The additions in property, plant and equipment under sale and leaseback contracts (note 21) are not included in capital expenditure in property, plant and equipment.

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4. REVENUE AND SEGMENT INFORMATION (Continued)

(b) Segment information (Continued)

Year ended December 31, 2016

| | Alumina | Primary aluminum | Energy | Trading | Corporate and other operating segments | Inter-segment eliminations | Total |
|---|---|---|---|---|---|---|---|
| Total revenue | 29,804,805 | 34,464,194 | 4,519,806 | 114,345,851 | 504,355 | (39,573,493) | 144,065,518 |
| Inter-segment revenue | (20,449,352) | (4,981,936) | (137,460) | (13,906,423) | (98,322) | 39,573,493 | - |
| Sales of self-produced products (Note (i)) | | | | 18,292,949 | | | |
| Sales of products sourced from external suppliers | | | | 82,146,479 | | | |
| Revenue from external customers | 9,355,453 | 29,482,258 | 4,382,346 | 100,439,428 | 406,033 | - | 144,065,518 |
| Segment profit/(loss) before income tax | 944,508 | 2,183,826 | 33,408 | 809,063 | (1,993,161) | (318,017) | 1,659,627 |
| Income tax expense | | | | | | | (404,172) |
| Profit for the year | | | | | | | 1,255,455 |
| Other items | | | | | | | |
| Finance income | 302,179 | 36,139 | 51,897 | 226,941 | 198,522 | - | 815,678 |
| Finance costs | (1,001,262) | (1,226,821) | (987,422) | (329,454) | (1,459,756) | - | (5,004,715) |
| Share of profits and losses of joint ventures | (41,367) | - | (28,312) | - | (25,829) | - | (95,508) |
| Share of profits and losses of associates | - | 958 | 87,359 | (810) | 27,584 | - | 115,091 |
| Amortization of land use rights | (42,996) | (27,464) | (11,172) | (15) | (17,550) | - | (99,197) |
| Depreciation and amortization (excluding the amortization of land | (2,830,464) | (2,598,984) | (1,298,483) | (54,724) | (88,095) | - | (6,870,750) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| use rights) | | | | | | | |
| Gain on disposal of property, plant and equipment and land use rights | 191,161 | 361,155 | 253,566 | 2,890 | 7,746 | - | 816,518 |
| Unrealized gains on futures, forward and option contracts, net | - | 16,778 | - | 109,906 | 27,901 | - | 154,585 |
| Realized loss on futures, forward and option contracts, net | (1,297) | (271,000) | - | (457,702) | (560,268) | - | (1,290,267) |
| Other income | 440,529 | 195,380 | 57,600 | 40,085 | 11,612 | - | 745,206 |
| Impairment of property, plant and equipment | (35,893) | (18,239) | (2,948) | - | - | - | (57,080) |
| Changes for impairment of inventories | 684,271 | 505,595 | 159 | 471,218 | 1,145 | - | 1,662,388 |
| Reversal of provision/(provision) for impairment of receivables, net | 53,144 | 198 | (836) | (5,838) | - | - | 46,668 |
| Gain on disposal of associates | - | - | - | - | 128,833 | - | 128,833 |
| Gain on disposal and dividends of available for sale | - | - | 1,000 | - | 124,024 | - | 125,024 |
| Investments in associates | 69,000 | 313,244 | 2,351,845 | 146,926 | 3,045,518 | - | 5,926,533 |
| Investments in joint ventures | 2,631,546 | - | 1,559,966 | - | 2,048,688 | - | 6,240,200 |
| Capital expenditure in: | | | | | | | |
| Intangible assets | 336,603 | 3 | 6,857 | 509 | 127 | - | 344,099 |
| Land use rights | - | 26 | 20,937 | - | - | - | 20,963 |
| Investment properties | 50,285 | 3,354 | - | 38,628 | - | - | 92,267 |
| Property, plant and equipment (Note (ii)) | 2,398,037 | 4,118,544 | 1,582,039 | 42,476 | 143,736 | - | 8,284,832 |

(i) The sales of self-produced products include sales of self-produced alumina amounting to RMB12,795 million, sales of self-produced primary aluminum amounting RMB3,684 million, and sales of self-produced other products amounting to RMB1,814 million.

(ii) The additions in property, plant and equipment under sale and leaseback contracts (note 21) are not included in capital expenditure in property, plant and equipment.

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4. REVENUE AND SEGMENT INFORMATION (Continued)

(b) Segment information (Continued)

| As at December 31, 2015 | Alumina | Primary aluminum | Energy | Trading | Corporate and other operating segments | Total |
|---|---|---|---|---|---|---|
| Segment assets | 70,208,510 | 46,330,865 | 37,020,858 | 19,158,171 | 37,084,436 | 209,802,840 |
| Reconciliation: | | | | | | |
| Elimination of inter-segment receivables | | | | | | (19,165,179 ) |
| Other eliminations | | | | | | (181,438 ) |
| Corporate and other unallocated assets: | | | | | | |
| Deferred tax assets | | | | | | 1,362,995 |
| Prepaid income tax | | | | | | 239,186 |
| Total assets | | | | | | 192,058,404 |
| Segment liabilities | 43,753,634 | 31,480,143 | 25,051,030 | 14,047,128 | 43,948,611 | 158,280,546 |
| Reconciliation: | | | | | | |
| Elimination of inter-segment payables | | | | | | (19,165,179 ) |
| Corporate and other unallocated liabilities: | | | | | | |
| Deferred tax liabilities | | | | | | 1,006,155 |
| Income tax payable | | | | | | 43,356 |
| Total liabilities | | | | | | 140,164,878 |

| As at December 31, 2016 | Alumina | Primary aluminum | Energy | Trading | Corporate and other operating segments | Total |
|---|---|---|---|---|---|---|
| Segment assets | 74,580,934 | 46,680,908 | 38,078,969 | 14,927,762 | 37,040,630 | 211,309,203 |
| Reconciliation: | | | | | | |
| Elimination of inter-segment receivables | | | | | | (22,016,591 ) |
| Other eliminations | | | | | | (746,586 ) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Corporate and other unallocated assets: | | | | | | |
| Deferred tax assets | | | | | | 1,426,707 |
| Prepaid income tax | | | | | | 104,213 |
| Total assets | | | | | | 190,076,946 |
| Segment liabilities | 42,319,671 | 30,023,322 | 24,927,277 | 11,298,129 | 46,596,662 | 155,165,061 |
| Reconciliation: | | | | | | |
| Elimination of inter-segment payables | | | | | | (22,016,591 ) |
| Corporate and other unallocated liabilities: | | | | | | |
| Deferred tax liabilities | | | | | | 984,304 |
| Income tax payable | | | | | | 356,683 |
| Total liabilities | | | | | | 134,489,457 |

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4. REVENUE AND SEGMENT INFORMATION (Continued)

(b) Segment information (Continued)

The Group mainly operates in the mainland of China. Geographical information of the operating segments is as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Segment revenue from external customers | | | |
| — Mainland China | 138,805,844 | 121,229,145 | 141,229,725 |
| — Outside of Mainland China | 3,253,847 | 2,246,289 | 2,835,793 |
| | 142,059,691 | 123,475,434 | 144,065,518 |

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Non-current assets (excluding financial assets and deferred tax assets) | | |
| — Mainland China | 119,685,796 | 120,322,696 |
| — Outside of Mainland China | 359,308 | 370,561 |
| | 120,045,104 | 120,693,257 |

For the year ended December 31, 2016, revenues of approximately RMB30,940 million (2014:RMB24,986 million, 2015: RMB31,818 million) were derived from entities directly or indirectly owned or controlled by the PRC government including Chinalco. These revenues are mainly attributable to the alumina, primary aluminum, energy and trading segments. There were no other individual customer from which the Group has derived revenue of more than 10% of the Group's revenue during the years ended December 31, 2014, 2015 and 2016.
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5. INTANGIBLE ASSETS

| | Goodwill | Mining rights | Mineral exploration rights | Computer software and others | Total |
|---|---|---|---|---|---|
| Year ended December 31, 2015 | | | | | |
| Opening net carrying amount | 2,345,057 | 7,121,134 | 1,312,222 | 201,685 | 10,980,098 |
| Additions | - | 32,309 | 716 | 1,585 | 34,610 |
| Transfer from property, plant and equipment | - | 23,009 | 6,559 | 7,433 | 37,001 |
| Reclassification to operating lease prepayments | - | (3,767) | - | - | (3,767) |
| Disposal of subsidiaries (note 40) | - | (183,267) | (186,114) | - | (369,381) |
| Amortization | - | (223,068) | - | (32,030) | (255,098) |
| Currency translation differences | 780 | 4,673 | 10,099 | - | 15,552 |
| Closing net carrying amount | 2,345,837 | 6,771,023 | 1,143,482 | 178,673 | 10,439,015 |
| As at December 31, 2015 | | | | | |
| Cost | 2,345,837 | 7,799,213 | 1,143,482 | 405,093 | 11,693,625 |
| Accumulated amortization and impairment | - | (1,028,190) | - | (226,420) | (1,254,610) |
| Net carrying amount | 2,345,837 | 6,771,023 | 1,143,482 | 178,673 | 10,439,015 |

| | Goodwill | Mining rights and others | Mineral exploration rights | Computer software and others | Total |
|---|---|---|---|---|---|
| Year ended December 31, 2016 | | | | | |
| Opening net carrying amount | 2,345,837 | 6,771,023 | 1,143,482 | 178,673 | 10,439,015 |
| Additions (Note) | - | 341,687 | 1,190 | 1,222 | 344,099 |
| Disposals | - | - | - | (6,827) | (6,827) |
| Amortization | - | (211,325) | - | (32,446) | (243,771) |
| Transfer from property, plant and equipment (note 6) | - | 42,165 | 10,408 | 143 | 52,716 |
| Reclassification | - | 36,686 | (36,686) | - | - |
| Currency translation differences | 1,016 | 9,351 | 13,192 | - | 23,559 |
| Closing net carrying amount | 2,346,853 | 6,989,587 | 1,131,586 | 140,765 | 10,608,791 |
| As at December 31, 2016 | | | | | |
| Cost | 2,346,853 | 8,231,287 | 1,131,586 | 399,631 | 12,109,357 |
| Accumulated amortization and impairment | - | (1,241,700) | - | (258,866) | (1,500,566) |

| | | | | | |
|---|---|---|---|---|---|
| Net carrying amount | 2,346,853 | 6,989,587 | 1,131,586 | 140,765 | 10,608,791 |

Note：

On June 28, 2016, the Company entered into an agreement with Chinalco to obtain the profit sharing right of "Maochang" mine at a cash consideration of RMB349.95 million, which will be payable by instalment. After considering the present value of the cash consideration and related transaction costs, the acquisition cost of profit sharing right amounted to RMB335.41 million. Details of the transaction are disclosed in note 36(a)(xxiii).
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5. INTANGIBLE ASSETS (Continued)

For the years ended December 31, 2014, 2015 and 2016, the amortization expenses of intangible assets recognized in profit or loss are analyzed as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Cost of sales | 246,144 | 223,068 | 211,325 |
| General and administrative expenses | 42,105 | 32,030 | 32,446 |
| | 288,249 | 255,098 | 243,771 |

As at December 31, 2016, the Group has pledged intangible assets with a net carrying value amounting to RMB1,114 million (December 31, 2015: RMB1,241 million) for bank and other borrowings as set out in note 25 to the financial statements.

As at December 31, 2016, the Group was in the process of applying for the certificates of mining rights with a carrying value amounting to RMB1,577 million (December 31, 2015: RMB1,582 million). There have been no litigations, claims or assessments against the Group for compensation with respect to the use of these rights to date. As at December 31, 2016, the carrying value of these rights only represented approximately 1% of the total asset value of the Group (December 31, 2015: 1%). Management considers that it is probable that the Group can obtain the relevant ownership certificates from the appropriate authorities. The directors of the Company are of the opinion that the Group legally owns and has the rights to use the above mining rights, and that there is no material adverse impact on the overall financial position of the Group.

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5. INTANGIBLE ASSETS (Continued)

Impairment tests for goodwill

The lowest level within the Group at which goodwill is monitored for internal management purposes is the operating segment level. Therefore, goodwill is allocated to the Group's cash generating units ("CGUs") and groups of CGUs according to operating segments. A summary of goodwill allocated to each segment is presented below:

| | December 31, 2015 | | December 31, 2016 | |
|---|---|---|---|---|
| | Alumina | Primary aluminium | Alumina | Primary aluminium |
| Qinghai Branch | - | 217,267 | - | 217,267 |
| Guangxi Branch | 189,419 | - | 189,419 | - |
| Lanzhou Branch | - | 1,924,259 | - | 1,924,259 |
| PT. Nusapati Prima ("PTNP") | 14,892 | - | 15,908 | - |
| | 204,311 | 2,141,526 | 205,327 | 2,141,526 |

The recoverable amount of a CGU is determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on financial budgets approved by management covering a five-year period. Cash flows beyond the 5-year period are extrapolated using the estimated growth rate of 2% (2015: 2%) not exceeding the long-term average growth rate for the businesses in which the CGU operates. Other key assumptions applied in the impairment tests include the expected product price, demand for the products, product costs and related expenses. Management determined these key assumptions based on past performance and their expectations on market development. Furthermore, the Group adopts a pre-tax rate of 12.62% (2015: 12.62%) that reflects specific risks related to CGUs and groups of CGUs as the discount rate. The assumptions above are used in analyzing the recoverable amounts of CGUs and groups of CGUs within operating segments.

The directors of the Company are of the view that, based on their assessment, there was no impairment of goodwill as at December 31, 2016 (December 31, 2015: no impairment).
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6. PROPERTY, PLANT AND EQUIPMENT

| | Buildings | Machinery | Transportation facilities | Office and other equipment | Construction In progress | Total |
|---|---|---|---|---|---|---|
| Year ended December 31, 2015 | | | | | | |
| Opening net carrying amount | 28,840,164 | 54,234,316 | 929,775 | 145,477 | 11,109,413 | 95,259,145 |
| Currency translation differences | 319 | 209 | 143 | 31 | - | 702 |
| Reclassifications and internal transfers | 2,585,549 | 4,334,648 | 108,344 | 18,414 | (7,046,955) | - |
| Transfer to intangible assets (note 5) | - | - | - | - | (37,001) | (37,001) |
| Transfer to land use rights (note 8) | - | - | - | - | (5,284) | (5,284) |
| Additions | 238,641 | 99,272 | 16,403 | 3,802 | 9,834,406 | 10,192,524 |
| Additions from sales and leaseback | - | 4,855,220 | - | - | 887,814 | 5,743,034 |
| Transfer to an associate as capital injection | (162,514) | (10,209) | - | (1,898) | - | (174,621) |
| Transfer to assets of a disposal group classified as held for sale (note 17) | (40,661) | (25,840) | (112) | (2) | - | (66,615) |
| Disposal of subsidiaries (note 40) | (2,472,604) | (1,464,038) | (7,032) | (1,288) | (937,381) | (4,882,343) |
| Disposals (Note (i) (ii)) | (473,511) | (104,761) | (5,740) | (838) | (157,838) | (742,688) |
| Disposals for sales and leaseback | - | (5,753,513) | - | - | (965,180) | (6,718,693) |
| Depreciation | (1,584,580) | (5,080,606) | (224,973) | (41,562) | - | (6,931,721) |
| Impairment loss | - | (10,011) | - | - | - | (10,011) |
| Closing net carrying amount | 26,930,803 | 51,074,687 | 816,808 | 122,136 | 12,681,994 | 91,626,428 |
| As at December 31, 2015 | | | | | | |
| Cost | 41,672,620 | 96,836,393 | 3,036,729 | 534,571 | 13,278,458 | 155,358,771 |
| Accumulated depreciation and impairment | (14,741,817) | (45,761,706) | (2,219,921) | (412,435) | (596,464) | (63,732,343) |
| Net carrying amount | 26,930,803 | 51,074,687 | 816,808 | 122,136 | 12,681,994 | 91,626,428 |

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6. PROPERTY, PLANT AND EQUIPMENT (Continued)

| | Buildings | Machinery | Transportation facilities | Office and other equipment | Construction In progress | Total |
|---|---|---|---|---|---|---|
| Year ended December 31, 2016 | | | | | | |
| Opening net carrying amount | 26,930,803 | 51,074,687 | 816,808 | 122,136 | 12,681,994 | 91,626,428 |
| Currency translation differences | 239 | 258 | 159 | 39 | - | 695 |
| Reclassifications and internal transfers | 3,046,637 | 1,407,017 | 18,750 | 4,485 | (4,476,889) | - |
| Transfer to intangible assets (note 5) | - | - | - | - | (52,716) | (52,716) |
| Transfer to land use rights (note 8) | - | - | - | - | (156,752) | (156,752) |
| Additions | 3,160 | 48,526 | 17,335 | 7,261 | 8,208,550 | 8,284,832 |
| Additions from sales and leaseback | - | 1,360,036 | - | - | 200,000 | 1,560,036 |
| Disposals | (761,184) | (1,647,356) | (25,420) | (3,238) | - | (2,437,198) |
| Disposals for sales and leaseback | - | (1,451,190) | - | - | (230,608) | (1,681,798) |
| Depreciation | (1,483,927) | (4,867,134) | (175,671) | (34,063) | - | (6,560,795) |
| Impairment loss | (28,670) | (28,326) | (59) | (25) | - | (57,080) |
| Closing net carrying amount | 27,707,058 | 45,896,518 | 651,902 | 96,595 | 16,173,579 | 90,525,652 |
| As at December 31, 2016 | | | | | | |
| Cost | 43,006,715 | 90,379,769 | 2,932,735 | 519,269 | 16,770,045 | 153,608,533 |
| Accumulated depreciation and impairment | (15,299,657) | (44,483,251) | (2,280,833) | (422,674) | (596,466) | (63,082,881) |
| Net carrying amount | 27,707,058 | 45,896,518 | 651,902 | 96,595 | 16,173,579 | 90,525,652 |

Note:
nt of Baiyun District of Guiyang*
30333;雲區人民政府), Guiyang Land and Mineral Resources Reserve Centre*
22303;地礦產資源儲備 心) ("Guiyang Land Reserve Centre"), a
u Branch of the Company ("Guizhou Branch") and Guizhou Aluminum Plant entered into a Land Reserve Acquisition
ytic Aluminum Plant Area of Baiyun
42;區電解 片區土地收儲合作協&#35696
ation Agreement"). According to the Land Reserve Acquisition Cooperation Agreement, Guizhou Branch sold the aluminum
Land Reserve Centre at a consideration of RMB1,950 million which was determined based on the appraised value. Pursuant to

peration Agreement, Guizhou Branch will receive the consideration by instalments of RMB600 million, RMB200 million, nillion by the end of December 2015, by the end of December 2017, by the end of June 2018 and by the end of December uminium plant and buildings' carrying value was RMB438.4 million and the Group recognized a gain of RMB1,364.8 million he discounted value of the consideration and the carrying value of the assets disposed of Guizhou Branch received RMB600 dance with the aforementioned instalment terms. As at December 31, 2015, the receivable from Guiyang Land Reserve Center s discounted to the present value of RMB 1,203.3 million.

Hong Kong properties, including properties with carrying amount of RMB12.4 million and land use right with carrying inalco assets holdings limited ("Chinalco assets holdings"), a subsidiary of Chinalco, details of which is disclosed in note

*The English names represent the best effort by the management of the Group in translating their Chinese names as they do not have any official English names.

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6. PROPERTY, PLANT AND EQUIPMENT (Continued)

For the years ended December 31, 2014, 2015 and 2016, depreciation expenses recognized in profit or loss are analyzed as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Cost of sales | 6,808,759 | 6,736,466 | 6,371,154 |
| General and administrative expenses | 179,813 | 172,524 | 180,111 |
| Selling and distribution expenses | 31,896 | 22,731 | 9,530 |
| | 7,020,468 | 6,931,721 | 6,560,795 |

As at December 31, 2016, the Group was in the process of applying for the ownership certificates of buildings with a net carrying value of RMB6,759 million (December 31, 2015: RMB5,105 million). There has been no litigation, claims or assessments against the Group for compensation with respect to the use of these buildings to the date of approval of these financial statements. As at December 31, 2016, the carrying value of these buildings only represented approximately 3.56% of the Groups total asset value (December 31, 2015: 3%). Management considers that it is probable that the Group can obtain the relevant ownership certificates from the appropriate authorities. The directors of the Company are of the opinion that the Group legally owns and has the rights to use the above property, plant and equipment, and that there is no material adverse impact on the overall financial position of the Group.

For the year ended December 31, 2016, interest expenses of RMB414 million (2014: RMB533 million, 2015: RMB522 million) arising from borrowings attributable to the construction of property, plant and equipment during the year were capitalized at an annual rate ranging from 3.85% to 6.00% (2014: 5.80% to 7.10%, 2015: 4.90% to 6.55%) (note 29), and were included in additions to property, plant and equipment.

As at December 31, 2016 the Group has pledged property, plant and equipment at a net carrying value amounting to RMB6,456 million (December 31, 2015: RM6,103 million) for bank and other borrowings as set out in note 25 to the financial statements.

As at December 31, 2016, the carrying value of temporarily idle property, plant and equipment of the Group is RMB2,756 million (December 31, 2015: RMB6,257 million).

The net carrying amounts of the Group's fixed assets held under finance leases included in the total amounts of the machinery and construction in progress at December 31, 2016 were RMB7,200 million (2015: RMB6,154 million ) and RMB194 million (2015: RMB888 million), respectively. The accumulated depreciation of the Group's fixed assets held under finance lease amounted to RMB1,703 million (2015: RMB495 million ).

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6. PROPERTY, PLANT AND EQUIPMENT (Continued)

Impairment test for property, plant and equipment

When any indicators of impairment are identified, property, plant and equipment are reviewed for impairment based on each CGU. The CGU is an individual plant or entity. The carrying value of these individual plants or entities were compared to the recoverable amount of the CGUs, which were based predominantly on value-in-use. Value-in-use calculations use pre-tax cash flow projections based on financial budgets approved by management covering a 5-year period. Cash flows beyond the 5-year period are extrapolated using the same cash flow projections of the fifth year. Other key assumptions applied in the impairment tests include the expected product price, demand for the products, product cost and related expenses. Management determined that these key assumptions were based on past performance and their expectations on market development. Further, the Group adopts a pre-tax rate of 10.16% (2015: 10.16%) that reflects specific risks related to CGUs as discount rates. The assumptions above are used in analyzing the recoverable amounts of CGUs within operating segments.

For the CGUs with indicators of impairment identified, the assets were not further impaired during the current year based on the impairment tests (2015:nil).

In addition to the CGUs for which the impairment was tested based on value-in-use, the Group also assessed the recoverable amounts for property, plant and equipment about to be disposed or abandoned, and impairment losses of RMB57 million were provided during year ended December 31, 2016 (2014: RMB5,680 million, 2015: RMB10 million).

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7. INVESTMENT PROPERTIES

| | Buildings (Note (i)) | Land use right (Note (ii)) | Total |
|---|---|---|---|
| Year ended December 31, 2016 | | | |
| Opening net carrying amount | - | - | - |
| Addition | 88,913 | 966,625 | 1,055,538 |
| Transfer from land use right (note 8) | - | 190,761 | 190,761 |
| Depreciation | - | (1,266) | (1,266) |
| Closing net carrying amount | 88,913 | 1,156,120 | 1,245,033 |
| As at December 31, 2016 | | | |
| Cost | 88,913 | 1,181,942 | 1,270,855 |
| Accumulated depreciation and impairment | - | (25,822) | (25,822) |
| Net carrying amount | 88,913 | 1,156,120 | 1,245,033 |

Note:

i. Qingdao Boxin Aluminum Co., Ltd.*(青島博信 ), transferred its investment properties to Chalco Shandong to offset the receivables amounting to RMB50 million,which was included in the addition of buildings in investment properties.

ii. In December 2016, the directors of the Company approved to use the land use right of Gansu Hualu, a subsidiary of the Company, for commercial development in the future. Accordingly, the Group accounted for the land use right as investment property and adopted the cost model for its subsequent measurement. As at December 31, 2016, the net carrying amount of the land use right was RMB1,156 million and the accumulated depreciation amounted to RMB26 million.

The Group's investment properties consist of land use right to be developed and buildings under operating leases.

As at December 31, 2016, the fair value of the buildings was approximately RMB106 million which was estimated based on the market price of comparable buildings in the nearby area. The directors of the Company estimated that the fair value of the land use right is highly likely to be RMB1,221 million, which was determined based on the transaction prices for similar lands nearby.
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8. LAND USE RIGHTS AND LEASEHOLD LAND

Details of land use rights and leasehold land are as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Operating leases : | | |
| In the mainland of the PRC, held on: | | |
| Leases less than 10 years | 142,429 | 121,047 |
| Leases between 10 to 50 years | 3,094,249 | 3,069,012 |
| Leases over 50 years | 213,677 | 135,227 |
| | 3,450,355 | 3,325,286 |

Operating leases prepayments

| | 2015 | 2016 |
|---|---|---|
| As at January 1 | 3,944,607 | 3,450,355 |
| Additions | 139,624 | 20,963 |
| Reclassification | 3,767 | - |
| Transfer from property, plant and equipment (note 6) | 5,284 | 156,752 |
| Disposal (Note) | (135,248 ) | (12,826 ) |
| Disposal of subsidiaries | (365,625 ) | - |
| Transfer to investment properties (note 7) | - | (190,761 ) |
| Capital injection in an associate | (40,788 ) | - |
| Amortization | (101,266 ) | (99,197 ) |
| As at December 31 | 3,450,355 | 3,325,286 |

Note:

In November 2015, the Company and Gansu Hualu and Baiyin Land and Mineral Resources Reserve Centre (白銀市土地收購儲備整理心) (the "Baiyin Land Reserve Centre") entered into the Land Use Right Acquisition Agreement (the "Land Acquisition Agreement"), pursuant to which Baiyin Land Reserve Centre acquired the land use right of 588 mu (equivalent to 392,000 square metres) at a consideration of RMB456 million based on the appraised value. The consideration was received before 2015 year end. The carrying amount of the disposed land use right is RMB81 million and the disposal gain is RMB375 million.

As at December 31, 2016, the Group was in the process of applying for the certificates of land use rights with a carrying amount of RMB447 million (December 31, 2015: RMB384 million). There has been no litigations, claims or assessments against the Group for compensation with respect to the use of land parcels to date. As at December 31, 2016, the carrying value of these land parcels only represented approximately 0.2% of the total asset value of the

Group (December 31, 2015: 0.2%). Management considers that it is probable that the Group can obtain the relevant ownership certificates from the appropriate authorities. The directors of the Company are of the opinion that the Group legally owns and has the right to use the above land, and that there is no material adverse impact on the overall financial position of the Group.

For the year ended December 31, 2016, the amortization expenses of land use rights were recognized in "general and administrative expenses" in profit or loss amounting to RMB99 million (2014: RMB101 million, 2015: RMB104 million).

As at December 31, 2016, the Group has pledged land use rights at a net carrying value amounting to RMB254 million (December 31, 2015: RMB258 million) for bank and other borrowings as set out in note 25 to the financial statements.

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9. INVESTMENTS IN JOINT VENTURES AND ASSOCIATES

(a) Investments in joint ventures

Movements in investments in joint ventures are as follows:

| | 2015 | 2016 |
|---|---|---|
| As at January 1 | 2,525,747 | 5,150,887 |
| Capital injections | 238,000 | 1,224,912 |
| Disposal of Shanxi Huaxing | 2,351,479 | - |
| Share of profits and losses for the year | 23,238 | (95,508) |
| Share of change in reserves | 12,423 | 8,373 |
| Cash dividends declared | - | (48,464) |
| As at December 31 | 5,150,887 | 6,240,200 |

As at December 31, 2015 and 2016, all joint ventures of the Group were unlisted.

As at December 31, 2015, particulars of the Group's material joint venture is as follows:

| Name | Place of establishment and operation | Registered and paid-in capital | Principal activities | Percentage of | | |
|---|---|---|---|---|---|---|
| | | | | Ownership interest | Voting power | Profit sharing |
| Guangxi Huayin Aluminum Co., Ltd. ("Guangxi Huayin") (廣 銀 ) | PRC/Mainland of China | 2,441,987 | Manufacture and distribution of alumina | 33% | 33% | 33% |

The above investment is directly held by the Company.

Guangxi Huayin, which is considered a material joint venture of the Group in 2015, is accounted for using the equity method.

The following table illustrates the summarized financial information in respect of Guangxi Huayin:

| | 2015 | 2016 |
|---|---|---|
| Cash and cash equivalents | 206,090 | 444,104 |
| Other current assets | 1,424,496 | 1,519,522 |

| | | | |
|---|---|---|---|
| Current assets | | 1,630,586 | 1,963,626 |
| Non-current assets | | 6,356,342 | 6,253,828 |
| Financial liabilities | | 4,504,192 | 2,642,830 |
| Other current liabilities | | 114,718 | 199,885 |
| Current liabilities | | 4,618,910 | 2,842,715 |
| Non-current liabilities | | 27,416 | 1,866,613 |
| Net assets | | 3,340,602 | 3,508,126 |
| Non-controlling interests | | - | - |
| Reconciliation to the Group's interest in the joint venture: | | | |
| Proportion of the Group's ownership | | 33% | 33% |
| Group's share of net assets of the joint venture | | 1,102,399 | 1,157,682 |
| Carrying amount of the investment | | 1,102,399 | 1,157,682 |
| | 2014 | 2015 | 2016 |
| Revenue | 4,239,789 | 4,234,157 | 4,008,925 |
| Gross profit | 1,022,772 | 706,818 | 531,785 |
| Interest income | 5,670 | 5,004 | 2,944 |
| Depreciation and amortisation | 437,254 | 524,436 | 509,510 |
| Interest expenses | 276,995 | 227,592 | 169,745 |
| Profit before income tax | 169,350 | 189,720 | 173,690 |
| Income tax | 32,432 | 47,914 | 35,312 |
| Profit and total comprehensive income for the year | 136,918 | 141,806 | 138,378 |
| Other comprehensive income | - | - | - |
| Dividend received | - | - | - |

The following table illustrates the aggregate financial information of the Group's joint ventures that are not individually material:

| | 2015 | 2016 |
|---|---|---|
| Share of the joint ventures' profits and losses for the year | 23,238 | (95,508 ) |
| Share of the joint ventures' total comprehensive income/ (loss) | 23,238 | (95,508 ) |
| Aggregate carrying amount of the Group's investments in joint ventures | 5,150,887 | 6,240,200 |

As at December 31, 2016, the proportionate interests of the Group in the joint ventures' capital commitments amounted to RMB2,621 million (December 31, 2015: RMB11 million).

There were no material contingent liabilities relating to the Group's interests in the joint ventures and the joint ventures themselves.

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9. INVESTMENTS IN JOINT VENTURES AND ASSOCIATES (Continued)

(b) Investments in associates

Movements in investments in associates are as follows:

| | 2015 | 2016 |
|---|---|---|
| As at January 1 | 4,840,968 | 5,602,701 |
| Capital injections | 2,087,180 | 511,151 |
| Partial disposal of Jiaozuo Wanfang | (1,039,573) | - |
| Reclassification of investment in an associate to available-for-sale financial investments | - | (176,774) |
| Share of profits and losses for the year | 284,531 | 115,091 |
| Cash dividends declared | (384,357) | (65,603) |
| Share of change in reserves | (545) | 596 |
| Other comprehensive income | 4,658 | - |
| Reclassified as held for sale | (78,838) | - |
| Other decrease of investment in an associate | (111,323) | (60,629) |
| As at December 31 | 5,602,701 | 5,926,533 |

As at December 31, 2016, the investment in an associate of the Group at a net carrying value amounting to RMB376 million (December 31, 2015: RMB421 million) was pledged for bank and other borrowings as set out in note 25 to the financial statements.

As at December 31, 2015, except for Jiaozuo Wanfang, which is a listed company, all associates of the Group were unlisted. As at December 31, 2016, all associates of the Group were unlisted.

As at December 31, 2015, particulars of the Group's material associates are as follows:

| Name | Place of establishment and operation | Registered and paid-in capital | Principal activities | Effective equity interest held | | |
|---|---|---|---|---|---|---|
| | | | | Ownership interest | Voting power | Profit sharing |
| Ling Wu Power | PRC/Mainland of China | Registered Capital 1,300,000<br>Paid-in capital 2,050,239 | Thermal power generation | 35% | 35% | 35% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Ning Dong Power | PRC/Mainland of China | 900,000 | Thermal power generation | 35% | 35% | 35% |

As at December 31, 2016, particulars of the Group's material associate are as follows:

| Name | Place of establishment and operation | Registered and paid-in capital | Principal activities | Effective equity interest held Ownership interest | Voting power | Profit sharing |
|---|---|---|---|---|---|---|
| Ling Wu Power | PRC/Mainland of China | Registered capital 1,300,000 Paid-in capital 2,050,239 | Thermal power generation | 35% | 35% | 35% |

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9. INVESTMENTS IN JOINT VENTURES AND ASSOCIATES (Continued)

(b) Investments in associates (Continued)

Ning Dong Power, which is considered a material associate of the Group in 2015, is accounted for using the equity method.

The following table illustrates the summarized financial information in respect of Ning Dong Power:

| | 2015 | 2016 |
|---|---|---|
| Cash and cash equivalents | 132,881 | 119,061 |
| Other current assets | 303,979 | 206,629 |
| Current assets | 436,860 | 325,690 |
| Non-current assets | 3,781,254 | 3,548,930 |
| Financial liabilities | 794,007 | 748,530 |
| Other current liabilities | 163,571 | 12,947 |
| Current liabilities | 957,578 | 761,477 |
| Non-current liabilities | 1,809,171 | 1,750,860 |
| Net assets | 1,451,365 | 1,362,283 |
| Non-controlling interests | - | - |
| Reconciliation to the Group's interest in the joint venture: | | |
| Proportion of the Group's ownership | 35% | 35% |
| Group's share of net assets of the associate | 507,978 | 476,799 |
| Carrying amount of the investment | 507,978 | 476,799 |

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Revenue | 1,848,982 | 1,741,041 | 1,313,660 |
| Gross profit | 619,062 | 554,860 | 222,033 |
| Interest income | 1,560 | 585 | 1,567 |
| Depreciation and amortisation | 258,407 | 264,634 | 269,181 |
| Interest expenses | 170,366 | 139,161 | 104,912 |
| Profit before income tax | 301,122 | 265,123 | 89,786 |
| Income tax | - | 17,213 | 9,214 |
| Profit and total comprehensive income for the year | 301,122 | 247,910 | 80,572 |
| Other comprehensive income | - | - | - |
| Dividend received | 58,953 | 88,230 | 59,379 |

Ling Wu Power, which is considered a material associate of the Group in 2015 and 2016, is accounted for using the equity method

The following table illustrates the summarized financial information in respect of Ling Wu Power:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Cash and cash equivalents | 73,001 | 26,191 |
| Other current assets | 1,278,209 | 705,994 |
| Current assets | 1,351,210 | 732,185 |
| | | |
| Non-current assets | 9,669,618 | 8,781,399 |
| | | |
| Financial liabilities | 2,359,825 | 1,521,912 |
| Other current liabilities | 10,556 | 6,011 |
| Current liabilities | 2,370,381 | 1,527,923 |
| | | |
| Non-current liabilities | 5,043,634 | 4,126,278 |
| | | |
| Net assets | 3,606,813 | 3,859,383 |
| Non-controlling interests | - | - |
| | | |
| Reconciliation to the Group's interest in the associate: | | |
| Proportion of the Group's ownership | 35% | 35% |
| Group's share of net assets of the associate | 1,262,385 | 1,350,784 |
| Carrying amount of the investment | 1,262,385 | 1,350,784 |

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Revenue | 4,938,969 | 4,319,345 | 3,297,397 |
| Gross profit | 1,395,909 | 1,190,966 | 524,930 |
| Interest income | 2,240 | 2,140 | 1,320 |
| Depreciation and amortization | 599,728 | 610,910 | 608,345 |
| Interest expenses | 387,620 | 312,128 | 251,838 |
| Profit before income tax | 704,363 | 629,564 | 327,481 |
| Income tax | 106,440 | 75,404 | 74,911 |
| Profit and total comprehensive income for the year | 597,923 | 554,160 | 252,570 |
| Other comprehensive income | - | - | - |
| Dividend received | - | 289,605 | - |

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9. INVESTMENTS IN JOINT VENTURES AND ASSOCIATES (Continued)

(b) Investments in associates (Continued)

The following table illustrates the aggregate financial information of the Group's associates that are not individually material:

| | 2015 | 2016 |
|---|---|---|
| Share of the associates' profits and losses | 90,575 | 26,692 |
| Share of the associates' other comprehensive income | 4,658 | - |
| Share of the associates' total comprehensive income | 95,233 | 26,692 |
| Aggregate carrying amount of the Group's investments in the associates | 4,340,316 | 4,575,749 |

As at December 31, 2016, there were no proportionate interests of the Group in the associates' capital commitments (December 31, 2015: RMB2 million).

As at December 31, 2016, there were no material contingent liabilities relating to the Group's interests in the associates and the associates themselves (December 31, 2015: Nil).

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10. AVAILABLE-FOR-SALE FINANCIAL INVESTMENTS

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Current portion | | |
| Stated at fair value | | |
| Short-term investments, at fair value | 224,820 | - |
| Non current portion | | |
| Stated at fair value | | |
| Listed equity investments | 59,940 | 93,893 |
| Stated at cost | | |
| Unlisted equity investments | 73,211 | 73,211 |
| Less: provision for impairment | (2,711) | (2,711) |
| | 70,500 | 70,500 |
| | 130,440 | 164,393 |

The gross gain in respect of the Group's available-for-sale investments recognized in other comprehensive income amounted to RMB104 million (2014:nil, 2015: RMB58 million).

During the year ended December 31, 2016, due to the disposal of available-for-sale investments, gains in fair value changes amounting to RMB103 million (2014:nil, 2015: nil) recognized in other comprehensive income were transferred to profit or loss.

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11. DEFERRED TAX

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current income tax assets against current income tax liabilities and when the deferred taxes relate to the same tax authority.

The movements in deferred tax assets and liabilities during the year ended December 31, 2015 and 2016, without taking into consideration the offsetting of balances within the same tax jurisdiction, are as follows:

Movements in deferred tax assets:

| | Provision for impairment | Accrued expenses | Tax losses | Unrealized profit at consolidation | Others | Total |
|---|---|---|---|---|---|---|
| As atJanuary 1, 2015 | 1,052,282 | 357,601 | 708,674 | 138,030 | 146,507 | 2,403,094 |
| Write-off of deferred tax assets previously recognized | - | (3,057) | - | - | - | (3,057) |
| (Charged)/credited to profit or loss | (62,759) | (139,047) | 94,466 | (36,571) | 73,588 | (70,323) |
| Other changes | - | - | - | - | (51,167) | (51,167) |
| As at December 31, 2015 | 989,523 | 215,497 | 803,140 | 101,459 | 168,928 | 2,278,547 |
| | | | | | | |
| As at January 1, 2016 | 989,523 | 215,497 | 803,140 | 101,459 | 168,928 | 2,278,547 |
| (Charged)/credited to profit or loss | (436,751) | (7,846) | (166,943) | 67,654 | (48,119) | (592,005) |
| | | | | | | |
| As at December 31, 2016 | 552,772 | 207,651 | 636,197 | 169,113 | 120,809 | 1,686,542 |

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11. DEFERRED TAX (Continued)

Movements in deferred tax liabilities:

| | Interest capitalization | Fair value changes of financial assets | Depreciation and amortization | Unrealized losses of consolidation | Assets of rehabilitation obligation | Fair value adjustments arising from acquisition of subsidiaries | Investment in a subsidiary | Investment in an associate | Total |
|---|---|---|---|---|---|---|---|---|---|
| As at January 1, 2015 | 79,011 | 29,589 | 7,321 | - | 14,853 | 1,060,123 | 1,086,686 | 234,719 | 2,512,302 |
| Exchange realignment | - | - | - | - | - | 1,836 | - | - | 1,836 |
| Disposal of subsidiaries (note 40) | - | - | - | - | - | (36,389 ) | - | - | (36,389 ) |
| (Credited)/charged to profit or loss | (8,002 ) | (28,678) | 333 | 4,889 | (14,853) | (24,903 ) | (286,046 ) | (198,782) | (556,042 ) |
| | 71,009 | 911 | 7,654 | 4,889 | - | 1,000,667 | 800,640 | 35,937 | 1,921,707 |
| As at January 1, 2016 | 71,009 | 911 | 7,654 | 4,889 | - | 1,000,667 | 800,640 | 35,937 | 1,921,707 |
| Exchange realignment | - | - | - | - | - | 210 | - | - | 210 |
| Charged to other comprehensive income | - | 13,288 | - | - | - | - | - | - | 13,288 |
| (Credited)/charged to profit or loss | (9,843 ) | 726 | (180 ) | (4,889) | - | (23,535 ) | (617,408 ) | (35,937 ) | (691,066 ) |
| | 61,166 | 14,925 | 7,474 | - | - | 977,342 | 183,232 | - | 1,244,139 |

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11. DEFERRED TAX (Continued)

For presentation purposes, certain deferred tax assets and liabilities have been offset in the consolidated statement of financial position. The following is an analysis of the deferred tax balances of the Group for financial reporting purposes:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Net deferred tax assets | 1,362,995 | 1,426,707 |
| Net deferred tax liabilities | 1,006,155 | 984,304 |

As at December 31, 2015 and 2016, the Group has not recognized deferred tax liabilities for taxable temporary differences associated with the investment in a joint venture established in China, which is caused by the undistributed retained earnings and the appreciation value due to loss of control by partial disposal in 2015. The directors of the Company consider that the taxable temporary difference relating to this joint venture will be reversed mainly through future profit distributions or future disposal. Considering the joint venture is established in China, and the profit distribution is non-taxable according to China tax law, there will be no tax consequences from the profit distribution. Furthermore, the Group has no plan to dispose of the equity investment in this joint venture in the foreseeable future, and the Group can control the disposal. Therefore, as at December 31, 2016, the Group did not recognize deferred tax liability relating to the taxable temporary difference associated with investment in this joint venture amounting to RMB1,393 million (December 31, 2015: RMB1,407 million).

As at December 31, 2016, the Group has not recognized deferred tax assets of RMB5,489 million (December 31, 2015: RMB5,582 million) in respect of accumulated tax losses amounting to RMB21,957 million (December 31, 2015: RMB22,328 million) arising in Mainland China that can be carried forward for offsetting against future taxable income, and deferred tax assets of RMB1,915 million (December 31, 2015: RMB2,057 million) in respect of deductible temporary differences amounting to RMB7,660 million (December 31, 2015: RMB8,227 million) as it was considered not probable that those assets would be realized. The above tax losses will expire in one to five years if not utilized.

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11. DEFERRED TAX (Continued)

As at December 31, 2015 and 2016, the expiry profile of these unprovided tax losses was analyzed as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Expiring in | | |
| 2016 | 63,812 | - |
| 2017 | 3,812,061 | 4,473,661 |
| 2018 | 8,463,049 | 7,880,303 |
| 2019 | 8,299,794 | 7,686,919 |
| 2020 | 1,688,920 | 880,805 |
| 2021 | N/A | 1,035,068 |
| | 22,327,636 | 21,956,756 |

As at December 31, 2016, deferred tax assets amounting to RMB1,427 million (December 31, 2015: RMB1,363 million) were recognized for tax losses and deductible temporary differences carried forward to the extent that the realization of the related tax benefit is probable. The recognition of these deferred tax assets is supported by forecast of future taxable profits available to the Group.
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12. OTHER NON-CURRENT ASSETS

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Financial assets | | |
| -Receivables from disposal of business | 4,252,776 | - |
| -Receivables from disposal of Guizhou Branch's aluminum plant and properties | 1,203,239 | 1,060,682 |
| -Other long-term receivables | 601,446 | 305,677 |
| | 6,057,461 | 1,366,359 |
| Advances and deposits paid to suppliers | 1,153,948 | - |
| Prepayment for mining rights | 773,113 | 769,108 |
| Long-term prepaid expenses | 313,000 | 389,076 |
| Deferred losses for sales and lease back transactions (Note) | 1,132,492 | 1,172,671 |
| Others | 403,165 | 490,907 |
| | 3,775,718 | 2,821,762 |
| | 9,833,179 | 4,188,121 |

Note: As disclosed in note 21, the Group entered into several sales and leaseback agreements which constitute finance leases during the year of 2015 and 2016. The deferred losses resulted from the sale are classified as other non-current assets and were amortized over the useful lives of the assets leased back.

As at December 31, 2016, all amounts were denominated in RMB (December 31, 2015, except for an amount included in receivables from disposal of business amounting to RMB2,684 million, an amount included in advances and deposits paid to suppliers amounting to RMB1,115 million which were denominated in USD, all amounts in other non-current assets were denominated in RMB).

As at December 31, 2016, except for a loan to Shanxi Huaxing (December 31, 2015: except for receivables from disposal of business, a prepayment paid to a supplier and a loan to Shanxi Huaxing) which was interest-bearing asset, all amounts in other non-current assets were non-interest-bearing (December 31, 2015: all non-interest-bearing).

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13. INVENTORIES

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Raw materials | 8,753,234 | 8,831,135 |
| Work-in-progress | 5,803,824 | 5,830,145 |
| Finished goods | 7,274,796 | 3,089,498 |
| Spare parts | 837,743 | 818,545 |
| Packaging materials and others | 41,799 | 42,359 |
| | 22,711,396 | 18,611,682 |
| Less: provision for impairment of inventories | (2,370,084) | (707,696) |
| | 20,341,312 | 17,903,986 |

Movements in the provision for impairment of inventories are as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| As at January 1 | 2,044,297 | 2,370,084 |
| Provision for impairment of inventories | 1,997,719 | 122,047 |
| Reversal arising from increase in net realisable value | (228,673) | (69,395) |
| Reversal upon sales of inventories | (1,152,179) | (1,715,040) |
| Disposal of subsidiaries | (270,741) | - |
| Transfer to assets of a disposal group classified as held for sale | (20,339) | - |
| As at December 31 | 2,370,084 | 707,696 |

As at December 31, 2016 and December 31, 2015, the Group had no pledged inventories for bank and other borrowings.

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14. TRADE AND NOTES RECEIVABLES

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Trade receivables | 4,387,011 | 4,626,725 |
| Less: provision for impairment of receivables | (510,336 ) | (462,571 ) |
| | 3,876,675 | 4,164,154 |
| Notes receivable | 1,266,811 | 3,163,027 |
| | 5,143,486 | 7,327,181 |

As at December 31, 2016, except for trade and notes receivables of the Group amounting to RMB458 million and RMB5 million which were denominated in USD and EUR (December 31, 2015: RMB646 denominated in USD), all trade and notes receivables were denominated in RMB (December 31, 2015: all in RMB).

Trade receivables are non-interest-bearing and are generally on terms of 3 to 12 months. Certain of the Group's sales were on advance payments or documents against payment. In some cases, these terms are extended for qualifying long term customers that have met specific credit requirements. As at December 31, 2016, the ageing analysis of trade and notes receivables was as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Within 1 year | 3,874,305 | 5,765,323 |
| Between 1 and 2 years | 591,321 | 557,602 |
| Between 2 and 3 years | 402,911 | 533,227 |
| Over 3 years | 785,285 | 933,600 |
| | 5,653,822 | 7,789,752 |
| Less: provision for impairment of receivables | (510,336 ) | (462,571 ) |
| | 5,143,486 | 7,327,181 |

The credit quality of trade and notes receivables that are neither past due nor impaired is assessed by reference to the counterparties' default history. As at December 31, 2015 and 2016, there was no history of default of these customers.

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14. TRADE AND NOTES RECEIVABLES (Continued)

As at December 31, 2015 and 2016, the ageing analysis of past due but not impaired trade and notes receivables was as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Past due for 1 year | 569,269 | 523,333 |
| Past due for 1 to 2 years | 127,581 | 505,774 |
| Past due for over 2 years | 429,538 | 412,028 |
| | 1,126,388 | 1,441,135 |
| Not past due | 3,872,957 | 5,688,153 |
| | 4,999,345 | 7,129,288 |

The balances of trade and notes receivables that were past due but not impaired relate to a number of individual customers for whom there was no recent history of default. Based on past experience, the directors of the Company are of the opinion that no provision for impairment is necessary in respect of these balances as there has not been a significant change in credit quality and the balances are still considered recoverable within 12 months as at December 31, 2016.

Included in the Group's trade receivables are amounts due from the Group's joint ventures of RMB38 million (December 31, 2015: RMB28 million), which are repayable on credit terms similar to those offered to the major customers of the Group.

As at December 31, 2016, the Group had pledged trade receivables amounting to RMB36 million (December 31, 2015: RMB360 million) and notes receivable amounting to RMB34 million (December 31, 2015: RMB27 million) for bank and other borrowings as set out in note 25 to the financial statements.

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14. TRADE AND NOTES RECEIVABLES (Continued)

As at December 31, 2016, trade and notes receivables of RMB660 million (December 31, 2015: RMB654 million) of the Group were impaired and provisions of RMB463 million (December 31, 2015: RMB510 million) were made. The individually impaired receivables mainly relate to customers which are in unexpected difficult economic situations and it was expected that only a portion of these receivables would be recovered. The ageing analysis of these trade receivables is as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Within 1 year | 1,348 | 77,170 |
| Between 1 and 2 years | 22,052 | 34,269 |
| Between 2 and 3 years | 275,330 | 27,453 |
| Over 3 years | 355,747 | 521,572 |
| | 654,477 | 660,464 |
| Less: provision for impairment | (510,336) | (462,571) |
| | 144,141 | 197,893 |

Movements in the provision for impairment of trade and notes receivables are as follows:

| | 2015 | 2016 |
|---|---|---|
| As at January 1 | 719,992 | 510,336 |
| Provision for impairment | 6,847 | 5,862 |
| Written off | (11,452) | (192) |
| Reversal | (179,193) | (53,435) |
| Disposal of subsidiaries | 15,644 | - |
| Transfer to assets of a disposal group classified as held for sale | (1,980) | - |
| Others | (39,522) | - |
| As at December 31, | 510,336 | 462,571 |

As at December 31, 2016, the Group derecognized discounted notes receivable accepted by banks in the PRC to financial institutions with a carrying amount in aggregate of RMB1,057 million (December 31, 2015：RMB1,021 million), and endorsed notes receivable accepted by banks in the PRC to certain of its suppliers in order to settle the trade payables due to such suppliers with a carrying amount in aggregate of RMB10,399 million (December 31, 2015: RMB13,052 million). Besides, as at December 31, 2016, the Group has not derecognized notes receivable accepted by banks in the PRC endorsed to certain of its suppliers in order to settle the trade payables due to such suppliers with a carrying amount of RMB479 million (December 31, 2015: RMB937 million).

As at December 31, 2016, the Group derecognized trade receivables amounting to RMB269 million due to accounts receivables factoring arrangement (December 31, 2015: nil).

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## 15. OTHER CURRENT ASSETS

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Financial assets | | |
| -Advances and deposits paid to suppliers | 505,072 | 714,263 |
| -Dividends receivable | 118,061 | 148,546 |
| -Receivables from sales of non-core businesses | 287,852 | 332,674 |
| -Entrusted loans and loans receivable from third parties | 1,657,849 | 1,631,624 |
| -Entrusted loans and loans receivable from related parties | 1,111,954 | 1,859,769 |
| -Receivables from disposals of businesses to related parties | 4,321,024 | 4,470,161 |
| -Receivables from disposals of non-core assets (note 36(a)(xxi)) | - | 277,956 |
| -Receivable from disposal of Shanxi Huaxing | 1,646,035 | 1,646,035 |
| -Receivables from disposal of Guizhou Branch's aluminum plant and properties | - | 200,000 |
| -Receivable from disposal of properties in Hong Kong | 218,130 | - |
| -Interest receivable | 95,304 | 111,625 |
| -Recoverable reimbursement for freight charges | 62,909 | 37,069 |
| -Other financial assets | 850,042 | 897,742 |
| | 10,874,232 | 12,327,464 |
| Less: provision for impairment | (1,666,394) | (1,665,411) |
| | 9,207,838 | 10,662,053 |

| | | |
|---|---|---|
| Receivable of value-added tax refund | 53,458 | 3,492 |
| Advances to employees | 108,223 | 31,869 |
| Value-added tax recoverable | 2,133,990 | 1,537,245 |
| Prepaid income tax | 239,186 | 104,213 |
| Prepayments to related parties for purchases | 90,897 | 118,476 |
| Prepayments to suppliers for purchases and others | 3,651,313 | 2,624,803 |
| Others | 441,329 | 168,714 |
| | 6,718,396 | 4,588,812 |
| Less: provision for impairment | (11,972) | (6,053) |
| | 6,706,424 | 4,582,759 |
| Total other current assets | 15,914,262 | 15,244,812 |

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15. OTHER CURRENT ASSETS (Continued)

As at December 31, 2016, except for an amount included in receivables from disposal of business amounting to RMB2,867 million, the amount included in advances and deposits paid to suppliers amounting to RMB1,686 million and an amount included in other items amounting to RMB161 million, which were denominated in USD (December 31, 2015: RMB2,735 million in USD, RMB218 million in HKD), all amounts in other current assets were denominated in RMB (December 31, 2015: all denominated in RMB).

As at December 31, 2016, except for entrusted loans and loans receivable, receivables from disposals of businesses and an amount included in advances and deposits paid to suppliers (December 31, 2015: except for entrusted loans and loans receivable, receivables from disposal of subsidiaries, business and assets) which were interest-bearing assets, all amounts in other current assets were non-interest-bearing (December 31, 2015: all non-interest-bearing).

As at December 31, 2015 and 2016, the ageing analysis of financial assets included in other current assets was as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Within 1 year | 3,626,122 | 1,909,712 |
| Between 1 and 2 years | 970,577 | 2,496,848 |
| Between 2 and 3 years | 4,749,149 | 1,365,830 |
| Over 3 years | 1,528,384 | 6,555,074 |
| | 10,874,232 | 12,327,464 |
| Less: provision for impairment | (1,666,394 ) | (1,665,411 ) |
| | 9,207,838 | 10,662,053 |

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15. OTHER CURRENT ASSETS (Continued)

As at December 31, 2015 and 2016, the ageing analysis of past due but not impaired financial assets included in other current assets was as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Past due for 1 year | 727,503 | 613,140 |
| Past due for 1 to 2 years | 49,140 | 741,276 |
| Past due for over 2 years | 329,337 | 467,111 |
| | 1,105,980 | 1,821,527 |
| Not past due | 7,669,714 | 8,607,761 |
| | 8,775,694 | 10,429,288 |

The credit quality of other current assets that were not impaired is assessed by reference to the counterparties' default history. Based on past experience, the directors of the Company are of the opinion that no provision for impairment is necessary in respect of these balances as there has not been a significant change in credit quality and the balances are still considered recoverable within one year.

Included in the Group's past due but not impaired financial assets are amounts due from the Group's related parties of RMB1,279 million (December 31, 2015: RMB888 million).

As at December 31, 2016, other current assets of RMB1,905 million (December 31, 2015: RMB2,133 million) of the Group were impaired and provisions of RMB1,671 million (December 31, 2015: RMB1,678 million) were made. The ageing analysis of these current assets is as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Within 1 year | 278,094 | 28,375 |
| Between 1 and 2 years | 265,415 | 38,234 |
| Between 2 and 3 years | 378,985 | 215,169 |
| Over 3 years | 1,210,774 | 1,623,436 |
| | 2,133,268 | 1,905,214 |
| Less: provision for impairment | (1,678,366) | (1,671,464) |
| | 454,902 | 233,750 |

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15. OTHER CURRENT ASSETS (Continued)

Movements in the provision for impairment of other current assets are as follows:

| | 2015 | 2016 |
|---|---|---|
| As at January 1 | 419,451 | 1,678,366 |
| Provision for impairment | - | 3,864 |
| Write off | - | (7,807) |
| Reversal | (59,804) | (2,959) |
| Disposal of subsidiaries | 1,321,712 | - |
| Transfer to non-current assets held for sale | (21) | - |
| Others | (2,972) | - |
| As at December 31, | 1,678,366 | 1,671,464 |

16. CASH AND CASH EQUIVALENTS AND RESTRICTED CASH AND TIME DEPOSITS

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Restricted cash | 1,750,239 | 2,014,747 |
| Time deposits | 51,000 | 72,700 |
| Restricted cash and time deposits | 1,801,239 | 2,087,447 |
| Cash and cash equivalents | 20,756,202 | 23,808,048 |
| | 22,557,441 | 25,895,495 |

Restricted cash mainly represented deposits held for use in issued notes payable and letters of credit.

As at December 31, 2016, the Group had time deposits amounting to RMB73 million (December 31, 2015: RMB51 million ), of which the annual effective interest rate was 1.48% (December 31, 2015: 1.39% ) with average maturity of three months to one year time deposits.

As at December 31, 2015 and 2016, bank balances and cash on hand of the Group were denominated in the following currencies:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| RMB | 21,056,584 | 20,542,932 |
| USD | 1,492,849 | 5,343,559 |

| | | |
|---|---|---|
| HKD | 2,968 | 6,252 |
| EUR | 753 | 24 |
| AUD | 2,476 | 2,625 |
| IDR | 1,811 | 103 |
| | 22,557,441 | 25,895,495 |

Cash at banks earns interest at floating rates based on daily bank deposit rates. The bank balances, time deposit and restricted cash are deposited with creditworthy banks with no recent history of default.

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17. ASSETS AND LIABILITIES OF A DISPOSAL GROUP CLASSIFIED AS HELD FOR SALE AND NON-CURRENT ASSETS HELD FOR SALE

(a) Assets and liabilities of a disposal group classified as held for sale

Certain assets and liabilities of Chalco Shandong Co., Ltd.* ( 東 ) ("Chalco Shandong") have been presented a held for sale following the assets exchange agreement signed on June 25, 2015 to exchange certain assets and liabilities with Shandong Aluminum Corporation* ( 東 ) ("Shandong Aluminum"), a subsidiary of Chinalco. In accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations, the assets and liabilities of Chalco Shandong to be exchanged under the assets exchange agreement are classified as assets and liabilities of a disposal group held for sale, respectively.

The major classes of assets and liabilities of Chalco Shandong classified as held for sale as at December 31, 2015 are as follows:

| | |
|---|---|
| Carrying amount after classification as held for sale | |
| Property, plant and equipment (note 6) | 66,615 |
| Other assets | 133,572 |
| Assets of a disposal group classified as held for sale | 200,187 |
| Trade payables | 22,522 |
| Other liabilities | 1,343 |
| Liabilities of a disposal group classified as held for sale | 23,865 |
| Net carrying amount of a disposal group | 176,322 |

*The English names represent the best effort by the management of the Group in translating their Chinese names as they do not have any official English names.

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17. ASSETS AND LIABILITIES OF A DISPOSAL GROUP CLASSIFIED AS HELD FOR SALE AND NON-CURRENT ASSETS HELD FOR SALE

(b) Non-current assets held for sale

In November 2015, the Company, Chinalco and Chinalco Capital which was a wholly-owned subsidiary of Chinalco, entered into the Capital Contribution Agreement (the "Chinalco Capital Capital Increase Agreement"), pursuant to which, the Company made a capital injection to Chinalco Capital by way of 15% equity interest held by the Company in ABC-CA and cash of RMB150 million in return for equity interest in Chinalco Capital. The appraised value of equity interest in ABC-CA is RMB1,888 million, 15% of which is valued at RMB283 million.

As of December 31, 2015, the directors of the Company consider the capital injection will be completed during 2016. Hence, the Company reclassified 15% equity interest in ABC-CA as held-for-sale non-current assets based on its carrying value as of December 31, 2015.

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18. SHARE CAPITAL

| | Number of shares in issue | | Share capital | Share premium |
|---|---|---|---|---|
| | A shares | H shares | | |
| At January 1, 2015 | 9,580,522 | 3,943,966 | 13,524,488 | 14,059,029 |
| Business combination under common control | - | - | - | (37,662 ) |
| Issuance of A shares | 1,379,310 | - | 1,379,310 | 6,518,162 |
| At December 31, 2015 and January 1, 2016 | 10,959,832 | 3,943,966 | 14,903,798 | 20,539,529 |
| Business combination under common control (note 39) | - | - | - | (3,010,627 ) |
| Capital injection from non-controlling shareholders | - | - | - | 176,615 |
| At December 31, 2016 | 10,959,832 | 3,943,966 | 14,903,798 | 17,705,517 |

Note: As at December 31, 2015 and 2016, all issued shares were registered and fully paid. Both A shares and H shares rank pari passu with each other.

The number of the Company's authorized ordinary shares was 14,903,798,236 at par value of RMB1.00 per share as at December 31, 2015 and 2016. There were 14,903,798,236 ordinary shares issued and outstanding as at December 31, 2015 and 2016, respectively.

19. RESERVES

The amounts of the Group's reserves and the movements therein for the current and prior years are presented in the consolidated statement of changes in equity on pages F12 to F14 of the financial statements.

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20. INTEREST BEARING LOANS AND BORROWINGS

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Long-term loans and borrowings | | |
| Finance lease payables (note 21) | 6,710,517 | 6,692,302 |
| Bank and other loans (Note (a)) | | |
| — Secured (Note (f)) | 14,202,953 | 13,415,140 |
| — Guaranteed (Note (e)) | 1,791,207 | 2,088,327 |
| — Unsecured | 16,617,591 | 16,196,805 |
| | 32,611,751 | 31,700,272 |
| Medium-term notes and bonds and long-term bonds (Note (b)) | | |
| — Guaranteed (Note (e)) | 1,996,270 | 1,998,833 |
| — Unsecured | 25,715,582 | 22,058,281 |
| | 27,711,852 | 24,057,114 |
| Total long-term loans and borrowings | 67,034,120 | 62,449,688 |
| Current portion of finance lease payables (note 21) | (1,531,554 ) | (2,008,716 ) |
| Current portion of medium-term notes | (6,896,181 ) | (8,393,073 ) |
| Current portion of long-term bank and other loans | (4,605,511 ) | (4,725,151 ) |
| Non-current portion of long-term loans and borrowings | 54,000,874 | 47,322,748 |

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20. INTEREST BEARING LOANS AND BORROWINGS (Continued)

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Short-term loans and borrowings | | |
| Bank and other loans (Note (c)) | | |
| — Secured (Note (f)) | 2,201,584 | 1,709,500 |
| — Guaranteed (Note (e)) | 415,000 | 305,000 |
| — Unsecured | 32,447,703 | 30,140,325 |
| | 35,064,287 | 32,154,825 |
| Short-term bonds, unsecured (Note (d)) | 6,663,722 | 8,020,015 |
| Gold leasing arrangements (Note (g)) | - | 2,990,614 |
| Current portion of finance lease payable (Note 21) | 1,531,554 | 2,008,716 |
| Current portion of medium-term notes | 6,896,181 | 8,393,073 |
| Current portion of long-term bank and other loans | 4,605,511 | 4,725,151 |
| Total short-term borrowings and current portion of long-term loans and borrowings | 54,761,255 | 58,292,394 |

As at December 31, 2016, except for loans and borrowings of the Group amounting to RMB23 million (December 31, 2015: RMB23 million) and RMB1,572 million (December 31, 2015: RMB3,711 million) which were denominated in JPY and USD, respectively, all loans and borrowings were denominated in RMB.

As at December 31, 2016, interest-bearing loans and borrowings of RMB4,021 million including a finance lease payable of RMB106 million (December 31, 2015: interest-bearing loans and borrowings of RMB4,849 million including a finance lease payable of RMB220 million), a finance lease payable of RMB1,730 million (December 31, 2015: RMB1,221 million) and interest-bearing loans and borrowings of RMB300 million (December 31, 2015: RMB300 million ) were due to Chinalco Finance Company Limited ("Chinalco Finance") ( 財務 責任 ), Chinalco Financial Leasing Co., Ltd. * ("CFL") ( 融資租賃 ) and Shandong Aluminum subsidiaries of Chinalco, respectively, as set out in note 36(b).

*The English name represents the best effort by the management of the Group in translating its Chinese names as it does not have any official English names.

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20. INTEREST BEARING LOANS AND BORROWINGS (Continued)

Note:

(a) Long-term bank and other loans

(i) The maturity of long-term bank and other loans is set out below：

| | Loans from banks and other financial institutions | | Other loans | | Total of long-term bank and other loans | |
|---|---|---|---|---|---|---|
| | December 31, 2015 | December 31, 2016 | December 31, 2015 | December 31, 2016 | December 31, 2015 | December 31, 2016 |
| Within 1 year | 4,603,619 | 4,718,809 | 1,892 | 6,342 | 4,605,511 | 4,725,151 |
| Between 1 and 2 years | 4,864,765 | 7,994,380 | 2,020 | 6,342 | 4,866,785 | 8,000,722 |
| Between 2 and 5 years | 13,888,643 | 10,268,857 | 6,060 | 7,026 | 13,894,703 | 10,275,883 |
| Over 5 years | 9,231,751 | 8,687,124 | 13,001 | 11,392 | 9,244,752 | 8,698,516 |
| | 32,588,778 | 31,669,170 | 22,973 | 31,102 | 32,611,751 | 31,700,272 |

(ii) Other loans were provided by local bureaus of the Ministry of Finance to the Group. The weighted average annual interest rate of long-term bank and other loans for the year ended December 31, 2016 was 5.08% (2015: 5.51%).

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20. INTEREST BEARING LOANS AND BORROWINGS (Continued)

Note: (Continued)

(b) Medium-term notes and bonds and long-term bonds

Outstanding long-term bonds and medium-term notes of the Group as at December 31, 2016 are summarized as follows:

| | Face value /maturity | Effective interest rate | December 31, 2015 | December 31, 2016 |
|---|---|---|---|---|
| 2007 long-term bonds | 2,000,000/2017 | 4.64 % | 1,996,270 | 1,998,833 |
| 2011 medium-term notes | 4,900,000/2016 | 6.03 % | 4,898,376 | - |
| 2015 medium-term notes | 3,000,000/2018 | 5.53 % | 2,981,028 | 2,989,992 |
| 2015 medium-term notes | 1,500,000/2018 | 5.01 % | 1,487,994 | 1,492,351 |
| 2012 Ningxia Energy medium-term bonds | 400,000/2017 | 6.06 % | 400,000 | 400,000 |
| 2012 medium-term bonds | 3,000,000/2017 | 5.77 % | 2,992,788 | 2,996,618 |
| 2013 medium-term bonds | 3,000,000/2018 | 5.99 % | 2,987,271 | 2,993,272 |
| 2013 medium-term bonds | 2,000,000/2016 | 5.99 % | 1,997,805 | - |
| 2014 medium-term bonds | 3,000,000/2017 | 7.35 % | 2,988,140 | 2,997,622 |
| 2015 medium-term bonds | 3,000,000/2018 | 6.11 % | 2,993,630 | 2,996,615 |
| 2015 medium-term bonds | 2,000,000/2018 | 6.08 % | 1,988,550 | 1,993,474 |
| 2016 private placement notes | 3,215,000/2019 | 5.12 % | - | 3,198,337 |
| | | | 27,711,852 | 24,057,114 |

Long-term bonds and medium-term notes and bonds were issued for capital expenditure purposes, operating cash flows and bank loan re-financing.

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20. INTEREST BEARING LOANS AND BORROWINGS (Continued)

Note: (Continued)

(c) Short-term bank and other loans

Other loans were entrusted loans provided by state-owned companies to the Group.

The weighted average annual interest rate of short-term bank and other loans for the year ended December 31, 2016 was 4.44% (2015: 5.12%).

(d) Short-term bonds

Outstanding short-term bonds as at December 31, 2016 are summarized as follows:

| | Face value /maturity | Effective interest rate | December 31, 2015 | December 31, 2016 |
|---|---|---|---|---|
| 2015 short-term bonds | 3,000,000/2016 | 4.15 % | 3,047,356 | - |
| 2015 short-term bonds | 3,000,000/2016 | 3.85 % | 3,016,366 | - |
| 2015 short-term bonds | 600,000/2016 | 3.35 % | 600,000 | - |
| 2016 short-term bonds | 1,500,000/2017 | 4.30 % | - | 1,535,140 |
| 2016 short-term bonds | 3,000,000/2017 | 4.13 % | - | 3,047,026 |
| 2016 short-term bonds | 3,000,000/2017 | 3.95 % | - | 3,037,849 |
| 2016 short-term bonds | 400,000/2017 | 4.13 % | - | 400,000 |
| | | | 6,663,722 | 8,020,015 |

All the above short-term bonds were issued for working capital needs.
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20. INTEREST BEARING LOANS AND BORROWINGS (Continued)

Note: (Continued)

(e) Guaranteed interest-bearing loans and borrowings

Details of the interest-bearing loans and borrowings in which the Group received guarantees are set out as follows:

| Guarantors | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Long-term bonds | | |
| Bank of Communications ( 通銀行 ) ("BOCOM") | 1,996,270 | 1,998,833 |
| Long-term loans | | |
| Lanzhou Aluminum Factory*(蘭州 廠) (Note (i)) | 12,000 | 8,000 |
| The Company | 749,207 | 866,877 |
| Ningxia Energy (Note (ii)) | 827,600 | 1,099,400 |
| Yinxing Energy (Note (ii)) | 202,400 | 109,000 |
| Zhongwei Renewable Energy Co., Ltd* ( 衛寧電新能源 ) (Note (ii)) | - | 5,050 |
| | 1,791,207 | 2,088,327 |
| Short-term loans | | |
| Ningxia Energy (Note (ii)) | 50,000 | 120,000 |
| Yinxing Energy (Note (ii)) | 50,000 | - |
| Shandong Aluminum (Note (i)) | 15,000 | 15,000 |
| Chalco Shandong (Note (ii)) | - | 170,000 |
| Chalco Trading (Note (ii)) | 300,000 | - |
| | 415,000 | 305,000 |

Note:

(i) The guarantor is a subsidiary of Chinalco.

(ii) The guarantor is a subsidiary of the Group.

*The English names represent the best effort made by the management of the Group in translating their Chinese names as they do not have any official English names.

(f) Secured interest-bearing loans and borrowings

The assets pledged for bank and other borrowings were set out in note 25 to the financial statements.

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20. INTEREST-BEARING LOANS AND BORROWINGS (Continued)

Note: (Continued)

(g) Gold leasing arrangements

On June 6, 2016, the Company entered into a gold leasing operational agreement, four gold leasing agreements and a general hedging agreement with BOCOM, pursuant to which the Company developed gold leasing for working capital financing purposes.

According to the gold leasing operational agreement and gold leasing agreements, the Group leased from BOCOM standard gold with fineness of Au99.99 for 12 months with annual lease fee rates from 3.61% to 3.70%. Then, the Group sold the leased gold back to BOCOM at the predetermined price and received cash of RMB3,000 million. The Group has paid an upfront lease fee amounting to RMB86.4 million at the beginning of the lease period. Upon the expiry of the leasing term, the Group shall purchase the same amount of gold with fineness of Au99.99 from BOCOM at the predetermined price pursuant to the general hedging agreement, and return the standard gold with same quality as those under the gold leasing agreements.

The directors of the Company are of view that the gold leasing operational agreement, gold leasing agreements and the general hedging agreement are planned, determined and operated as an integrated transaction, through which the Group is free from the risks of gold price fluctuations, and therefore, should be accounted for as loans from BOCOM with fixed interest rates.

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21. FINANCE LEASE PAYABLES

As disclosed in note 6, the Group leased certain machineries under finance leases with lease terms ranging from one to five years.At December 31, 2016, the total future minimum lease payments under finance leases and their present values are as follows:

| | Minimum lease payments | | Present value of minimum lease payments | |
|---|---|---|---|---|
| | December 31, 2015 | December 31, 2016 | December 31, 2015 | December 31, 2016 |
| Amounts payable: | | | | |
| Within one year | 1,839,080 | 2,253,720 | 1,531,554 | 2,008,716 |
| In the second year | 1,824,654 | 2,068,315 | 1,553,769 | 1,891,406 |
| In the third to fifth years, inclusive | 3,765,416 | 2,895,251 | 3,625,194 | 2,792,180 |
| Total minimum finance lease payment | 7,429,150 | 7,217,286 | 6,710,517 | 6,692,302 |
| Future finance charges | (718,633) | (524,984) | | |
| Total net finance lease payables (note 21) | 6,710,517 | 6,692,302 | | |
| Portion classified as current liabilities (note 20) | (1,531,554) | (2,008,716) | | |
| Non-current portion | 5,178,963 | 4,683,586 | | |

During 2015 and 2016, the Group entered into various sale and leaseback agreements with CCB Financial Leasing Co., Ltd* (建信金融租賃 ), Ruize International Financial Leasing Co., Ltd.* (瑞澤 租賃 ), Guohong Financial Leasing Co., Ltd.* ( 宏融資租賃 ), Caterpillar Financial Leasing Co., Ltd.* (卡特皮勒融資租賃 ), Chongqing Transportation Equipment Financing Lease Co., Ltd* (重慶市 通設備融資租賃 ), Taiping Sinopec Financial Leasing Co., Ltd.* (太平石化金融租賃 ), Pingan International Financial Leasing Co., Ltd.* (平安 融資租賃 ), JIC Leasing (Shanghai) Co., Ltd.* ( 建投租賃(上海) 責任 ) and CFL, which is a related party of the Group, respectively, under which the Group sold machineries and construction in progress and leased them back. The lease terms range from one to five years and the lease rentals are payable by instalments with bearing interest at prevailing lending rates. Regarding the agreement of sales and leaseback with CFL, unless the rental are paid in full, no dividends would be distributed from Guangxi Branch, Lanzhou Branch, Shanxi Branch, Chalco Zhongzhou, Chalco Shandong, Baotou Aluminum, Guizhou Huajin, Zunyi Alumina and Wangwa Coal Co., Ltd.*("王窪煤 ") to their shareholders. Upon the expiry of the lease period, the Group is entitled to purchase the leased assets at nominal amount.

The Group disposed of the assets under the sales and leaseback arrangements and incurred losses and gains of RMB234 million (2015: RMB1,066 million) and RMB112 million (2015: RMB92 million) , respectively, which were amortized over their respective useful lives of the assets. The Internal Rate of Return (IRR) of the sales and finance lease back arrangements range from 4.76% to 6.28%.

*The English name represents the best effort made by the management of the Group in translating its Chinese name as it does not have any official English names.

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22. OTHER NON-CURRENT LIABILITIES

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Financial liabilities | | |
| -Long-term payables for mining rights | 797,694 | 789,420 |
| -Other financial liabilities | 300 | 300 |
| | 797,994 | 789,720 |
| Obligations in relation to early retirement schemes (Note (i)) | 827,305 | 674,835 |
| Deferred government grants | 1,529,545 | 1,466,656 |
| Deferred gain relating to sales and lease back agreements (Note (ii)) | 88,955 | 193,724 |
| Provision for rehabilitation | 100,285 | 106,769 |
| Others | 6,475 | 6,037 |
| | 2,552,565 | 2,448,021 |
| | 3,350,559 | 3,237,741 |

Note:

(i) Obligations in relation to early retirement schemes

From 2010, certain subsidiaries and branches implemented certain early retirement benefit schemes which allow qualified employees to early retire on a voluntary basis. The Group undertakes the obligations to pay the early retirement employees' living expenses for no more than five years in the future on a monthly basis according to the early retirement benefit schemes, together with social insurance and housing fund pursuant to the regulation of the local Social Security Office. Living expenses, social insurance and the housing fund are together referred to as "the Payments". The Payments are forecasted to increase by 3% per annum with reference to the inflation rate and adjusted based on the average death rate in China. The Payments are discounted by the treasury bond rate of December 31, 2015 and 2016 respectively. As at December 31, 2015 and 2016, the current portion of the Payments within one year was reclassified to "other payables and accrued liabilities".

As at December 31, 2015 and 2016, obligations in relation to retirement benefits under the Group's early retirement schemes are as follows:

| | 2015 | 2016 |
|---|---|---|
| As at January 1 | 1,374,101 | 1,147,320 |
| Provision made during the year (note30) | 34,893 | 132,044 |
| Interest costs | 14,007 | 84,616 |
| Payment during the year | (275,681 ) | (367,382 ) |
| As at December 31, | 1,147,320 | 996,598 |

| | | |
|---|---|---|
| Non-current | 827,305 | 674,835 |
| Current (note 23) | 320,015 | 321,763 |
| | 1,147,320 | 996,598 |

(ii) As disclosed in note 21, the Group entered into several sales and lease back agreements which were finance leases during the years. The deferred gains resulting from the sale were classified under other non-current liabilities and were amortized over the useful lives of the assets leased back.

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## 23. OTHER PAYABLES AND ACCRUED LIABILITIES

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Financial liabilities | | |
| -Payable for capital expenditures | 5,338,218 | 5,654,992 |
| -Accrued interest | 1,112,849 | 1,068,657 |
| -Payables withheld as guarantees and deposits | 1,088,352 | 1,075,289 |
| -Dividends payable by subsidiaries to non-controlling shareholders | 233,036 | 221,496 |
| -Consideration payable for investment projects | 98,966 | 305,506 |
| -Current portion of payables for mining rights | 218,158 | 337,659 |
| -Others | 1,040,969 | 900,771 |
| | 9,130,548 | 9,564,370 |
| Sales and other deposits from customers | 1,652,576 | 1,799,200 |
| Taxes other than income taxes payable (Note) | 385,654 | 713,450 |
| Accrued payroll and bonus | 183,781 | 218,741 |
| Staff welfare payables | 276,469 | 277,064 |
| Current portion of obligation in relation to early retirement schemes (note 22) | 320,015 | 321,763 |
| Contribution payable for pension insurance | 123,381 | 109,077 |
| Others | 18,146 | 3,013 |
| | 2,960,022 | 3,442,308 |
| | 12,090,570 | 13,006,678 |

Note: Taxes other than income taxes payable mainly comprise accruals for value-added tax, resource tax, city construction tax and education surcharge.

As at December 31, 2016, except for other payables and accrued liabilities of the Group amounting to RMB251 million and RMB0.022 million which were denominated in USD and EUR, respectively (December 31, 2015: RMB4 million in USD, RMB0.311 million denominated in HKD), all payables and accrued liabilities were denominated in RMB (December 31, 2015: all denominated in RMB).

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24. TRADE AND NOTES PAYABLES

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Trade payables | 7,991,868 | 6,682,225 |
| Notes payable | 6,734,676 | 4,603,109 |
| | 14,726,544 | 11,285,334 |

As at December 31, 2016, except for trade and notes payables of the Group amounting to RMB22 million which were denominated in USD (December 31, 2015: RMB228 million in USD), all trade and notes payables were denominated in RMB (December 31, 2015: all denominated in RMB).

The ageing analysis of trade and notes payables is as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Within 1 year | 14,234,715 | 10,719,901 |
| Between 1 and 2 years | 248,656 | 276,179 |
| Between 2 and 3 years | 55,067 | 107,125 |
| Over 3 years | 188,106 | 182,129 |
| | 14,726,544 | 11,285,334 |

The trade and notes payables are non-interest-bearing and are normally settled within one year.

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## 25. PLEDGE OF ASSETS

The Group has pledged various assets as collateral against certain secured borrowings as set out in note 20. As at December 31, 2015 and 2016, a summary of these pledged assets was as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Property, plant and equipment (note 6) | 6,102,859 | 6,456,488 |
| Land use rights (note 8) | 257,610 | 254,339 |
| Intangible assets (note 5) | 1,241,057 | 1,114,454 |
| Investment in an associate (note 9(b)) | 421,270 | 376,270 |
| Notes receivable (note 14) | 26,500 | 33,500 |
| Trade receivables (note 14) | 360,000 | 35,836 |
| | 8,409,296 | 8,270,887 |

As at December 31, 2016, in addition to the loans and borrowings which were pledged by the above assets, the current portion of long-term loans and borrowings amounting to RMB933 million (December 31, 2015: RMB882 million) and the non-current portion of long-term loans and borrowings amounting to RMB8,956 million (December 31, 2015: RMB10,384 million) were secured by the contractual right to charge users for electricity generated in the future. As at December 31, 2016, the current portion of long-term loans and borrowings amounting to RMB10 million (December 31, 2015: RMB10 million) and the non-current portion of long-term loans and borrowings amounting to RMB1,657 million (December 31, 2015: RMB1,667 million) were secured by the investment in a 70.82% owned subsidiary of the Company, Ningxia Energy.

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## 26. PROFIT/(LOSS) BEFORE INCOME TAX

An analysis of profit or loss before income tax is as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Purchase of inventories in relation to trading activities | 71,647,273 | 60,318,158 | 79,682,085 |
| Raw materials and consumables used | 34,897,297 | 28,948,534 | 25,478,373 |
| Changes in work-in-progress and finished goods | 1,014,376 | 523,390 | 1,667,696 |
| Power and utilities | 17,740,895 | 15,835,191 | 12,980,854 |
| Depreciation and amortization | 7,551,278 | 7,374,743 | 6,969,947 |
| Employee benefit expenses (note 30) | 8,170,193 | 6,103,869 | 5,887,632 |
| Repair and maintenance | 1,857,471 | 1,797,254 | 1,354,372 |
| Transportation expenses | 1,058,781 | 1,152,027 | 1,493,223 |
| Logistic cost | - | - | 796,231 |
| Taxes other than income tax expense (Note (i)) | 524,678 | 567,157 | 690,718 |
| Rental expenses for land use rights and buildings | 713,001 | 664,917 | 511,189 |
| Packaging expenses | 249,843 | 272,558 | 235,929 |
| Research and development expenses | 293,766 | 168,870 | 168,862 |
| Auditors' remuneration expense (Note (ii)) | 25,176 | 23,666 | 26,006 |

Note:
(i) Taxes other than income tax expense mainly comprise surcharges, land use tax, property tax and stamp duty.

(ii) During the year ended December 31, 2016, auditors' remuneration included audit and non-audit services provided by Ernst & Young, including Ernst & Young Hong Kong, Ernst & Young Hua Ming LLP and Ernst & Young (China) Advisory Limited, amounting to RMB23.7 million (2014: RMB22.2 million, 2015: RMB23.3 million), and services provided by other auditors.

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27. OTHER INCOME

For the year ended December 31, 2016, government grants amounting to RMB745 million (2014: RMB824 million, 2015: RMB1,771 million ) were recognized as income for the year necessary to compensate the costs and facilitate the Group's development. There are no unfulfilled conditions or contingencies attached to the grants.

28. OTHER GAINS, NET

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Gain on disposal of investments in associates | - | 832,369 | 128,833 |
| Gain on disposal of Shanxi Huaxing | - | 2,588,134 | - |
| Gain on disposal and dividends of available for sale | - | - | 125,024 |
| Realized gains/(loss) on futures, forward and option contracts, net (Note) | 156,617 | (477,733 ) | (1,290,267) |
| Unrealized gains/(loss) on futures, forward and option contracts, net (Note) | 110,250 | (213,085 ) | 154,585 |
| Gain on disposal of the Environmental Protection Business (note 40) | - | - | 571,270 |
| Gain on disposal of aluminum plant and buildings of Guizhou Branch | - | 1,364,821 | - |
| Gain on disposal of Hong Kong properties | - | 209,735 | - |
| Gain on disposal of urban properties and land use rights for capital injection | - | 350,218 | - |
| Gain on disposal of Gansu Hualu land use right | - | 375,025 | - |
| (Loss)/gain on disposal of other property, plant and equipment and land use rights, net | (44,144 ) | 18,075 | 245,248 |
| Gain on investments in financial products | 71,023 | 38,469 | 15,905 |
| Others | 63,183 | (62,428 ) | 216,035 |
| | 356,929 | 5,023,600 | 166,633 |

Note: None of these futures, forward and option contracts is designated for hedge accounting.

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## 29. FINANCE INCOME/FINANCE COSTS

An analysis of finance income/finance costs is as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Finance income - interest income | (1,047,631) | (812,367) | (815,678) |
| Interest expense | 7,132,224 | 6,101,468 | 5,154,375 |
| Less: interest expense capitalized in property, plant and equipment (note 6) | (532,695) | (522,053) | (414,133) |
| Interest expense, net of capitalized interest | 6,599,529 | 5,579,415 | 4,740,242 |
| Amortization of unrecognized finance expenses | 123,881 | 285,727 | 324,701 |
| Exchange loss/(gain), net | 10,464 | 95,851 | (60,228) |
| Finance costs | 6,733,874 | 5,960,993 | 5,004,715 |
| Finance costs, net | 5,686,243 | 5,148,626 | 4,189,037 |
| Capitalization rate during the year (note 6) | 5.80% to 7.10% | 4.90% to 6.55% | 3.85% to 6.00% |

## 30. EMPLOYEE BENEFIT EXPENSES

An analysis of employee benefit expenses is as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Salaries and bonus | 4,327,935 | 3,976,468 | 3,845,959 |
| Housing fund | 424,457 | 395,246 | 387,534 |
| Staff welfare and other expenses (Note) | 1,881,515 | 1,670,509 | 1,493,088 |
| Employment expense in relation to early retirement schemes (note 22) | 1,360,284 | 34,893 | 132,044 |
| Employment expenses in relation to termination benefit | 176,002 | 26,753 | 29,007 |
| | 8,170,193 | 6,103,869 | 5,887,632 |

Note: Staff welfare and other expenses include staff welfare, staff union expenses, staff education expenses, unemployment insurance expenses and pension insurance expenses, etc.

Employee benefit expenses include remuneration payables to directors, supervisors and senior management as set out in note 31.

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31. DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S REMUNERATION

(a) Directors' and supervisors' remuneration

The aggregate amounts of remuneration payables to directors and supervisors of the Company during the year are as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Fees | 622 | 653 | 762 |
| Basic salaries, housing fund, other allowances and benefits in kind | 2,590 | 1,143 | 975 |
| Discretionary bonus | - | - | - |
| Pension cost | 316 | 140 | 114 |
| | 3,528 | 1,936 | 1,851 |

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31. DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S REMUNERATION (Continued)

(a) Directors' and supervisors' remuneration (Continued)

The remuneration of each director and supervisor of the Company for the year ended December 31, 2014 is set out below:

| Name of directors and supervisors | Fees | Salary | Discretionary bonus | Pension | Total |
|---|---|---|---|---|---|
| Directors: | | | | | |
| Xiong Weiping | - | 606 | - | 63 | 669 |
| Luo Jianchuan | - | 528 | - | 63 | 591 |
| Liu Xiangmin | - | 515 | - | 63 | 578 |
| Jiang Yinggang | - | 491 | - | 63 | 554 |
| Wu Jianchang (Note (i)) | 94 | - | - | - | 94 |
| Ma Si-hang, Frederick (Note (ii)) | 189 | - | - | - | 189 |
| Wu Zhenfang (Note (iii)) | 189 | - | - | - | 189 |
| Wang Jun (Note (iv)) | 150 | - | - | - | 150 |
| Liu Caiming (Note (v)) | - | - | - | - | - |
| Sun Zhaoxue (Note (vi)) | - | - | - | - | - |
| | 622 | 2,140 | - | 252 | 3,014 |
| Supervisors: | | | | | |
| Zhao Zhao | - | - | - | - | - |
| Yuan Li | - | 450 | - | 64 | 514 |
| Zhang Zhankui | - | - | - | - | - |
| | - | 450 | - | 64 | 514 |
| Total | 622 | 2,590 | - | 316 | 3,528 |

Note:

(i) On June 27, 2014, Wu Jianchang resigned due to the age, which took effect on February 26, 2015.
(ii) Ma Si-hang, Frederick was appointed as director at the 2012 general meeting of shareholders on June 27, 2013.
(iii) Wu Zhenfang was appointed as director at the 2013 first extraordinary general meeting of Shareholders on August 30, 2013.
(iv) Wang Jun was appointed as director at the 2012 general meeting of Shareholders on June 27, 2013.
(v) On March 18, 2014, Liu Caiming resigned from the position of a non-executive director. On February 26, 2015, Liu Caiming returned to the position of a non-executive director.
(vi) On September 16, 2014, Sun Zhaoxue resigned from the position of a non-executive director and a vice president, and he was under investigation.

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31. DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S REMUNERATION (Continued)

(a) Directors' and supervisors' remuneration (Continued)

The remuneration of each director and supervisor of the Company for the year ended December 31, 2015 is set out below:

| Names of directors and supervisors | Fees | Salaries | Discretionary bonus | Pension costs | total |
|---|---|---|---|---|---|
| Directors: | | | | | |
| Ge Honglin (Note (i)) | - | - | - | - | - |
| Ao Hong (Note (ii)) | - | - | - | - | - |
| Luo Jianchuan (Note (ii)) | - | - | - | - | - |
| Liu Xiangmin | - | - | - | - | - |
| Jiang Yinggang | - | 643 | - | 70 | 713 |
| Liu Caiming (Note (iii)) | - | - | - | - | - |
| Wang Jun | 150 | - | - | - | 150 |
| Ma Si-hang, Frederick (Note (iv)) | 192 | - | - | - | 192 |
| Lie-A-Cheong Tai-Chong, David (Note (iv)) | - | - | - | - | - |
| Chen Lijie (Note (v)) | 162 | - | - | - | 162 |
| Hu Shihai (Note (vi)) | 102 | - | - | - | 102 |
| Wu Zhenfang (Note (ix)) | 47 | - | - | - | 47 |
| Wu Jianchang (Note (x)) | - | - | - | - | - |
| | 653 | 643 | - | 70 | 1,366 |
| Supervisors: | | | | | |
| Zhao Zhao | - | - | - | - | - |
| Yuan Li | - | 500 | - | 70 | 570 |
| Zhang Zhankui (Note (vii)) | - | - | - | - | - |
| Wang Jun (Note (viii)) | - | - | - | - | - |
| | - | 500 | - | 70 | 570 |
| Total | 653 | 1,143 | - | 140 | 1,936 |

Note:

(i) Mr. Ge Honglin was elected as an executive director of the Company at the 2015 first extraordinary general meeting of the Company and he was elected as the chairman of the Board of the Company at the sixteenth meeting of the fifth session of the Board of the Company. On February 16, 2016, Mr. Ge proposed to resign as an executive Director, the chairman of the Board and from each of his positions in relevant special committees under the Board of the Company due to his work commitment.

(ii) On November 20, 2015, due to work arrangement, Mr. Luo Jianchuan resigned from the Executive Director and President of the Company, along with all the duties of various special committees. Mr. Ao Hong was elected to be the Executive Director in the second extraordinary shareholders' meeting in 2015 of the fifth session of the board of directors.

(iii) Mr. Liu Caiming was elected as a non-executive director of the fifth session of the Board of the Company at the 2015 first extraordinary general meeting of the Company.

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31. DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S REMUNERATION (Continued)

(a) Directors' and supervisors' remuneration (Continued)

Note: (Continued)

(iv) On November 12, 2015, due to other work arrangement, Mr. Ma Si-hang resigned as an independent non-executive director and relevant duties of various special committees of the board of directors. Through the review of the election nomination committee of the fifth session of the board of directors and discussion of board of directors' 23th meeting, Mr. Lie-A-Cheong Tai-Chong, David was nominated to be the candidate of Non-executive Director. In the second extraordinary shareholders meeting in 2015, he was elected to be independent non-executive director of the fifth session of the board of directors.

(v) Ms. Chen Lijie was elected as an independent non-executive director of the fifth session of the Board of the Company at the 2015 first extraordinary general meeting of the Company.

(vi) Mr. Hu Shihai was elected as an independent non-executive director of the fifth session of the Board of the Company at the 2015 annual general meeting of the Company.

(vii) On November 13, 2015, due to other work arrangement, Mr. Zhang Zhankui resigned as a supervisor of the Group. On November 13, 2015, Mr. Zhang Zhankui was appointed as chief financial officer.

(viii) The controlling shareholder, Chinalco nominated Mr. Wang Jun as the candidate for the supervisor of the fifth session of the board of supervisors. Mr. Wang Jun was elected to be supervisor of the fifth session of the board of supervisors.

(ix) On April 2, 2015, due to being under an investigation by the competent authority, Mr. Wu Zhenfang resigned as an independent non-executive Director and from relevant positions in the special committees under the Board of the Company by submitting a resignation to the Board.

(x) Due to his age, Mr. Wu Jianchang resigned from the position of independent Non-executive Director of the Company, with effect from February 26, 2015.

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31. DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S REMUNERATION (Continued)

(a) Directors' and supervisors' remuneration (Continued)

The remuneration of each director and supervisor of the Company for the year ended December 31, 2016 is set out below:

| Names of directors and supervisors | Fees | Salaries | Discretionary bonus | Pension costs | total |
|---|---|---|---|---|---|
| Directors: | | | | | |
| Ge Honglin (Note (i)) | - | - | - | - | - |
| Yu Dehui (Note (ii)) | - | - | - | - | - |
| Ao Hong | - | - | - | - | - |
| Lu Dongliang(Note (iii)) | - | - | - | - | - |
| Jiang Yinggang | - | 725 | - | 76 | 801 |
| Liu Caiming | - | - | - | - | - |
| Wang Jun | 150 | - | - | - | 150 |
| Lie-A-Cheong Tai-Chong, David | 204 | - | - | - | 204 |
| Chen Lijie | 204 | - | - | - | 204 |
| Hu Shihai | 204 | - | - | - | 204 |
| | 762 | 725 | - | 76 | 1,563 |
| Supervisors: | | | | | |
| Liu Xiangmin (Note (iv)) | - | - | - | - | - |
| Wang Jun | - | - | - | - | - |
| Yuan Li (Note (v)) | - | - | - | - | - |
| Wu Zuoming (Note (vi)) | - | 250 | - | 38 | 288 |
| Zhao Zhao (Note (vii)) | - | - | - | - | - |
| | - | 250 | - | 38 | 288 |
| Total | 762 | 975 | - | 114 | 1,851 |

Note:

(i) Mr. Ge Honglin resigned as an executive director and the Chairman of the Board of the Company on February 16, 2016 due to his work commitment. The resignation of Mr. Ge has taken effect on the same day.

(ii) Mr. Yu Dehui was elected as a non-executive director of the fifth session of the Board of the Company at the 2016 first extraordinary general meeting of the Company held on April 8, 2016. On the same day, Mr. Yu Dehui was elected as the Chairman of the fifth session of the Board of the Company at the 31st meeting of the fifth session of the Board. Mr. Yu Dehui was re-elected as a non-executive director and the Chairman of the sixth session of the Board of the Company at the 2015 annual general meeting and the first meeting of the sixth session of the Board of the Company held on June 28, 2016.

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31. DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S REMUNERATION (Continued)

(a) Directors' and supervisors' remuneration (Continued)

Note: (Continued)

(iii) Mr. Lu Dongliang was elected as an executive director of the sixth session of the Board of the Company at the 2015 annual general meeting of the Company held on June 28, 2016.

(iv) Mr. Liu Xiangmin resigned as an executive director of the Company on June 28, 2016 due to the expiration of the term of office of the fifth session of the Board. Mr. Liu Xiangmin was elected as a supervisor of the sixth session of the Supervisory Committee of the Company at the 2015 annual general meeting on the same day. At the first meeting of the sixth session of the Supervisory Committee subsequent to the annual general meeting, Mr. Liu Xiangmin was elected as the chairman of the sixth session of the Supervisory Committee of the Company.

(v) Mr. Yuan Li resigned as a supervisor of the Company on June 28, 2016 due to the expiration of the term of office of the fifth session of the Supervisory Committee of the Company.

(vi) Mr. Wu Zuoming was elected as an employee representative supervisor of the sixth session of the Supervisory Committee of the Company at the meeting of the employees' representatives held on June 28, 2016.

(vii) Mr. Zhao Zhao resigned as the chairman of the Supervisory Committee of the Company on June 28, 2016 due to the expiration of the term of office of the fifth session of the Supervisory Committee.

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31. DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S REMUNERATION (Continued)

(a) Directors' and supervisors' remuneration (Continued)

The remuneration of the directors and supervisors of the Company fell within the following bands:

| | Number of individuals | | |
|---|---|---|---|
| | 2014 | 2015 | 2016 |
| Nil to RMB1,000,000 | 13 | 16 | 15 |

During the year, no options were granted to the directors or the supervisors of the Company (2014 and 2015: nil).

During the year, no emoluments were paid to the directors or the supervisors of the Company (among which included the five highest paid employees) as an inducement to join or upon joining the Company or as compensation for loss of office (2014 and 2015: nil).

No directors or supervisors of the Company waived any remuneration during the years 2014, 2015 and 2016.

(b) Five highest paid individuals

During the year ended December 31, 2016, the five highest paid employees of the Group include two directors and a supervisor (2014: four directors; 2015: a director and a supervisor) whose remuneration is reflected in the analysis presented above. The remuneration payable to the remaining two individuals during 2016 (2014: one; 2015: three) is as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Basic salaries, housing fund, other allowances and benefits in kind | 491 | 1,875 | 1,450 |
| Discretionary bonus | - | - | - |
| Pension cost | 63 | 204 | 152 |
| | 554 | 2,079 | 1,602 |

The number of the remaining two highest paid individuals during 2016 (2014: one; 2015: three) whose remuneration fell within the following band is as follows:

| | Number of employees | | |
|---|---|---|---|
| | 2014 | 2015 | 2016 |
| Nil to RMB1,000,000 | 1 | 3 | 2 |

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32. INCOME TAX EXPENSE/ (BENEFIT)

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Current income tax expense: | | | |
| — PRC enterprise income tax | 260,721 | 255,572 | 503,233 |
| Deferred income tax expense/(benefit) | 814,189 | (485,719) | (99,061) |
| | 1,074,910 | (230,147) | 404,172 |

In general, the Group's PRC entities are subject to PRC corporate income tax at the standard rate of 25% (2014: 25%, 2015: 25%) on their respective estimated assessable profits for the year. Certain branches and subsidiaries of the Company located in the western regions of the PRC are granted tax concessions including a preferential tax rate of 15% (2014: 15%, 2015: 15%).

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32. INCOME TAX EXPENSE/ (BENEFIT) (Continued)

The reconciliation between the tax on the Group's profit or loss before income tax and the theoretical tax amount that would arise using the weighted average tax rate applicable to profit or loss of the consolidated entities is as follows:

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| (Loss)/profit before income tax | (16,027,138) | 136,866 | 1,659,627 |
| Tax (benefit)/expense calculated at standard income tax rate of 25% (2014 and 2015: 25%) | (4,006,785) | 34,217 | 414,907 |
| Tax effects of: | | | |
| Preferential income tax rates applicable to certain branches and subsidiaries | (19,631) | 21,442 | (3,322) |
| Impact of change in income tax rate | (53,490) | 4,538 | 5,945 |
| Tax losses of which no deferred tax assets recognized | 2,045,362 | 437,138 | 258,767 |
| Deductible temporary differences of which no deferred tax assets recognized | 1,223,707 | 241,812 | 78,644 |
| Utilization of previously unrecognized tax losses | (9,477) | (358,106) | (203,423) |
| Tax incentive in relation to deduction limits of certain expenses | (4,949) | (2,502) | (3,769) |
| Non-taxable income and deductible interest | (205,539) | (149,613) | (89,602) |
| Expenses not deductible for tax purposes | 432,876 | 30,280 | 80,014 |
| Write-off of unrecoverable deferred tax assets previously recognized | 383,314 | 76,775 | 3,315 |
| Recognition of deferred tax assets related to previously unrecognized deductible temporary differences and tax losses | - | (238,728) | (117,513) |
| Unrecognized taxable temporary differences relating to equity investments | - | (351,846) | - |
| Recognition of taxable temporary differences relating to equity investments previously unrecognized | 1,321,405 | - | - |
| True up adjustments in respect of prior year's annual income tax filings and others | (31,883) | 24,446 | (19,791) |
| Income tax expense/(benefit) | 1,074,910 | (230,147) | 404,172 |
| Effective tax rate | (6.71%) | (168%) | 24% |

Share of income tax expense of associates and joint ventures of RMB64 million (2014: RMB52.0 million, 2015: RMB41.0 million) and RMB22 million (2014: RMB20.4 million, 2015: RMB21 million) is included in "share of profits and losses of associates" and "share of profits and losses of joint ventures", respectively.

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33. (LOSS)/EARNINGS PER SHARE ATTRIBUTABLE TO ORDINARY EQUITY HOLDERS OF THE PARENT

(a) Basic

The basic (loss)/earnings per share is calculated by dividing the (loss)/profit attributable to equity holders of the parent by the weighted average number of shares in issue during the year.

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| (Loss)/Profit attributable to owners of the parent (RMB) | (16,269,477,000) | 148,622,452 | 402,494,060 |
| Other equity instruments' distribution | - | (19,287,671) | (110,000,000) |
| | (16,269,477,000) | 129,334,781 | 292,494,060 |
| Weighted average number of ordinary shares in issue | 13,524,487,892 | 14,272,716,517 | 14,903,798,236 |
| Basic (loss)/earnings per share (RMB) | (1.20) | 0.01 | 0.02 |

(b) Diluted

The diluted earnings per share amounts for the years ended December 31, 2014, 2015 and 2016 are the same as the basic earnings per share amounts as there were no dilutive potential shares during those years.

34. DIVIDENDS

According to the articles of association of the Company, the Company considers the maximum limit of profit appropriation to its shareholders is the lowest of:

(i) the sum of the current period net profit and opening retained earnings in accordance with IFRSs;

(ii) the sum of the current period net profit and opening retained earnings in accordance with the PRC Accounting Standards for Business Enterprises; and

(iii) the amount limited by the Company Law of the PRC.

According to the resolution of the Board of Directors dated March 23, 2017, the directors did not propose any final dividend for the year ended December 31, 2016, which is to be approved by the shareholders.

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35. CASH FLOWS GENERATED FROM OPERATING ACTIVITIES

| | Notes | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Cash flows generated from operating activities | | | | |
| (Loss)/Profit before income tax | | (16,027,138) | 136,866 | 1,659,627 |
| Adjustments for: | | | | |
| Share of profits and losses of joint ventures | 9(a) | (89,510) | (23,238) | 95,508 |
| Share of profits and losses of associates | 9(b) | (350,575) | (284,531) | (115,091) |
| Depreciation of property, plant and equipment | 6 | 7,020,468 | 6,931,721 | 6,560,795 |
| Depreciation of investment properties | 7 | - | - | 1,266 |
| Loss/(gain) on disposal of other property, plant and equipment and land use rights, net | 28 | 44,144 | (2,317,874) | (245,248) |
| Gain on disposal of the Environmental Protection Businesses | 28 | - | - | (571,270) |
| Impairment losses of property, plant and equipment | 6 | 5,679,521 | 10,011 | 57,080 |
| Impairment losses of intangible assets | | 108,424 | - | - |
| Impairment losses of land use rights and leasehold land | | 140,804 | - | - |
| Amortization of intangible assets | 5 | 304,077 | 255,098 | 243,771 |
| Amortization of land use rights | 8 | 84,608 | 103,932 | 99,197 |
| Amortization of prepaid expenses included in other non-current assets | | 142,126 | 83,992 | 64,918 |
| Realized and unrealized (gains)/loss on futures, option and forward contracts | 28 | (266,867) | 690,818 | 1,135,682 |
| Gain on disposal of Shanxi Huaxing | 28 | - | (2,588,134) | - |
| Gain on disposal of investments in associates | 28 | - | (832,369) | (128,833) |
| Gain on disposal of and dividends from available-for-sale investments | 28 | - | - | (125,024) |
| Receipt from government subsidies | | (154,726) | (282,635) | (207,146) |
| Interest income | | (605,408) | (340,278) | (353,535) |
| Financial cost | 29 | 6,733,909 | 5,960,993 | 5,004,715 |
| Loss/(gain) on financial products | 28 | 71,023 | (38,469) | (15,905) |
| Change in special reserve | | 65,450 | (103,364) | 9,807 |
| Others | | - | 15,790 | (7,531) |
| | | 2,900,330 | 7,378,329 | 13,162,783 |

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35. CASH FLOWS GENERATED FROM OPERATING ACTIVITIES (Continued)

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Cash flows generated from operating activities (Continued) | | | |
| Changes in working capital: | | | |
| Decrease in inventories | 1,128,466 | 1,793,787 | 2,437,326 |
| Decrease/(increase) in trade and notes receivables | 891,342 | (68,353) | (3,664,653) |
| Decrease/(increase) in other current assets | 3,158,148 | (815,194) | 3,460,225 |
| Increase in restricted cash | (647,754) | (109,542) | (264,508) |
| Increase in other non-current assets | (23,834) | (566,664) | (133,249) |
| Increase/(decrease) in trade and notes payables | 3,236,231 | (621,708) | (3,447,633) |
| Increase in other payables and accrued liabilities | 2,745,679 | 1,045,773 | 39,120 |
| Increase/(decrease) in other non-current liabilities | 702,429 | (461,995) | (15,804) |
| Cash generated from operations | 14,091,037 | 7,574,433 | 11,573,607 |
| PRC corporate income taxes paid | (308,715) | (277,378) | (54,933) |
| Net cash generated from operating activities | 13,782,322 | 7,297,055 | 11,518,674 |
| Non-cash transactions of investing activities and financing activities | | | |
| Capital injection in an associate and joint ventures by non-cash assets | 203,157 | 793,364 | 371,051 |

Note: In 2016, the Group had endorsed notes receivable from sale of goods or services for purchase of property, plant and equipment amounting to RMB1,568 million (2015: RMB 1,343 million).

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS

The Company is controlled by Chinalco, the parent company and a state-owned enterprise established in the PRC. Chinalco itself is controlled by the PRC government, which also owns a significant portion of the productive assets in the PRC. In accordance with IAS 24 Related Party Disclosures, government-related entities and their subsidiaries, directly or indirectly controlled, jointly controlled or significantly influenced by the PRC government are defined as related parties of the Group. On that basis, related parties include Chinalco and its subsidiaries (other than the Group), other government-related entities and their subsidiaries ("other state-owned enterprises"), other entities and corporations over which the Company is able to control or exercise significant influence and key management personnel of the Company and Chinalco as well as their close family members.

For the purposes of the related party transaction disclosures, the directors of the Company believe that meaningful information in respect of related party transactions has been adequately disclosed.

In addition to the related party information and transactions disclosed elsewhere in the consolidated financial statements, the following is a summary of significant related party transactions entered in the ordinary course of business between the Group and its related parties during the years.

(a) Significant related party transactions

| | Note | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Sales of goods and services rendered: | | | | |
| Sales of materials and finished goods to: | | | | |
| Chinalco and its subsidiaries | (ix) | 7,056,140 | 10,997,417 | 10,370,836 |
| Associates of Chinalco | | 170,338 | 703,628 | 688,308 |
| Joint ventures of Chinalco | | 142 | - | - |
| Joint ventures | | 48,903 | 79,034 | 648,145 |
| Associates | | 2,146,870 | 2,165,445 | 605,449 |
| | | 9,422,393 | 13,945,524 | 12,312,738 |
| Provision of utility services to: | (ii) | | | |
| Chinalco and its subsidiaries | (ix) | 407,762 | 314,544 | 567,628 |
| Associates of Chinalco | | 17,750 | 14,803 | 4,444 |
| Joint ventures | | 113 | - | 3,031 |
| Associates | | 1,977 | 553 | 584 |
| | | 427,602 | 329,900 | 575,687 |
| Provision of engineering, construction and supervisory services to: | (iii) | | | |
| Chinalco and its subsidiaries | (ix) | 988,782 | 46,328 | 96,527 |
| Joint ventures | | - | - | 41,423 |

| | | | |
|---|---|---|---|
| | 988,782 | 46,328 | 137,950 |

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(a) Significant related party transactions (Continued)

| | Note | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Sales of goods and services rendered: (Continued) | | | | |
| Provision of products processing services to: | (vii) | | | |
| Chinalco and its subsidiaries | (ix) | 3,169 | - | - |
| Rental revenue of land use rights and buildings to: | (vi) | | | |
| Chinalco and its subsidiaries | (ix) | 34,887 | 34,281 | 33,231 |
| Associates of Chinalco | | - | 249 | - |
| | | 34,887 | 34,530 | 33,231 |
| Purchase of goods and services: | | | | |
| Purchases of engineering, construction and supervisory services from: | (iii) | | | |
| Chinalco and its subsidiaries | (ix) | 988,782 | 1,737,344 | 1,525,349 |
| Purchases of key and auxiliary materials and finished goods from: | (iv) | | | |
| Chinalco and its subsidiaries | (ix) | 2,957,742 | 1,640,051 | 1,600,770 |
| Associates of Chinalco | | 386,609 | - | - |
| Joint ventures | | 1,268,123 | 1,276,078 | 3,799,116 |
| Associates | | 762,003 | 414,539 | 31,413 |
| | | 5,374,477 | 3,330,668 | 5,431,299 |
| Provision of social services and logistics services by: | (v) | | | |
| Chinalco and its subsidiaries | (ix) | 312,626 | 324,872 | 307,354 |

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(a) Significant related party transactions (Continued)

| | Note | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Purchase of goods and services: (Continued) | | | | |
| Provision of utilities services by: | (ii) | | | |
| Chinalco and its subsidiaries | (ix) | 563,468 | 643,597 | 688,513 |
| Joint ventures | | - | - | 3,386 |
| | | 563,468 | 643,597 | 691,899 |
| Provision of products processing services by | (vii) | | | |
| Chinalco and its subsidiaries | (ix) | 76,075 | 62,623 | - |
| Provision of other services by: | | | | |
| A joint venture | | - | - | 151,552 |
| Rental expenses for buildings and land use rights charged by | (vi) | | | |
| Chinalco and its subsidiaries | (ix) | 561,528 | 590,657 | 509,558 |
| Joint ventures | | - | - | 126 |
| | | 561,528 | 590,657 | 509,684 |
| Other significant related party transactions: | | | | |
| Borrowing from a subsidiary of Chinalco | (viii),(ix) | 1,429,000 | 5,929,000 | 5,145,959 |
| Interest expense on a borrowing from a subsidiary of Chinalco | | 38,772 | 140,410 | 226,118 |
| Entrusted loan from a subsidiary of Chinalco | | 70,000 | - | - |
| Entrusted loans and other borrowings to: | | | | |
| Joint ventures | | 764,000 | 140,000 | 212,400 |

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(a) Significant related party transactions (Continued)

| | Note | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Other significant related party transactions: (Continued) | | | | |
| Interest income on entrusted loans and other borrowings to: | | | | |
| Joint ventures | | 60,459 | 14,061 | 31,373 |
| An associate | | 88 | - | - |
| Chinalco and its subsidiaries | | 2,027 | - | - |
| | | 62,574 | 14,061 | 31,373 |
| Interest income from the unpaid disposal proceeds from: | | | | |
| Chinalco and its subsidiaries | | 542,811 | 326,217 | 246,149 |
| Disposal assets under sale and leaseback contract to a subsidiary of Chinalco | (xviii) | 300,000 | 1,150,000 | 1,040,000 |
| Finance lease under a sale and leaseback contract from a subsidiary of Chinalco | (xviii) , (ix) | 304,239 | 1,150,064 | 1,040,036 |
| Provision of financial guarantees to: | | | | |
| Joint ventures | (xv),(xvi) | 345,760 | 340,900 | 24,245 |
| An associate | (xvii) | 23,710 | 17,470 | - |
| | | 369,470 | 358,370 | 24,245 |
| Financial guarantees provided by: | | | | |
| Subsidiaries of Chinalco | 20(e) | 138,000 | 27,000 | 23,000 |
| Discounted notes receivables to a subsidiary of Chinalco | | 118,757 | 122,000 | 40,200 |

All transactions with related parties are conducted at prices and on terms mutually agreed by the parties involved, which are determined as follows:

(i) Sales of materials and finished goods comprised sales of alumina, primary aluminum, copper and scrap materials. Transactions entered into are covered by general agreements on mutual provision of production supplies and ancillary services. The pricing policy is summarized below:

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(a) Significant related party transactions (Continued)

All transactions with related parties are conducted at prices and terms mutually agreed by the parties involved, which are determined as follows: (Continued)

(i) Sales of materials and finished goods comprised sales of alumina, primary aluminum, copper and scrap materials. Transactions entered into are covered by general agreements on mutual provision of production supplies and ancillary services. The pricing policy is summarised below:

(1) The price prescribed by the PRC government ("state-prescribed price") is adopted;

(2) If there is no state-prescribed price, state-guidance price is adopted;

(3) If there is neither state-prescribed price nor state-guidance price, then the market price (being price charged to and from independent third parties) is adopted; and

(4) If none of the above is available, then the adoption of a contractual price (being reasonable costs incurred in providing the relevant services plus not more than 5% of such costs is adopted).

(ii) Utility services, including electricity, gas, heat and water, are provided at the state-prescribed price.

(iii) Engineering, project construction and supervisory services were provided for construction projects of the Group. The state-guidance price or prevailing market price (including the tender price where by way of tender) is adopted for pricing purposes.

(iv) The pricing policy for purchases of key and auxiliary materials (including bauxite, limestone, carbon, cement and coal) is the same as that set out in (i) above.

(v) Social services and logistics services provided by Chinalco Group cover public security, fire services, education and training, school and hospital services, cultural and physical education, newspaper and magazines, broadcasting and printing as well as property management, environmental and hygiene, greenery, nurseries and kindergartens, sanatoriums, canteens and offices, public transport and retirement management and other services. Provisions of these services are covered by the Comprehensive Social and Logistics Services Agreement. The pricing policy is the same as that set out in (i) above.

(vi) Pursuant to the Land Use Rights Lease Agreements entered into between the Group and Chinalco Group, operating leases for industrial or commercial land are charged at the market rent rate. The Group also entered into a building rental agreement with Chinalco Group and pays rent based on the market rate for its lease of buildings owned by Chinalco.

(vii) The pricing policy for product processing services is the same as that set out in (i) above.

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(a) Significant related party transactions (Continued)

(viii) Chinalco Finance, a wholly owned subsidiary of Chinalco and a non-bank financial institution incorporated in the PRC, provide deposit services, credit services and miscellaneous financial services to the Group. The terms for the provision of financial services to the Group are no less favourable than those of the same type of financial services provided by Chinalco Finance to Chinalco and other members of its group or those of the same type of financial services that may be provided to the Group by other financial institutions.

(ix) The related party transactions in respect of these items above also constitute connected transactions or continuing connected transactions as defined in Chapter 14A of the Listing Rules.

(x) In November 2015, the Company together with its two subsidiaries, Chalco International Trading and Chalco Shanghai Kelin Co., Ltd. (上海 凱林 ) ("Shanghai Kelin") signed a capital injection agreement with Chinalco Asset Management Co., Ltd.*( 資產經營管理 ) ("Chinalco Asset Management") to inject capital to Chinalco Property Development Co., Ltd.* ( 置业發展 ) ("Chinalco Property Development") by way of injecting certain urban property assets and land use rights with appraised value amounting to RMB676.95 million and cash amounting to RMB696 million. Subsequent to the capital injection, the Group held a 24.12% equity interest in Chinalco Investment Development. The investment in Chinalco Property Development has been adjusted the impact of downstream transaction amounting to RMB111.3 million. The transaction generated disposal gain amounting to RMB350.22 million.

In November 2015, Chinalco Property Development changed its name to Chinalco Investment Development Co., Ltd.*( 投資發展 ).

(xi) Transfer of the Property Assets of Chalco Hong Kong to Chinalco assets holdings

In November 2015, Chalco Hong Kong and Chinalco Assets Holdings entered into an asset transfer agreement, pursuant to which, Chalco Hong Kong agreed to dispose of the property assets ("HK Property") of Chalco Hong Kong to Chinalco Assets Holdings. The appraised value of the properties was HKD372 million (equivalent to RMB311 million) as at the Benchmark Date of September 30, 2015. According to the asset transfer agreement, 30% of the total consideration, i.e. HKD112 million (equivalent to RMB93 million), shall be paid to Chalco Hong Kong by Chinalco Assets Holdings in December 2015, and the remaining 70% of the total consideration shall be paid before June 30, 2016. The transaction between the Group and Chinalco Assets Holdings constituted a connected transaction.

The Group disposed of the Hong Kong property with carrying value of RMB102 million and recognized a gain of RMB210 million. In December 2015, the Group received the first batch of the asset transfer consideration of RMB93 million.

(xii) As disclosed in note 39, the Group acquired relevant assets and liabilities of High-Purity Aluminum Plant and Light Metal Material Plant ("High-Purity Aluminum and Light Metal") from Baotou Group which also constituted a connected transaction.

(xiii) In August 2015, the Company entered into an agreement with Chalco Resource, a subsidiary of Chinalco, pursuant to which the Company shall make a capital injection to Chalco Resource of RMB616.58 million in proportion to its 15% equity interest in Chalco Resource. As at December 31, 2015, the Company has made a capital injection of RMB246.63 million in cash, and still has the capital injection commitment amounting to RMB369.95 million.

(xiv) In August 2015, the Company signed a capital injection agreement with China Rare Earth pursuant to which the Company has made a capital injection of RMB400 million in cash in return for 14.62% equity interest in China Rare Earth.

(xv) In December 2006, Ningxia Energy, a subsidiary of the Company, entered into a financial guarantee contract with China Construction Bank providing a financial guarantee to Tian Jing Shen Zhou Wind Power Co., Ltd, a joint venture of the Company, for its 14-year bank loan amounting to RMB35 million. As at December 31, 2016, the outstanding amount of the guarantee was RMB24 million (December 31, 2015: RMB30 million.

(xvi) In March 2013, the Company entered into a guarantee agreement with China Development Bank, together with other shareholders of Xinyugou Coal Co., Ltd. *(" 介休鑫峪沟煤业 ") ("Xinyugou Coal"), a joint venture of the Company, and pursuant to the guarantee agreement, the Company provided financial guarantee to loans up to RMB1,020 million of Xinyugou Coal, in proportion to its 34% shareholding. In August 2016, Xinyugou Coal was default in repayment of bank loans and interests of RMB914 million and RMB101 million, respectively. Based on the agreement entered among the Company, Xinyugou Coal, one of its other shareholders and China Development Bank on 31 August 2016, the Company fulfilled its guarantee obligation by paying RMB336 million to China Development Bank, and the related financial guarantee was released.

(xvii) In February 2014, Shanxi Huasheng, a subsidiary of the Company, entered into a financial guarantee contract with Shanghai Pudong Development Bank providing a financial guarantee to Xingshengyuan Coal Co., Ltd*("霍州煤电 团兴盛园煤业 &#361 ("Xingshengyuan Coal") an associate of the Company, for its bank loan up to RMB200 million, in proportion of the 43.03% shareholding in Xingshengyuan Coal. In 2016, Xingshengyuan Coal repaid the bank loan in full, and the guarantee has been released.

(xviii) As disclosed in note 21, the Group has entered into several sales and leaseback contracts with CFL.

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(a) Significant related party transactions (Continued)

(xix) As disclosed in note 39, on January 1, 2016, Chalco Shandong swapped certain assets and liabilities to acquire a business from Shandong Aluminum, which constituted a related party transaction.

As disclosed in note 39, the Group acquired relevant assets and employees of pseudoboehmite and activated silicon powder production lines of Science and Technology Chemical Company from Shanxi Aluminum Plant, which also constituted a related party transaction.

As disclosed in note 39, the Group acquired the 33% and 33% equity interests in Xinghua Technology from Shandong Aluminum and Shanxi Aluminum Plant, respectively, which constituted a related party transaction.

As disclosed in note 39, the Group acquired the 60% equity interest of Chinalco Shanghai from Chinalco, which also constituted a related party transaction.

(xx) In November 2015, the Company and Chinalco Capital, a subsidiary of Chinalco, entered into a capital contribution agreement (the "Capital Contribution Agreement"), pursuant to which the Company made a capital injection to Chinalco Capital by the 15% equity interest held by the Company in ABC-CA Fund Management Co., Ltd. ("農銀匯理基金管理 ") ("ABC-CA") with appraised value of RMB283.15 million and cash of RMB150 million totalling RMB433.15 million. The Company completed the capital injection of 15% equity interest of ABC-CA in June 2016 which constituted a related party transaction.

(xvi) As Disposal of non-core assets

On March 30, 2016, Chalco Shandong, Chalco Shanxi Branch and Chalco Henan Branch entered into asset transfer agreements to transfer certain non-core assets to Shandong Aluminum, Shanxi Aluminum Plant and China Great Wall Aluminum Corporation, respectively, which are all subsidiaries of Chinalco. The total consideration was RMB474.62 million which was determined based on the valuation reports of the assets disposed of on the valuation base date as at February 29, 2016. The carrying value of the assets disposed of amounted to RMB279.19 million and the Group recognized a disposal gain of RMB195.43 million. The transactions were completed on March 31, 2016. Pursuant to the asset transfer agreements, the considerations will be paid in two instalments. In 2016, Shanxi Aluminum Plant and China Great Wall Aluminum Corporation paid the first instalment amounting to RMB120.04 million by notes receivable, and Shandong Aluminum settled its payment by offsetting receivables amounting to RMB76.62 million. As at December 31, 2016, the remaining consideration amounting to RMB277.96 million would be paid by March 30, 2017.

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(a) Significant related party transactions (Continued)

(xxii) Disposal of businesses

As disclosed in note 40, on June 30, 2016, the Group transferred the Environmental Protection Business to Aluminum SPC, which constituted a related party transaction.

(xxiii) Cooperative exploration of Maochang Mine

On June 28, 2016, the Company and Chinalco entered into a cooperative exploration agreement, pursuant to which the Company and Chinalco contributed construction investment and mining rights of RMB660 million and RMB475 million, respectively, representing 58.15% and 41.85%, respectively. The Group and Chinalco are entitled to the share of profits derived from Maochang Mine based on their respective percentage of assets contributed and mine rights, respectively, for the period from July 1, 2016 to December 30, 2038.

On June 28, 2016, the Company also entered into a profit sharing rights transfer agreement with Chinalco, pursuant to which the Group acquired 80% of Chinalco's profit sharing rights in Maochang Mine at the consideration of RMB349.95 million which is determined by both parties with reference to the appraised value provided by an independent qualified valuer. The consideration will be paid in cash by the Group by instalments of RMB120 million, RMB135 million and RMB94.95 million in 2016, 2017 and 2018, respectively. The Group recorded the profit sharing rights purchased from Chinalco as an intangible asset at the present value of the cash consideration instalments and the related transactions totalling RMB335.41 million.

As at December 31, 2016, Maochang Mine was still in construction stage and no profit was distributed under the cooperative exploration agreement in the year then ended.

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(a) Significant related party transactions (Continued)

During the years ended December 31, 2014, 2015 and 2016, the Group's significant transactions with entities directly or indirectly owned or controlled by the government through its agencies, affiliates or other organizations (collectively "State-owned Enterprises" ("SOEs")) (excluding Chinalco and its subsidiaries) constituted a large portion of its sales of goods and purchases of raw materials, electricity, property, plant and equipment and services. In addition, substantially all restricted cash, time deposits, cash and cash equivalents and borrowings as at December 31, 2014,2015 and 2016 and the relevant interest earned or paid during the year were transacted with banks and other financial institutions which are controlled by the PRC government. In the opinion of the directors of the Company, the transactions with SOEs are activities conducted in the ordinary course of business, and the dealings of the Group have not been significantly or unduly affected by the fact that the Group and those SOEs are ultimately controlled or owned by the PRC government. The Group has also established pricing policies for rendered services and such pricing policies do not depend on whether or not the customers are SOEs.

*The English names represent the best effort made by the management of the Group in translating their Chinese names as they do not have any official English names.

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(b) Balances with related parties

Other than those disclosed elsewhere in the consolidated financial statements, the outstanding balances with related entities at the year end are as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Cash and cash equivalents deposited with | | |
| A subsidiary of Chinalco (Note) | 7,585,515 | 7,073,289 |
| Trade and notes receivables | | |
| Chinalco and its subsidiaries | 849,417 | 1,093,378 |
| Associates of Chinalco | 23 | 10,200 |
| Joint ventures | 28,268 | 38,055 |
| | 877,708 | 1,141,633 |
| Provision for impairment of receivables | (125,694) | (78,262) |
| | 752,014 | 1,063,371 |

Note: On August 26, 2011, the Company entered into an agreement with Chinalco Finance, pursuant to which, Chinalco Finance agreed to provide deposit services, credit services and other financial services to the Group. On August 24, 2012 and April 28, 2015, the Company renewed the financial service agreement with Chinalco Finance with a validation term of three years ending on August 25, 2018.

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(b) Balances with related parties (Continued)

Other than those disclosed elsewhere in the consolidated financial statements, the outstanding balances with related entities at the year end are as follows (Continued):

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Other current assets | | |
| Chinalco and its subsidiaries | 4,830,463 | 5,065,589 |
| Joint ventures | 1,354,427 | 2,092,369 |
| Associates | 84,511 | 73,546 |
| | 6,269,401 | 7,231,504 |
| Provision for impairment of other current assets | (49,013) | (48,510) |
| | 6,220,388 | 7,182,994 |
| Other non-current assets | | |
| Chinalco and its subsidiaries | 4,252,776 | 27,946 |
| Joint ventures | 409,251 | 112,403 |
| An associate | 111,846 | 111,846 |
| | 4,773,873 | 252,195 |
| Borrowings and finance lease payable | | |
| Subsidiaries of Chinalco | 6,370,365 | 6,051,288 |
| Trade and notes payables | | |
| Chinalco and its subsidiaries | 563,377 | 356,497 |
| Joint ventures | 160,215 | 300 |
| | 723,592 | 356,797 |

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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(b) Balances with related parties (Continued)

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Other payables and accrued liabilities | | |
| Chinalco and its subsidiaries | 1,594,175 | 1,538,167 |
| Associates of Chinalco | 171 | 1,149 |
| Associates | 1,019 | 53,000 |
| Joint ventures | 62,613 | 159,669 |
| | 1,657,978 | 1,751,985 |

As at December 31, 2016, included in long-term loans and borrowings and short-term loans and borrowings are borrowings payable to other state-owned enterprises amounting to RMB27,788 million (December 31, 2015: RMB31,695 ) and RMB39,698 million (December 31, 2015: RMB51,038 million ).

The terms of all balances with the exception of the entrusted loans were unsecured and were in accordance with terms as set out in the respective agreements or as mutually agreed between the parties concerned.
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36. SIGNIFICANT RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

(c) Compensation of key management personnel

| | 2014 | 2015 | 2016 |
|---|---|---|---|
| Fees | 622 | 653 | 762 |
| Basic salaries, housing fund, other allowances and benefits in kind | 4,062 | 3,202 | 2,542 |
| Discretionary bonus | - | - | - |
| Pension cost-defined contribution schemes | 508 | 221 | 277 |
| | 5,192 | 4,076 | 3,581 |

Details of directors' and senior management's remuneration are included in note 31 to the financial statements.

(d) Commitments with related parties

As at December 31, 2015 and 2016, except for the other capital commitments disclosed in note 43(c) to these financial statements, the Group had no significant commitments with related parties.

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT

37.1 Financial risk management

The Group's activities expose it to a variety of financial risks, including market risk (including foreign currency risk, cash flow and fair value interest rate risk and commodity price risk), credit risk and liquidity risk. The Group's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize the potential adverse effects on the Group's financial performance.

Risk management is carried out by the treasury management department (the "Group Treasury") under policies approved by the board of directors of the Company. The Group Treasury identifies, evaluates and hedges financial risks through close co-operation with the Group's operating units.

(a) Market risk

(i) Foreign currency risk

Foreign currency risk primarily arises from certain significant foreign currency deposits, trade and notes receivables, trade and notes payables, receivable from a subsidiary of Chinalco due to disposal of an entity in the preceding year, advances paid to suppliers, and short-term and long-term loans denominated in United States dollars ("USD"), Australian dollars ("AUD"), Euro ("EUR"), Japanese yen ("JPY"),Indonesian Rupiah ("IDR") and Hong Kong dollars ("HKD"). Related exposures are disclosed in notes 14, 15, 16, 20, 23, 24 and 41 to the financial statements, respectively. The Group Treasury closely monitors the international foreign currency market on the change of exchange rates and takes these into consideration when investing in foreign currency deposits and borrowing loans. As at December 31, 2015 and 2016, the Group only had significant exposure to USD.

RMB is not freely convertible currency and is regulated by the PRC government. Limitations on foreign exchange transaction imposed by the PRC government could cause future exchange rates to vary significantly from current

As at December 31, 2016, if RMB had strengthened/weakened by 5% against USD with all other variables held constant, the profit for the year would have been approximately RMB269 million lower/higher (2015: RMB177 million lower/higher), mainly as a result of foreign exchange gains and losses arising from translation of USD-denominated borrowings and receivables. Profit was more sensitive to the fluctuation in the RMB/USD exchange rates in 2016 than in 2015, mainly due to the increase in the USD denominated cash and receivables.

As the assets and liabilities denominated in other foreign currencies other than USD were relatively minimal to the total assets and liabilities of the Group, the directors of the Company are of the opinion that the Group was not exposed to any significant foreign currency risk arising from these foreign currency denominated assets and liabilities as at December 31, 2015 and 2016.

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.1 Financial risk management (Continued)

(a) Market risk (Continued)

(ii) Interest rate risk

As at December 31, 2015 and 2016, as the Group had no significant interest-bearing assets except for bank deposits (note 16), entrusted loans (note 15), receivables arising from disposal of business (note 15), a prepayment paid to a supplier (note 15) and a loan to Shanxi Huaxing (note 12), the Group's income and operating cash flows are substantially independent of changes in market interest rates.

Most of the bank deposits are maintained in savings and time deposit accounts in the PRC. The interest rates are regulated by the People's Bank of China and the Group Treasury closely monitors the fluctuation on such rates periodically. The interest rates of entrusted loans and a deposit paid to a supplier are fixed, the interest rate of the receivables from disposal of businesses to Chinalco is at the rate of one-year bank loan determined by the People's Bank of China at the payment date and the interest rate of the receivables from disposal of an entity to a subsidiary of Chinalco is LIBOR plus 0.9%. As the interest rates applied to the deposits and receivables from disposal of businesses were relatively low and the interest rates applied to the entrusted loans and a prepayment paid to a supplier were fixed, the directors of the Company are of the opinion that the Group was not exposed to any significant interest rate risk for its financial assets held as at December 31, 2015 and 2016.

The interest rate risk for the Group's financial liabilities primarily arises from interest-bearing loans. Loans borrowed at floating interest rates expose the Group to cash flow interest rate risk. The exposures to these risks are disclosed separately in note 20. The Group enters into debt obligations to support general corporate purposes including capital expenditures and working capital needs. The Group Treasury closely monitors market interest rates and maintains a balance between variable rate and fixed rate borrowings in order to reduce the exposures to the interest rate risk described above.

As at December 31, 2016, if interest rates had been 100 basis points (December 31, 2015: 100 basis points) higher/lower for bank and other loans borrowed at floating interest rates with all other variables held constant, net profit for the year would have been RMB479 million lower/higher (2015: RMB508 million ), respectively, mainly as a result of the higher/lower interest expense on floating rate borrowings.

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.1 Financial risk management (Continued)

(a) Market risk (Continued)

(ii) Interest rate risk (Continued)

The fair value interest rate risk of the Group mainly arises from long-term bonds, medium-term notes and short-term bonds issued at fixed rates. As the fluctuation of comparable interest rates of corporate bonds with similar terms was relatively low, the directors of the Company are of the opinion that the Group is not exposed to any significant fair value interest rate risk for its fixed interest rate borrowings held as at December 31, 2015 and 2016.

(iii) Commodity price risk

The Group uses futures and option contracts to reduce its exposure to fluctuations in the price of primary aluminum and other products. The Group uses the futures contract for hedging other than speculation. With reference to the hedging of primary aluminum, production company hedges the output of primary aluminum and trading company hedges the quantities of buyout and self-supporting.

The Group uses mainly futures contracts and option contracts traded on the Shanghai Futures Exchange and London Metal Exchange ("LME") to hedge against fluctuations in primary aluminum prices. As at December 31, 2016, the fair values of the outstanding futures contracts amounting to RMB55 million (December 31, 2015: RMB2 million) and RMB3 million (December 31, 2015: RMB11 million) were recognized in financial assets and financial liabilities at fair value through profit or loss, respectively. As at December 31, 2016, the fair value of the outstanding options contracts amounting to RMB0.1 million (December 31, 2015: RMB151 million) was recognized in financial liabilities at fair value through profit or loss.

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.1 Financial risk management (Continued)

(a) Market risk (Continued)

(iii) Commodity price risk (Continued)

As at December 31, 2016, if the commodity futures prices had increased/decreased by 3% (December 31, 2015: 3%) and all other variables held constant, profit for the year would have changed by the amounts shown below:

| | 2015 | 2016 |
|---|---|---|
| Primary aluminum | Decrease/increase RMB43.776million | Decrease/increase RMB6.761 million |
| Copper | Decrease/increase RMB1.736 million | Decrease/increase RMB4.085 million |
| Zinc | Increase/decrease RMB0.144 million | Decrease/increase RMB0.752 million |
| Lead | N/A | Increase/decrease RMB0.066 million |
| Coal | N/A | Decrease/increase RMB1.103 million |

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.1 Financial risk management (Continued)

(b) Credit risk

Credit risk arises from balances with banks and financial institutions, short-term investments, trade and notes receivables, other current and non-current receivables as well as credit exposures of customers, including outstanding receivables and committed transactions. The carrying amounts of short-term investments and these receivables included in notes 10, 12, 14, and 15 represent the Group's maximum exposure to credit risk in relation to its financial assets. The Group also provided financial guarantees to certain subsidiaries, a joint venture as well as a third party. The guarantees to joint ventures and an associate mentioned in note 36 represented the Group's maximum exposure to credit risk in relation to its guarantees to a joint venture. As at December 31, 2016, balance of the guarantees provided to a third party amounted to RMB8 million.

The Group maintains substantially all of its bank balances and cash and short-term investments in several major state-owned banks in the PRC. With strong support from the PRC government to these state-owned banks, the directors of the Company are of the opinion that there is no significant credit risk on such assets being exposed to losses.

With regard to receivables, the marketing department assesses the credit quality of the customers and their related parties, taking into account their financial positions, past experience and other factors. The Group performs periodic credit evaluations of its customers and considers that adequate provision for impairment of receivables has been made in the financial statements. Management does not expect any further losses from non-performance by these counterparties. The Group holds collateral for some entrusted loans. As at December 31, 2016, the Group had receivables amounting to RMB4,470 million (December 31, 2015: RMB8,792 million) from Chinalco and its subsidiaries which arose from the disposal of business. Chinalco and its subsidiaries have settled the receivables and the related interest thereof in accordance with the payment terms. Therefore, the Group considers that there is no material credit risk related to the above-mentioned receivables.

For the year ended December 31, 2016, revenues of approximately RMB30,940 million (2014: RMB24,986 million, 2015: RMB31,818 million) are derived from entities directly or indirectly owned or controlled by the PRC government including Chinalco. There were no other individual customers from whom the Group has derived revenue of more than 10% of the Group's revenue during the year ended December 31, 2014, 2015 and 2016. Thus, the directors of the Company are of the opinion that the Group was not exposed to any significant concentration of credit risk as at December 31, 2014, 2015 and 2016.

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.1 Financial risk management (Continued)

(c) Liquidity risk

Cash flow forecast is performed in the operating entities of the Group and aggregated by the Group Treasury. The Group Treasury monitors rolling forecasts of the Group's liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times so that the Group does not breach borrowing limits or covenants (where applicable) on any of its borrowing facilities. This forecast takes into consideration of the Group's debt financing plans, covenant compliance, compliance with internal balance sheet ratio targets and, if applicable, external regulatory or legal requirements, for example, currency restrictions.

As at December 31, 2016, the Group had total banking facilities of approximately RMB134,235 million (2015: 138,392 million) of which amounts totalling RMB61,980 million (2015: 67,620 million) have been utilized as at December 31, 2016. Banking facilities of approximately RMB67,510 million (2015: 63,877 million) will be subject to renewal during the next 12 months. The directors of the Company are confident that such banking facilities can be renewed upon expiration based on their past experience and good credit standing.

In addition, as at December 31, 2016, the Group had credit facilities through its futures agent at the LME amounting to USD120 million (equivalent to RMB832 million) (December 31, 2015: USD120 million (equivalent to RMB799 million)), of which USD50 million (equivalent to RMB344 million) (December 31, 2015: USD58 million (equivalent to RMB376 million)) has been utilized. The futures agent has the right to adjust the related credit facilities.

Management also monitors rolling forecasts of the Group's liquidity reserve on the basis of expected cash flows.

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.1 Financial risk management (Continued)

(c) Liquidity risk (Continued)

The table below analyzes the maturity profile of the Group's financial liabilities as at the end of the reporting period. The amounts disclosed in the table are the contractual undiscounted cash flows.

| | Within 1 year | 1 to 2 years | 2 to 5 years | Over 5 years | Total |
|---|---|---|---|---|---|
| As at December 31, 2015 | | | | | |
| Finance lease payables, including current portion | 1,839,080 | 1,824,654 | 3,765,416 | - | 7,429,150 |
| Long-term bank and other loans, including current portion | 4,605,511 | 4,866,785 | 13,894,703 | 9,244,752 | 32,611,751 |
| Long-term bonds | - | 2,000,000 | - | - | 2,000,000 |
| Medium-term notes and bonds, including current portion | 6,900,000 | 6,400,000 | 12,500,000 | - | 25,800,000 |
| Short-term bonds | 6,600,000 | - | - | - | 6,600,000 |
| Short-term bank and other loans | 35,064,287 | - | - | - | 35,064,287 |
| Interest payables for borrowings | 6,065,098 | 2,504,936 | 2,889,307 | 511,439 | 11,970,780 |
| Financial liabilities at fair value through profit or loss | 161,700 | - | - | - | 161,700 |
| Financial liabilities included in other payables and accrued liabilities, excluding accrued interest (Note) | 8,017,699 | - | - | - | 8,017,699 |
| Financial liabilities included in other non-current liabilities | - | 150,251 | 437,129 | 385,975 | 973,355 |
| Trade and notes payables | 14,726,544 | - | - | - | 14,726,544 |
| | 83,979,919 | 17,746,626 | 33,486,555 | 10,142,166 | 145,355,266 |

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.1 Financial risk management (Continued)

(c) Liquidity risk (Continued)

| | Within 1 year | 1 to 2 years | 2 to 5 years | Over 5 years | Total |
|---|---|---|---|---|---|
| As at December 31, 2016 | | | | | |
| Finance lease payables, including current portion | 2,253,720 | 2,068,315 | 2,895,251 | - | 7,217,286 |
| Long-term bank and other loans, including current portion | 4,725,151 | 8,000,722 | 10,275,883 | 8,698,516 | 31,700,272 |
| Long-term bonds | 2,000,000 | - | - | - | 2,000,000 |
| Medium-term notes and bonds, including current portion | 6,400,000 | 12,500,000 | 3,215,000 | - | 22,115,000 |
| Short-term bonds | 7,900,000 | - | - | - | 7,900,000 |
| Gold leasing arrangement | 3,000,000 | - | - | - | 3,000,000 |
| Short-term bank and other loans | 32,154,825 | - | - | - | 32,154,825 |
| Interest payables for borrowings | 6,045,284 | 1,701,480 | 2,436,061 | 470,469 | 10,653,294 |
| Financial liabilities at fair value through profit or loss | 3,575 | - | - | - | 3,575 |
| Financial liabilities included in other payables and accrued liabilities, excluding accrued interest | 8,495,713 | - | - | - | 8,495,713 |
| Financial liabilities included in other non-current liabilities (Note) | - | 218,201 | 330,021 | 405,261 | 953,483 |
| Trade and notes payables | 11,285,334 | - | - | - | 11,285,334 |
| | 84,263,602 | 24,488,718 | 19,152,216 | 9,574,246 | 137,478,782 |

Note: As disclosed in note 22, as at December 31, 2016, the carrying value of financial liabilities included in other non-current liabilities was RMB790 million (December 31, 2015: RMB798 million).

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments (Continued)

(a) Financial instruments by category

The carrying amounts of each of the categories of financial instruments of the Group as at the end of the reporting period are as follows:

Financial assets

| | December 31, 2015 | | | |
|---|---|---|---|---|
| | Financial assets at fair value through profit or loss | Loans and receivables | Available-for-sale financial investments | Total |
| Current | | | | |
| Trade and notes receivables | - | 5,143,486 | - | 5,143,486 |
| Available-for-sale financial investments | - | - | 224,820 | 224,820 |
| Financial assets at fair value through profit or loss | 2,058 | - | - | 2,058 |
| Restricted cash and time deposits | - | 1,801,239 | - | 1,801,239 |
| Cash and cash equivalents | - | 20,756,202 | - | 20,756,202 |
| Financial assets included in other current assets | - | 9,207,838 | - | 9,207,838 |
| Subtotal | 2,058 | 36,908,765 | 224,820 | 37,135,643 |
| Non-current | | | | |
| Available-for-sale financial investments | - | - | 130,440 | 130,440 |
| Financial assets included in other non-current assets | - | 6,057,461 | - | 6,057,461 |
| Subtotal | - | 6,057,461 | 130,440 | 6,187,901 |
| Total | 2,058 | 42,966,226 | 355,260 | 43,323,544 |

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments (Continued)

(a) Financial instruments by category (Continued)

Financial liabilities

| | December 31, 2015 | | |
|---|---|---|---|
| | Financial liabilities at fair value through profit or loss | Financial liabilities at amortized cost | Total |
| Current | | | |
| Financial liabilities at fair value through profit or loss | 161,700 | - | 161,700 |
| Interest-bearing loans and borrowings | - | 54,761,255 | 54,761,255 |
| Financial liabilities included in other payables and accrued liabilities | - | 9,130,548 | 9,130,548 |
| Trade and notes payables | - | 14,726,544 | 14,726,544 |
| Subtotal | 161,700 | 78,618,347 | 78,780,047 |
| Non-current | | | |
| Financial liabilities included in other non-current liabilities | - | 797,994 | 797,994 |
| Interest-bearing loans and borrowings | - | 54,000,874 | 54,000,874 |
| Subtotal | - | 54,798,868 | 54,798,868 |
| Total | 161,700 | 133,417,215 | 133,578,915 |

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments

(a) Financial instruments by category (Continued)
Financial assets

| | December 31, 2016 | | | |
|---|---|---|---|---|
| | Financial assets at fair value through profit or loss | Loans and receivables | Available-for-sale financial investments | Total |
| Current | | | | |
| Trade and notes receivables | - | 7,327,181 | - | 7,327,181 |
| Financial assets at fair value through profit or loss | 54,756 | - | - | 54,756 |
| Restricted cash and time deposits | - | 2,087,447 | - | 2,087,447 |
| Cash and cash equivalents | - | 23,808,048 | - | 23,808,048 |
| Financial assets included in other current assets | - | 10,662,053 | - | 10,662,053 |
| Subtotal | 54,756 | 43,884,729 | - | 43,939,485 |
| Non-current | | | | |
| Available-for-sale financial investments | - | - | 164,393 | 164,393 |
| Financial assets included in other non-current assets | - | 1,366,359 | - | 1,366,359 |
| Subtotal | - | 1,366,359 | 164,393 | 1,530,752 |
| Total | 54,756 | 45,251,088 | 164,393 | 45,470,237 |

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments (Continued)

(a) Financial instruments by category (Continued)

Financial liabilities

| | December 31, 2016 | | |
|---|---|---|---|
| | Financial liabilities at fair value through profit or loss | Financial liabilities at amortized cost | Total |
| Current | | | |
| Financial liabilities at fair value through profit or loss | 3,575 | - | 3,575 |
| Interest-bearing loans and borrowings | - | 58,292,394 | 58,292,394 |
| Financial liabilities included in other payables and accrued liabilities (note 23) | - | 9,564,370 | 9,564,370 |
| Trade and notes payables | - | 11,285,334 | 11,285,334 |
| Subtotal | 3,575 | 79,142,098 | 79,145,673 |
| Non-current | | | |
| Financial liabilities included in other non-current liabilities (note 22) | - | 789,720 | 789,720 |
| Interest-bearing loans and borrowings | - | 47,322,748 | 47,322,748 |
| Subtotal | - | 48,112,468 | 48,112,468 |
| Total | 3,575 | 127,254,566 | 127,258,141 |

ALUMINUM CORPORATION OF CHINA LIMITED
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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments (Continued)

(b) Fair value and fair value hierarchy

Fair value

The carrying amounts and fair values of the Group's financial instruments, other than those with carrying amounts that reasonably approximate to fair values and those carried at fair value, are as follows:

| | Carrying amounts | | Fair values | |
|---|---|---|---|---|
| | December 31, 2015 | December 31, 2016 | December 31, 2015 | December 31, 2016 |
| Financial assets | | | | |
| Financial assets included in other non-current assets (note 12) | 6,057,461 | 1,366,359 | 6,245,648 | 1,375,140 |

| | Carrying amounts | | Fair values | |
|---|---|---|---|---|
| | December 31, 2015 | December 31, 2016 | December 31, 2015 | December 31, 2016 |
| Financial liabilities | | | | |
| Financial liabilities included in other non-current liabilities (note 22) | 797,994 | 789,720 | 797,994 | 789,720 |
| Long-term interest-bearing loans and borrowings (note20) | 54,000,874 | 47,322,748 | 53,257,790 | 46,766,169 |
| | 54,798,868 | 48,112,468 | 54,055,784 | 47,555,889 |

37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments (Continued)

(b) Fair value and fair value hierarchy (Continued)

Fair value (Continued)

Management has assessed that the fair values of cash and cash equivalents, restricted cash and time deposits, trade and notes receivables, financial assets included in other current assets, entrusted loans, trade and notes payables, financial liabilities included in other payables and accrued liabilities, short-term and current portion of interest-bearing loans and borrowings, interest payable and the current portion of long-term payables approximate to their carrying amounts largely due to the short term maturities of these instruments.

The fair values of the financial assets and liabilities are included at the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale. The following methods and assumptions were used to estimate the fair values:

- The fair values of the financial assets included in other non-current assets and financial liabilities included in other non-current liabilities have been calculated by discounting the expected future cash flows using rates currently available for instruments on with similar terms, credit risk and remaining maturities.
- The fair values of long-term interest-bearing loans and borrowings have been calculated by discounting the expected future cash flows using rates currently available for instruments with similar terms, credit risk and remaining maturities.

The Group's own non-performance risk for financial liabilities included in other non-current liabilities and long-term interest-bearing loans and borrowings as at December 31, 2015 and 2016 was assessed to be insignificant.

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments (Continued)

(b) Fair value and fair value hierarchy (Continued)
Fair value hierarchy

The following tables illustrate the fair value measurement hierarchy of the Group's financial instruments:

Assets measured at fair value

| As at December 31, 2015 | Fair value measurement using | | | |
|---|---|---|---|---|
| | Quoted prices in active markets (Level 1) | Significant observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Total |
| Financial assets at fair value through profit or loss: | | | | |
| Futures contracts | 2,058 | - | - | 2,058 |
| Available for sale financial investments | 59,940 | 224,820 | - | 284,760 |
| | 61,998 | 224,820 | - | 286,818 |

| As at December 31, 2016 | Fair value measurement using | | | |
|---|---|---|---|---|
| | Quoted prices in active markets (Level 1) | Significant observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Total |
| Financial assets at fair value through profit or loss: | | | | |
| Futures contracts | 54,756 | - | - | 54,756 |
| Available-for-sale financial investments | 93,893 | - | - | 93,893 |
| | 148,649 | - | - | 148,649 |

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments (Continued)

(b) Fair value and fair value hierarchy (Continued)
Fair value hierarchy (Continued)

Liabilities measured at fair value

| As at December 31, 2015 | Fair value measurement using | | | |
|---|---|---|---|---|
| | Quoted prices in active markets (Level 1) | Significant observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Total |
| Financial liabilities at fair value through profit or loss: | | | | |
| Futures contracts | 10,719 | - | - | 10,719 |
| European option contracts | - | 150,981 | - | 150,981 |
| | 10,719 | 150,981 | - | 161,700 |

| As at December 31, 2016 | Fair value measurement using | | | |
|---|---|---|---|---|
| | Quoted prices in active markets (Level 1) | Significant observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Total |
| Financial liabilities at fair value through profit or loss: | | | | |
| Futures contracts | 3,468 | - | - | 3,468 |
| European option contracts | - | 107 | - | 107 |
| | 3,468 | 107 | - | 3,575 |

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments (Continued)

(b) Fair value and fair value hierarchy (Continued)
Fair value hierarchy (Continued)

Assets for which fair values are disclosed

| As at December 31, 2015 | Fair value measurement using | | | |
|---|---|---|---|---|
| | Quoted prices in active markets (Level 1) | Significant observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Total |
| Loans and receivables: | | | | |
| Financial assets included in other non-current assets | - | 6,245,648 | - | 6,245,648 |

| As at December 31, 2016 | Fair value measurement using | | | |
|---|---|---|---|---|
| | Quoted prices in active markets (Level 1) | Significant observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Total |
| Loans and receivables: | | | | |
| Financial assets included in other non-current assets | - | 1,375,140 | - | 1,375,140 |

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.2 Financial instruments (Continued)

(b) Fair value and fair value hierarchy (Continued)
Fair value hierarchy (Continued)

Liabilities for which fair values are disclosed

| As at December 31, 2015 | Fair value measurement using | | | |
|---|---|---|---|---|
| | Quoted prices in active markets (Level 1) | Significant observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Total |
| Financial liabilities at amortized cost: | | | | |
| Financial liabilities included in other non-current liabilities | - | 797,994 | - | 797,994 |
| Long-term interest-bearing loans and borrowings | - | 53,257,790 | - | 53,257,790 |
| | - | 54,055,784 | - | 54,055,784 |

| As at December 31, 2016 | Fair value measurement using | | | |
|---|---|---|---|---|
| | Quoted prices in active markets (Level 1) | Significant observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Total |
| Financial liabilities at amortized cost: | | | | |
| Financial liabilities included in other non-current liabilities | - | 789,720 | - | 789,720 |
| Long-term interest-bearing loans and borrowings | - | 46,766,169 | - | 46,766,169 |
| | - | 47,555,889 | - | 47,555,889 |

During the year ended December 31, 2016, the Group had no transfers of fair value measurements between Level 1 and Level 2 and no transfers into or out of Level 3 for both financial assets and financial liabilities (2015: Nil).

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37. FINANCIAL AND CAPITAL RISK MANAGEMENT (Continued)

37.3 Capital risk management

The Group's capital management objectives are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders, and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, issue new shares or sell assets to reduce debts.

Consistent with other entities in the industry, the Group monitors capital on the basis of its gearing ratio. This ratio is calculated as net debt divided by total capital. Net debt is calculated as total liabilities (excluding deferred tax liabilities and income tax payable and deferred government grants) less restricted cash, time deposits and cash and cash equivalents. Total capital is calculated as equity, as shown in the consolidated statement of financial position, plus net debt less non-controlling interests.

During 2015 and 2016, the change in sales prices of the Group's primary products has advantageously impacted on the profitability of the Group. The gearing ratio as at December 31, 2015 and 2016 are as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Total liabilities (excluding deferred tax liabilities, income tax payable and deferred government grants) | 137,585,822 | 131,681,814 |
| Less: restricted cash, time deposits and cash and cash equivalents | (22,557,441 ) | (25,895,495 ) |
| Net debt | 115,028,381 | 105,786,319 |
| Total equity | 51,893,526 | 55,587,489 |
| Add: net debt | 115,028,381 | 105,786,319 |
| Less: non-controlling interests | (11,937,634 ) | (17,479,840 ) |
| Total capital attributable to owners of the parent | 154,984,273 | 143,893,968 |
| Gearing ratio | 74% | 74% |

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38. PARTLY-OWNED SUBSIDIARIES WITH MATERIAL NON-CONTROLLING INTERESTS

Other than the senior perpetual securities issued by a subsidiary of the Group, which is disclosed in note 41, details of the Group's subsidiaries that have material non-controlling interests are set out below:

| | 2015 | 2016 |
|---|---|---|
| Percentage of equity interest held by non-controlling interests | | |
| Ningxia Energy | 29.18% | 29.18% |
| Shandong Huayu | 45.00% | 45.00% |
| (Loss)/profit for the year allocated to non-controlling interests | | |
| Ningxia Energy | (29,716) | 53,667 |
| Shandong Huayu | (21,459) | 79,621 |
| Dividends distributed to non-controlling interests | | |
| Ningxia Energy | 41,905 | 7,430 |
| Shandong Huayu | - | - |
| Accumulated balances of non-controlling interests at the reporting dates | | |
| Ningxia Energy | 3,496,613 | 4,516,727 |
| Shandong Huayu | 742,704 | 822,327 |

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38. PARTLY-OWNED SUBSIDIARIES WITH MATERIAL NON-CONTROLLING INTERESTS (Continued)

The following tables illustrate the summarized financial information of the above subsidiaries. The amounts disclosed are before any inter-company eliminations:

| 2015 | Ningxia Energy | Shandong Huayu |
|---|---|---|
| Revenue | 3,929,406 | 2,355,849 |
| Total expenses | (3,981,824) | (2,403,535) |
| Loss for the year | (52,418) | (47,686) |
| Total comprehensive loss for the year | (52,418) | (47,686) |
| Current assets | 3,392,945 | 930,275 |
| Non-current assets | 30,534,583 | 2,461,806 |
| Current liabilities | (6,507,721) | (1,751,726) |
| Non-current liabilities | (18,229,159) | (1,110) |
| Net cash flows from operating activities | 2,281,584 | 261,886 |
| Net cash flows used in investing activities | (2,077,674) | (36,529) |
| Net cash flows (used in)/from financing activities | (227,037) | 120,570 |
| Effect of foreign exchange rate changes, net | (576) | - |
| Net (decrease)/increase in cash and cash equivalents | (23,703) | 345,927 |

| 2016 | Ningxia Energy | Shandong Huayu |
|---|---|---|
| Revenue | 4,170,859 | 2,500,353 |
| Total expenses | (4,064,127) | (2,323,417) |
| Profit for the year | 106,732 | 176,936 |
| Total comprehensive income for the year | 106,732 | 176,936 |
| Current assets | 4,481,921 | 918,043 |
| Non-current assets | 30,633,509 | 2,231,424 |
| Current liabilities | (6,959,388) | (1,331,872) |
| Non-current liabilities | (17,720,701) | (1,100) |
| Net cash flows from/(used in) operating activities | 1,874,909 | (332,713) |
| Net cash flows (used in)/from investing activities | (1,384,059) | 32,753 |
| Net cash flows from/(used in) financing activities | 291,301 | (68,627) |
| Effect of foreign exchange rate changes, net | - | - |
| Net increase/(decrease) in cash and cash equivalents | 782,151 | (368,587) |

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39. BUSINESS COMBINATION

1) Acquisition of High-Purity Aluminum and Light Metal

In November 2015, Baotou Aluminum, the subsidiary of the Company, acquired relevant assets and liabilities of High-Purity Aluminum and Light Metal of Baotou Aluminum Group at a total cash consideration of RMB37.662 million. Baotou Aluminum Group is a subsidiary of Chinalco, the parent company of the Group. Before and after the acquisition, both sides are controlled by Chinalco, and the control is not temporary. Thus, the acquisition is considered to be business combination under common control. The combination date is November 30, 2015, which is determined by the date of transfer of the assets and liabilities.

The book values of the assets and liabilities of High-Purity Aluminum and Light Metal as at the acquisition date and the comparative financial figures were as follows:

| | December 31, 2014 | December 31, 2015 |
|---|---|---|
| Assets | | |
| Trade and notes receivables | 19,959 | 47,729 |
| Other current assets | 11,808 | 13 |
| Inventories | 101,898 | 146,224 |
| Property, plant and equipment | 87,609 | 76,611 |
| Intangible assets | 2,139 | 1,347 |
| Liabilities | | |
| Trade and notes payables | 2,911 | 43,597 |
| Other payables and accrued expenses | 3,791 | 137,539 |
| Interest bearing loans and borrowings | 191,707 | 65,000 |
| Net assets | 25,004 | 25,788 |
| Difference recognized in equity | | 11,874 |
| | | 37,662 |
| Cash | | 37,662 |
| Total purchase consideration | | 37,662 |

During the year ended December 31, 2015, the Group has paid the cash consideration amounting to RMB30 million, and the remaining cash consideration amounting to RMB7.6 million has been paid in year ended December 31, 2016.

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39. BUSINESS COMBINATION (Continued)

2) Acquisition of Bayer aluminum production line

On January 1, 2016, Chalco Shandong, a subsidiary of the Company, completed the swap of its certain assets and liabilities with Shandong Aluminum, a subsidiary of Chinalco. The assets disposed of by Chalco Shandong include the relevant assets and liabilities of the electrolysis aluminum plant except for the electrolysis production line (mainly carbon assets), the aluminum processing plant and the hospital ward building of Chalco Shandong (the "Assets Disposed of"). The assets acquired by Chalco Shandong comprised the relevant assets and liabilities of the Bayer alumina production line of Shandong Aluminum which, in the opinion of directors of the Company, constitute businesses (the "Business Acquired"). According to the final consideration, Chalco Shandong shall pay a net consideration amounting to RMB162 million. As at the combination date, the carrying amounts of the Business Acquired and Assets Disposed of were RMB327 million and RMB176 million, respectively. Before and after the transaction, both entities were controlled by Chinalco, and the control was not temporary. Thus, the acquisition is considered to be a business combination under common control. The transaction date was January 1, 2016, which was determined by the date that the transfer of the rights and risks of the assets and liabilities was completed.

The carrying amounts of the assets and liabilities of Business Acquired as at the transaction date and the comparative financial figures were as follows:

| | December 31, 2015 | January 1, 2016 |
|---|---|---|
| Assets | | |
| Property, plant and equipment | 328,354 | 328,354 |
| Liabilities | | |
| Other payables and accrued expenses | 1,488 | 1,488 |
| Net assets | 326,866 | 326,866 |
| Difference recognized in equity | | 11,418 |
| | | 338,284 |
| Cash | | 161,962 |
| Carrying values of assets disposed of | | 176,322 |
| Total purchase consideration | | 338,284 |

Chalco Shandong and Shandong Aluminum entered into an agreement that provided a legally enforceable right to offset receivables due from Shandong Aluminum and payables for part of the cash consideration above amounting to RMB81 million. As at December 31, 2016, Chalco Shandong has not paid the remaining consideration amounting to approximately RMB81 million.

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39. BUSINESS COMBINATION (Continued)

3) Acquisition of pseudoboehmite and activated silicon powder production lines

On June 28, 2016, the Shanxi Branch of the Company ("Shanxi Branch") entered into an Asset Transfer Agreement with Shanxi Aluminum Plant, pursuant to which, the Shanxi Branch acquired pseudoboehmite and activated silicon powder production lines of Science and Technology Chemical Company, a branch of Shanxi Aluminum Plant, at a total cash consideration of RMB43.06 million. In the opinion of directors of the Company, the production lines constitute a business. The total cash consideration was determined based on the asset appraisal report performed by an independent qualified valuer.

Shanxi Aluminum Plant is a subsidiary of Chinalco, the parent company of the Group. Before and after the acquisition, both Shanxi Aluminum Plant and the Company are controlled by Chinalco, and the control is not temporary. Thus, the acquisition is considered to be business combination under common control. The transaction date is July 5, 2016, which is determined by the date of transfer of the assets.

The carrying amount of the assets and liabilities of pseudoboehmite and activated silicon powder production lines as at the transaction date and the comparative financial figures were as follows:

| | December 31, 2015 | July 5, 2016 |
|---|---|---|
| Assets | | |
| Property, plant and equipment | 29,966 | 28,860 |
| | | |
| Liabilities | | |
| Other payables and accrued expenses | 2,503 | - |
| | | |
| Net assets | 27,463 | 28,860 |
| Difference recognized in equity | | 14,201 |
| | | 43,061 |
| | | |
| Cash | | 43,061 |
| Total purchase consideration | | 43,061 |

The acquisition of Shanxi Aluminum Plant has no impact on the Group's cash and cash equivalents.

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39. BUSINESS COMBINATION (Continued)

4) Acquisition of equity interest in Chinalco Shanghai

On August 8, 2016, through the Shanghai United Assets and Equity Exchange, the Company was affirmed as the acquirer of the 60% equity interest in Chinalco Shanghai and the Company entered into an equity transfer agreement with Chinalco, pursuant to which, the Company acquired the 60% equity interest of Chinalco Shanghai with a total cash consideration of RMB2,113.76 million. The consideration was determined based on the appraisal value of the equity of Chinalco Shanghai. Subsequent to the acquisition, the Group exercised control over Chinalco Shanghai.

Before and after the acquisition, both Chinalco Shanghai and the Company are controlled by Chinalco, and the control is not temporary. Thus, the acquisition of 60% equity interest in Chinalco Shanghai is considered to be business combination under common control. The transaction date was September 9, 2016, which was determined by the date that the Group obtained control over Chinalco Shanghai.

The book values of the assets and liabilities of Chinalco Shanghai Company Limited as at the transaction date and the comparative financial figures were as follows:

| | December 31, 2015 | September 9, 2016 |
|---|---|---|
| Assets | | |
| Property, plant and equipment | 414,766 | 494,725 |
| Land use rights | 742,771 | 731,967 |
| Inventories | 22 | 15 |
| Other current assets | 916 | 1,425 |
| Restricted cash and time deposits | 51,500 | 70,500 |
| Cash and cash equivalents | 1,156 | 2,164 |
| Liabilities | | |
| Interest bearing loans and borrowings | 241,118 | 330,549 |
| Trade and notes payables | 147 | 29 |
| Other payables and accrued expenses | 1,598 | 1,951 |
| Net assets | 968,268 | 968,267 |
| Non-controlling interests | | 387,307 |
| Net assets acquired | | 580,960 |
| Difference recognized in equity | | 1,532,801 |
| | | 2,113,761 |
| Satisfied by cash | | 2,113,761 |
| Total purchase consideration | | 2,113,761 |

As at December 31, 2016, the Group has paid up the purchase consideration amounting to RMB2,114 million.

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39. BUSINESS COMBINATION (Continued)

5) Acquisition of equity interest in Xinghua Technology

On December 5, 2016, through China Beijing Equity Exchange, the Company, and Chalco Shandong entered into equity transfer agreements with Shanxi Aluminum Plant and Shandong Aluminum respectively, pursuant to which the Company and Chalco Shandong acquired 33% and 33% equity interests of Xinghua Technology, from Shanxi Aluminum Plant and Shandong Aluminum respectively. The considerations for the acquisition of 33% and 33% equity interests of Xinghua Technology were RMB257.76 million and RMB257.76 million, respectively, which were determined based on the appraisal value of Xinghua Technology. Up to December 31, 2016, the Group has paid RMB335.09 million based on the equity transfer agreements. The remaining considerations will be paid before December 31, 2017 with interest at the prevailing one year lending rate quoted by the People's Bank of China.

Xinghua Technology was a subsidiary of Chinalco, the parent company of the Group. Subsequent to the acquisition, the Group had control over Xinghua Technology. Before and after the acquisition, both Xinghua Technology and the Company are controlled by Chinalco, and the control is not temporary. Thus, the acquisition of 66% equity interests in Xinghua Technology is considered to be a business combination under common control. The transaction date was December 23, 2016, which was date that the Group obtained control over Xinghua Technology.

The book values of the assets and liabilities of Xinghua Technology Ltd. as at the transaction date and the comparative financial figures were as follows:

| | December 31, 2015 | December 23, 2016 |
|---|---|---|
| Assets | | |
| Property, plant and equipment | 978,596 | 1,134,185 |
| Land use rights | - | 8,339 |
| Other non-current assets | 1,474 | 8,334 |
| Trade and notes receivables | 2,423 | 5,471 |
| Inventories | 164,262 | 170,986 |
| Other current assets | 89,626 | 86,283 |
| Restricted cash and time deposits | 15,000 | 184,060 |
| Cash and cash equivalents | 1,910 | 19,828 |
| | | |
| Liabilities | | |
| Interest bearing loans and borrowings (non-current) | 34,086 | 14,909 |
| Other non-current liabilities | 47,900 | 43,921 |
| Interest bearing loans and borrowings (current) | 338,393 | 354,181 |
| Trade and notes payables | 230,235 | 484,755 |
| Other payables and accrued expenses | 329,184 | 398,239 |
| Income tax payable | - | 9,919 |
| | | |
| Net assets | 273,493 | 311,562 |
| Non-controlling interests | | 105,931 |

| | |
|---|---|
| Net assets acquired | 205,631 |
| Difference recognized in equity | 309,890 |
| | 515,521 |
| | |
| Satisfied by cash | 515,521 |
| Total purchase consideration | 515,521 |

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39. BUSINESS COMBINATION (Continued)

6) Acquisition of equity interest in Xinghua Technology

As at December 31, 2016, the Group has paid the purchase consideration of RMB335 million, and the Group has not paid the remaining consideration of approximately RMB180 million.

40. DISPOSAL OF BUSINESSES

(a) Disposal of Shanxi Huaxing

In December 2015, the Group entered into Equity Transfer Agreement with Shenzhen CR Yuanda, a state-owned entity, to transfer 50% equity interests in Shanxi Huaxing, a wholly owned subsidiary, through the Shanghai United Assets and Equity Exchange at a price of RMB2,351 million. The price was determined based on the appraisal value provided by an independent qualified appraisal company. According to the Equity Transfer Agreement, 30% of the consideration amounting to RMB705 million has been received by the Group in December 2015 whereas the remaining amount of RMB1,646 million would be paid within one year from the effective date of the Equity Transfer Agreement and the balance is interest bearing charged at prevailing lending interest rate.

The directors of the Company are of the opinion that the Group lost control over Shanxi Huaxing and accounted for it as a joint venture accordingly. As of the date of disposal, the carrying amounts of Shanxi Huaxing was RMB2,115 million, and the Group recognized gain of disposal of subsidiary of RMB1,294 million for 50% equity interest disposed of. The Group re-measured the remaining 50% net assets of Shanxi Huaxing to fair value of RMB2,351 million and recognized fair value gain of RMB1,294 million accordingly.

The details of the net assets disposed of are as follows:

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40. DISPOSAL OF BUSINESSES (Continued)

(a) Disposal of Shanxi Huaxing (Continued)

| | Date of disposal |
|---|---|
| Net assets disposed of: | |
| Cash and cash equivalents | 114,794 |
| Restricted cash and time deposits | 46,716 |
| Trade and notes receivables | 34,479 |
| Other current assets | 30,849 |
| Inventories | 340,218 |
| Property, plant and equipment (note 6) | 4,495,019 |
| Land use right (note 8) | 251,295 |
| Intangible assets (note 5) | 365,427 |
| Deferred tax assets (note 11) | 3,057 |
| Other non-current assets | 487,076 |
| Trade and notes payables | (426,288) |
| Other payables and accrued expenses | (898,781) |
| Interest bearing loans and borrowings | (2,312,574) |
| Income tax payable | (4,271) |
| Other non-current liabilities | (412,192) |
| Net assets | 2,114,824 |
| 50% of net assets transferred into joint venture (Note) | (1,057,412) |
| Net assets disposed of | 1,057,412 |
| Gain on disposal of Shanxi Huaxing | 1,294,067 |
| | 2,351,479 |
| Satisfied by: | |
| Cash | 705,444 |
| Receivables as at December 31, 2015 | 1,646,035 |
| | 2,351,479 |

| | |
|---|---|
| Note: | |
| 50% of net assets transferred into joint venture | 1,057,412 |
| Gain on remeasurement of the remaining equity interest at fair value | 1,294,067 |
| Initial cost of investment in joint venture (note 9(a)) | 2,351,479 |

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40. DISPOSAL OF BUSINESSES (Continued)

(a) Disposal of Shanxi Huaxing (Continued)

An analysis of the cash flows of cash and cash equivalents in respect of the Disposal of Shanxi Huaxing is as follows:

| | 2015 |
|---|---|
| Cash consideration received | 705,444 |
| Less: cash and cash equivalents of Shanxi Huaxing disposed of | (114,794) |
| Net inflows of cash and cash equivalents in respect of the disposal of Shanxi Huaxing | 590,650 |

(b) Loss control of Ningxia photovoltaic subsidiaries

In September and October 2015, LingWu People's Court , Yinchuan Intermediate People's Court and Wuzhong People's Court accepted the liquidation petition filed by the Group's subsidiaries, Ningxia Ning Electric Silicon Co., Ltd.* (寧夏寧電矽 ), Ningxia Ning Electric PV Material Co., Ltd.* (寧夏寧電光伏材料 ), Ningxia Ning Electric Silicon Materials Co., Ltd.* (寧夏寧電矽材料 ) and Ningxia Yinxing Polycrystalline Silicon Co., Ltd.* (寧夏銀星多晶矽 ) (hereinafter referred to as "Ningxia photovoltaic subsidiaries"), respectively. Upon the liquidation administrators took control over those companies, the directors of the Company considered the Group lost control over Ningxia photovoltaic subsidiaries and therefore ceased to consolidate these companies since then ("date of lost control").

The book value of assets and liabilities of Ningxia photovoltaic subsidiaries is result from the fair value adjustments of Ningxia photovoltaic subsidiaries' assets and liabilities arising from acquisition of Ningxia Energy in 2013.

*The English names represent the best effort by the management of the Group in translating their Chinese names as they do not have any official English names.
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40. DISPOSAL OF BUSINESSES (Continued)

(b) Loss control of Ningxia photovoltaic subsidiaries *(Continued)*

The details of the net assets of Ningxia photovoltaic subsidiaries are as follows:

| | Date of lost control |
|---|---|
| Net assets: | |
| Cash and cash equivalents | 189 |
| Trade and notes receivables | 47,619 |
| Other current assets | 166,377 |
| Inventories | 18,718 |
| Property, plant and equipment (note 6) | 387,324 |
| Land use right (note 8(b)) | 114,330 |
| Intangible assets (note 5) | 3,954 |
| Other non-current assets | 8,432 |
| Available-for-sale financial investments | 5,686 |
| Trade and notes payables | (290,441) |
| Other payables and accrued expenses | (215,198) |
| Deferred tax liabilities (note 11) | (36,389) |
| Other non-current liabilities | (61,123) |
| Net assets | 149,478 |
| | |
| Trade and notes receivable due from Ningxia photovoltaic subsidiaries | 15,644 |
| Other current amount due from Ningxia photovoltaic subsidiaries | 1,435,802 |
| Provision for trade and notes receivable due from Ningxia photovoltaic subsidiaries | (15,644) |
| Provision for other current assets due from Ningxia photovoltaic subsidiaries | (1,321,712) |
| | |
| Consideration | 114,090 |
| | |
| Release of unrealized gains or losses between Ningxia photovoltaic subsidiaries and the Group upon deconsolidation | 16,515 |
| | |
| Net loss on lost control of Ningxia photovoltaic subsidiaries | (18,873) |

An analysis of the cash flows of cash and cash equivalents in respect of lost control of Ningxia photovoltaic subsidiaries is as follows:

| | 2015 |
|---|---|
| Cash consideration paid | - |
| Less: cash and cash equivalents of Ningxia photovoltaic subsidiaries | 189 |
| Net outflows of cash and cash equivalents in respect of lost control of Ningxia photovoltaic subsidiaries | (189) |

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40. DISPOSAL OF BUSINESSES (Continued)

(c) Disposed of the Environmental Protection Business

On June 29, 2016, each of the Lanzhou Branch and three subsidiaries, Baotou Aluminum Shandong Huayu and Ningxia Energy of the Company (collectively the "Sellers" and each a "Seller"), entered into a business transfer agreement with Aluminum SPC, pursuant to which the Sellers agreed to sell and Aluminum SPC agreed to acquire the environmental protection business. Aluminum SPC is a joint venture of the Company and SPC. The environmental protection business includes the environmental protection assets and relevant liabilities in relation to the desulfurization, denitration and dedusting of the coal fired generating units of the Sellers (collectively as "Environmental Protection Business"). The aggregate consideration of the business transfer agreements was RMB1,754 million, which was determined based on the valuation reports of the Environmental Protection Business on the valuation base date of March 31, 2016. As at December 31, 2016, all the cash consideration of disposal of environmental assets was received.

The Group disposed of the Environmental Protection Business with a carrying value of RMB1,183 million and recognized a disposal gain of RMB571 million in the period. The transaction was completed on June 30, 2016. The details of the net assets disposed of are as follows:

| | June 30, 2016 |
|---|---|
| Net assets disposed of： | |
| Property, plant and equipment | 1,187,802 |
| Trade and notes payables | (2,042) |
| Accruals and other payables | (2,665) |
| | 1,183,095 |
| Gain on disposal of the Environmental Protection Business | 571,270 |
| Cash consideration | 1,754,365 |

41. OTHER EQUITY INSTRUMENTS

On April 10, 2014, Chalco Hong Kong Investment Company Limited issued USD400 million senior perpetual securities with an initial distribution rate at 6.25% (the "2014 Senior Perpetual Securities"). The proceeds from issuance of the 2014 Senior Perpetual Securities after the issuance costs were USD398 million (equivalent to RMB2,462 million). The proceeds were on-lent to the Company and any of its subsidiaries for general corporate use. Coupon payments of 6.25% per annum on the 2014 Senior Perpetual Securities have been made semi-annually on April 29, and October 29, in arrears from April 17, 2014 and may be deferred at the discretion of the Group. The first coupon payment date was 29 April 2014. The 2014 Senior Perpetual Securities have no fixed maturity date and are callable only at the Group's option on or after April 17 ,2017 at their principal amounts together with any accrued, unpaid or deferred coupon distribution payments. After April 17 ,2017, the coupon distribution rate will be reset to a percentage per annum equal to the sum of (a) the initial spread of 5.423 percent, (b) the U. S. Treasury Rate, and (c) a margin of 5.00 percent. per annum. While any coupon distribution payments are unpaid or deferred, the Group, the wholly-owned subsidiaries of Chalco Hong Kong as guarantors, and the issuer cannot declare or pay dividends or make distributions or similar discretionary payments in respect of, or repurchase, redeem or otherwise acquire any securities of lower or equal rank.

On October 27, 2015, the Company issued RMB2,000 million perpetual medium-term notes with an initial distribution rate at 5.50% (the "2015 Perpetual Medium-term Notes"). The proceeds from issuance of the 2015 Perpetual Medium-term Notes is RMB2,000 million. The proceeds were used for the repayment of interest-bearing loans and borrowings. Coupon payments of 5.50% per annum on the 2015 Perpetual Medium-term Notes have been made annually in arrears from October 29, 2015 and may be deferred at the discretion of the Company. The 2015 Perpetual Medium-term Notes have no fixed maturity date and are callable only at the Group's option on October 29,2020 or any coupon distribution date after October 29, 2020 at their principal amounts together with any accrued, unpaid or deferred coupon distribution payments. The coupon distribution rate will be reset to a percentage per annum equal to the sum of (a) the initial spread of 2.61 percent, (b) the China Treasury Rate, and (c) a margin of maximum 300 Bps every five years after October 29, 2020. While any coupon distribution payments are unpaid or deferred, the Company cannot declare or pay dividends to shareholders or decrease the share capital, or make material fixed asset investments.

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41. OTHER EQUITY INSTRUMENTS (Continued)

On October 31, 2016, Chalco Hong Kong Investment issued USD500 million senior perpetual securities with an initial distribution rate at 4.25% (the "2016 Senior Perpetual Securities"). The proceeds from issuance of the 2016 Senior Perpetual Securities after the issuance costs were USD498 million (equivalent to RMB3,374 million). The proceeds were on-lent to the Company and any of its subsidiaries for general corporate use. Coupon payments of 4.25% per annum on the 2016 Senior Perpetual Securities have been made semi-annually on April 29 and October 29 in arrears from November 7,2016 and may be deferred at the discretion of the Group. The first coupon payment date was April 29, 2017. The 2016 Senior Perpetual Securities have no fixed maturity date and are callable only at the Group's option on or after 7 November 2021 at their principal amounts together with any accrued, unpaid or deferred coupon distribution payments. After November 7, 2021, the coupon distribution rate will be reset to a percentage per annum equal to the sum of (a) the initial spread of 2.931 percent, (b) the U. S. Treasury Rate, and (c) a margin of 5.00 percent per annum. While any coupon distribution payments are unpaid or deferred, the Group, the wholly-owned subsidiaries of Chalco Hong Kong as guarantors, and the issuer cannot declare or pay dividends or make distributions or similar discretionary payments in respect of, or repurchase, redeem or otherwise acquire any securities of lower or equal rank.

Pursuant to the terms and conditions of the 2013 Senior Perpetual Securities, 2014 Senior Perpetual Securities, 2015 Perpetual Medium-term Notes and 2016 Senior Perpetual Securities, the Group has no contractual obligations to repay their principal or to pay any coupon distributions. Thus in the opinion of the directors of the Company, they do not meet the definition of financial liabilities according to IAS 32 Financial Instruments: Presentation, and are classified as equity and subsequent distribution declared will be treated as distribution to equity owners.

42. CONTINGENT LIABILITIES

As at December 31, 2015 and 2016, the Group had no significant contingent liabilities.

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43. COMMITMENTS

(a) Capital commitments of property, plant and equipment

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Contracted, but not provided for | 7,770,944 | 7,594,756 |

(b) Commitments under operating leases

The future aggregate minimum lease payments as at December 31, 2015 and 2016 pursuant to non-cancellable lease agreements entered into by the Group are summarized as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Within one year | 561,028 | 515,276 |
| In the second to fifth years, inclusive | 2,167,718 | 1,925,606 |
| After five years | 15,088,512 | 13,096,017 |
| | 17,817,258 | 15,536,899 |

(c) Other capital commitments

As at December 31, 2015 and 2016, commitments to make capital contributions to the Group's joint ventures and associates were as follows:

| | December 31, 2015 | December 31, 2016 |
|---|---|---|
| Associates | 1,492,475 | 739,975 |
| Joint ventures | 244,800 | 278,664 |
| | 1,737,275 | 1,018,639 |

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44. EVENTS AFTER THE REPORTING PERIOD

1) On March 13, 2017, the Group completed an issuance of short-term bonds with a total face value of RMB3 billion at par value of RMB100.00 per unit which will be matured in March 2018 for working capital needs and repayment of bank borrowings. The fixed annual coupon interest rate of these bonds is 4.30%.

2) As approved by the board of directors of the Company on March 23, 2017, the Company proposed to acquire 40% equity interest in Chinalco Shanghai, at the consideration of approximately RMB1.409 billion, which will be determined in the transfer agreement. The transaction constitutes of a connected party transaction and is subject to the approval from independent shareholders.

3) On March 27, 2017, the Company issued a redemption notice on Hong Kong Stock Exchange, announcing that its subsidiary Chalco Hong Kong Investment Company Limited will redeem its 2014 Senior Perpetual Securities on April 29, 2017 (the "Call Date"), in whole but not in part, at the principal amount of the securities together with any distribution accrued to such Call Date (including any arrears of distribution and any additional distribution amount).

45. COMPARATIVE AMOUNTS

Certain comparative amounts have been revised as a result of the business combination under common control as disclosed in note 40.

46. APPROVAL OF THE FINANCIAL STATEMENTS

The financial statements were approved and authorized for issue by the board of directors on April 18, 2017.