ALUMINUM CORP OF CHINA LTD
Form 20-F
June 30, 2004
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ALUMINUM CORPORATION OF CHINA LIMITED

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 20-F

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

OR

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

For the fiscal year ended December 31, 2003

OR

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

Commission file number: 001-15264

(Chinese Characters)

(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. 12B Fuxing Road, Haidian District, Beijing, People s Republic of China 100814

(Address of Principal Executive Offices)

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, each representing 100 H Shares	New York Stock Exchange, Inc.
Class H Ordinary Shares	The Stock Exchange of Hong Kong Limited

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

None

(Title of Class)

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

None

(Title of Class)

Indicate the number of outstanding shares of each of the issuer s classes of capital or common stock as of December 31, 2003:

Domestic Shares, par value RMB1.00 per share	7,750,010,185
H Shares, par value RMB1.00 per share (including 409,646,400 H Shares in the form of American Depository Shares)	2,749,889,968

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 x No ¨

Indicate by check mark which financial statement item the registrant has elected to follow. Item 17 ¨ Item 18 x

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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, belie 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 and Exchange Act of 1934, as amended, or the Exchange Act. 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. We wish to caution readers not to 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 prices and demand for our products;
- future PRC tariff levels for alumina and primary aluminum;
- sales of our products;

the amount and nature of, and potential for, future development;

bauxite reserves potential;

production forecasts of bauxite, alumina and primary aluminum;

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expansion, consolidation or other trends in the aluminum industry;

the effectiveness of our cost-saving measures;

future expansion plans and capital expenditures;

expected production capacity increases;

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 expected 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 entitled Item 3. Key Information - 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.

Unless otherwise indicated, statistical and market trend information, as well as statements related to market position and competitive data, are based on our internal statistics and/or estimates gathered from our own research and/or various publicly available sources.

CERTAIN TERMS AND CONVENTIONS

Translations of amounts in this annual report from Renminbi into U.S. dollars and vice versa have been made at the rate of RMB8.2767 to US$1.00, which was the noon buying rate in the New York City for cable transfers in Renminbi per U.S. dollar as certified for customs purposes by the Federal Reserve Bank of New York on December 31, 2003. You should not construe these translations as representations that the Renminbi amounts actually represent U.S. dollar amounts or could be converted into U.S. dollars at that rate or at all. See Item 3. Key Information - Exchange Rate Information for information regarding the noon buying rates from January 1, 1999 through June 18, 2004.

We publish our financial statements in Renminbi.

Various amounts and percentages set out in this document have been rounded and, accordingly, are not the exact figures and may not total.

Unless the context otherwise requires, references in this annual report to:

Alcoa are to Alcoa International (Asia) Ltd., a company incorporated under the laws of Hong Kong;

alumina-to-silica ratio are to the ratio of alumina to silica by weight found in bauxite;

aluminum fabrication are to the process of taking primary aluminum and converting it into plates, strips, bars, tubes, etc. which can be further converted into consumer or other end products;

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bauxite are to mineral ores whose composition is principally alumina;

Bayer process are to a refining process employed to extract alumina from ground bauxite with a strong solution of caustic soda at an elevated temperature;

brownfield development are to development projects at existing plants or facilities;

Chalco, our company, we, our and **us** are to Aluminum Corporation of China Limited and its subsidiaries and, where appropriate, to its predecessors;

China and the **PRC** are to the People s Republic of China, excluding for purposes of this annual report, Hong Kong, Macau and Taiwan;

China Cinda are to China Cinda Asset Management Corporation, a PRC state-owned financial enterprise established pursuant to PRC government approval;

Chinalco and the ultimate holding company are to our controlling shareholder, Aluminum Corporation of China and its subsidiaries (other than Chalco and its subsidiaries) and, where appropriate, to its predecessors;

China Orient are to China Orient Asset Management Corporation, a PRC state-owned financial enterprise established pursuant to PRC government approval;

diasporite are to a mineral of bauxite deposits with the chemical composition of Al(2)O(3) * H(2)O;

fabricating ingots are to the primary aluminum or aluminum alloy ingots that may be used directly in the aluminum fabrication process;

gibbsitic are to a mineral of bauxite deposits with the chemical composition of Al(2)O(3) * 3H(2)O;

greenfield investment are to investment projects to construct new plants or facilities;

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

Guizhou Development are to Guizhou Provincial Materials Development and Investment Corporation, a PRC state-owned enterprise established in the PRC and one of our promoters and shareholders;

HK$ and **HK dollars** are to Hong Kong dollars, the lawful currency of the Hong Kong Special Administrative Region of the PRC;

Hong Kong Stock Exchange are to The Stock Exchange of Hong Kong Limited;

hybrid Bayer-sintering process are to the refining process developed in China which involves the application of the Bayer process and the sintering process in combination to extract alumina from bauxite more efficiently;

ingots and **remelt ingots** are to the international standard primary metal products from an aluminum smelter. Remelt ingots are the aluminum ingots generally remelted before being cast into alloyed products or used for aluminum fabrication;

kA are to kiloamperes, a unit for measuring the strength of an electric current, with one kiloampere equal to 1,000 amperes;

kWh are to kilowatt hours, a unit of electrical power, meaning one kilowatt of power for one hour;

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ore-dressing Bayer process are to a refining process we developed which involves the treatment of bauxite in order to increase its alumina-to-silica ratio so as to allow the Bayer process to then be applied;

provinces are to provinces and to provincial-level autonomous regions and municipalities in China, excluding Hong Kong Special Administrative Region, Macau Special Administrative Region, and Taiwan, which are directly under the supervision of the central PRC government;

refining are to the chemical process required to produce alumina from bauxite;

RMB are to Renminbi, the lawful currency of the PRC;

Shandong Aluminum are to Shandong Aluminum Industry Co., Ltd., our subsidiary that is a joint stock company established under PRC law, whose A shares are traded on the Shanghai Stock Exchange;

sintering process are to a refining process employed to extract alumina from ground bauxite by mixing with supplemental materials and burning in a coal fired kiln;

smelting are to the electrolytic reduction process required to produce molten aluminum from alumina;

tonne are to the metric ton, a unit of weight, with one metric ton equal to 1,000 kilograms or 2,204.6 pounds; and

US$ are to U.S. dollars, the lawful currency of the United States of America.

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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

Selected Financial Data

Historical Financial Information

The following tables present our summary income statement data and cash flow data for the years ended December 31, 1999, 2000, 2001, 2002 and 2003 and the summary balance sheet data as of December 31, 1999, 2000, 2001, 2002 and 2003. The summary balance sheet data as of December 31, 2002 and 2003 and income statement and cash flow data for the years ended December 31, 2001, 2002 and 2003 have been derived from, and should be read in conjunction with, the audited financial statements included elsewhere in this report. The summary balance sheet data as of December 31, 1999, 2000 and 2001 and income statement and cash flow data for the years ended December 31, 1999 and 2000 have been derived from our audited financial statements as of and for such dates, which are not included in this annual report.

This financial information reflects the reorganization of China s aluminum industry, following which our company was established and has been prepared as if our current structure had been in existence throughout the relevant periods. In addition, the financial information also includes various other operations retained by Chinalco that were historically associated with Chinalco s alumina and primary aluminum operations. The results of such businesses are not reflected in our statements of income for periods ending after June 30, 2001. Similarly, such businesses and their related balance sheet data are not reflected in our balance sheet as of any date after June 30, 2001. In addition, the financial information included in this annual report may not necessarily reflect our operating performance, financial position and cash flows in the future or what they would have been had we been a separate, stand-alone entity during all of the periods presented. Unless otherwise indicated, the financial statements are prepared and presented in accordance with accounting principles generally accepted in Hong Kong, also known as HK GAAP. For a reconciliation of our net income and owner s equity to generally accepted accounting principles in the United States, also known as U.S. GAAP, see Note 34 to our audited financial statements.

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	Year Ended December 31,					
	1999	2000	2001	2002	2003	2003
	RMB	RMB	RMB	RMB	RMB	US$[(1)]
	(in thousands, except per share and per ADS data)					
INCOME STATEMENT DATA:						
HK GAAP						
Sales of goods	13,650,657	17,664,069	15,987,913	16,792,766	23,245,858	2,808,590
Cost of goods sold	10,017,825	11,040,061	11,669,557	13,349,514	16,439,534	1,986,243
Gross profit	3,632,832	6,624,008	4,318,356	3,443,252	6,806,324	822,347
Other revenues	542,549	606,869	621,570	522,875	580,171	70,097
Expenses related to other revenues	335,311	446,828	587,722	459,777	512,220	61,887
Other revenues, net	207,238	160,041	33,848	63,098	67,951	8,210
Selling and distribution expenses	263,250	259,101	335,227	501,829	549,432	66,383
General and administrative expenses	1,158,858	1,245,083	1,051,104	733,803	1,047,461	126,555
Research and development expenses	111,368	309,477	144,048	131,941	173,359	20,945
Other (income) expenses, net	(359,556)	16,024	(136,320)	16,089	25,543	3,086
Operating income	2,666,150	4,954,364	2,958,145	2,122,688	5,078,480	613,588
Finance costs	1,304,734	708,233	549,410	490,614	451,411	54,540
Operating income after finance costs	1,361,416	4,246,131	2,408,735	1,632,074	4,627,069	559,048
Share of income (loss) of a jointly controlled entity	1,723	1,007	(125)	(254)	1,193	144
Income before income tax	1,363,139	4,247,138	2,408,610	1,631,820	4,628,262	559,192
Income taxes	486,584	1,589,475	756,820	183,393	918,862	111,018
Income after income tax	876,555	2,657,663	1,651,790	1,448,427	3,709,400	448,174
Minority interests	29,260	134,666	63,713	46,822	157,370	19,014
Net income for the year	847,295	2,522,997	1,588,077	1,401,605	3,552,030	429,160
Dividend			178,498	472,496	1,060,788	128,166
Basic and diluted net earnings per share	0.11	0.32	0.19	0.13	0.34	0.04
Basic and diluted net earnings per ADS	10.59	31.54	19.55	13.35	33.83	4.09
U.S. GAAP						
Net income	885,075	2,563,151	1,727,763	1,679,877	3,797,175	458,779
Basic and diluted net income per share	0.11	0.32	0.22	0.16	0.36	0.04
Basic and diluted net income per ADS	11.06	32.04	22.00	16.00	36.16	4.38
Segment Operating Income (Loss):						
HK GAAP						
Alumina	1,451,607	4,105,106	2,121,424	1,379,622	5,109,538	617,340
Primary aluminum	1,143,484	1,515,904	1,217,439	1,143,658	445,237	53,794
Corporate and other services	(255)	8,399	(25,680)	(57,933)	(78,337)	(9,465)
Unallocated	71,314	(620,011)	(330,649)	(311,729)	(367,677)	(44,423)
Inter-segment elimination		(55,034)	(24,389)	(30,930)	(30,281)	(3,658)

Total operating income	2,666,150	4,954,364	2,958,145	2,122,688	5,078,480	613,588

	As of December 31,					
	1999	2000	2001	2002	2003	2003
	RMB	RMB	RMB	RMB	RMB	US$[(1)]
	(in thousands)					
BALANCE SHEET DATA						
HK GAAP						
Bank balances and cash	2,440,018	2,419,791	4,495,922	2,342,254	2,596,440	313,705
Total current assets	7,820,967	8,552,055	12,013,524	8,557,975	8,638,566	1,043,721
Total non-current assets	14,704,128	14,756,162	21,383,987	23,361,989	26,439,729	3,194,478
Total assets	22,525,095	23,308,217	33,397,511	31,919,964	35,078,295	4,238,199
Total short-term loans (including current portion of long-term loans)	6,920,678	4,528,622	5,477,549	5,103,274	4,617,130	557,846
Total long-term loans (excluding current portion of long-term loans)	7,944,114	5,566,015	5,391,861	4,949,298	5,412,628	653,960
(Capital deficiency) owner s equity	(2,147,088)	5,026,099	14,096,085	15,523,947	18,742,341	2,264,470
Capital employed	10,803,560	13,714,248	21,121,724	23,718,243	26,827,587	3,241,338
U.S. GAAP						
Total assets	22,810,558	23,639,127	29,749,763	28,614,268	32,078,648	3,875,778
Total long-term loans (excluding current portion of long-term loans)	7,044,114	5,566,015	5,391,861	4,949,298	5,412,628	653,960
(Capital deficiency) owner s equity	(2,042,421)	5,170,921	10,308,206	12,014,340	15,477,879	1,870,053
Number of shares			8,122,482	10,495,863	10,495,863	10,495,863

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	Year Ended December 31,					
	1999	2000	2001	2002	2003	2004
	RMB	RMB	RMB	RMB	RMB	US$[(1)]
	(in thousands)					
Other Financial Data:						
HK GAAP						
Net cash inflow (outflow) from operating activities	3,751,959	4,129,737	1,940,969	2,671,759	6,002,006	725,230
Net cash outflow from investing activities	(1,389,870)	(2,016,872)	(2,575,617)	(3,780,812)	(5,395,259)	(651,861)
Net cash (outflow) inflow from financing activities	(1,264,978)	(2,509,888)	3,108,087	(868,513)	(306,892)	(37,079)
Capital expenditure						
Alumina	723,499	1,147,848	2,457,123	3,192,788	3,831,590	462,937
Primary aluminum	567,348	545,756	640,110	700,572	1,471,539	177,793
Corporate and other services	5,153	7,024	27,638	49,304	47,259	5,710
Unallocated	73,449	93,794	177,657	29,930	33,030	3,991
Total capital expenditure	1,369,449	1,794,422	3,302,528	3,972,594	5,383,418	650,431

(1) Translated solely for the convenience of the reader into U.S. dollars at the noon buying rate prevailing on December 31, 2003 of US$1.00 to RMB8.2767

Exchange Rate Information

The following table sets forth, for the periods indicated, the noon buying rate in New York for cable transfers payable in foreign currencies as certified for customs purposes by the Federal Reserve Bank of New York in Renminbi per U.S. dollar:

	Noon Buying Rate			
Period	Period End	Average[(1)]	High	Low
	(expressed in RMB per US$)			
1999	8.2795	8.2785	8.2880	8.2770
2000	8.2774	8.2784	8.2799	8.2768
2001	8.2766	8.2772	8.2786	8.2676
2002	8.2800	8.2772	8.2800	8.2699
2003	8.2767	8.2771	8.2800	8.2765
2004				
January	8.2768	8.2770	8.2772	8.2767
February	8.2769	8.2771	8.2773	8.2769
March	8.2770	8.2771	8.2774	8.2767
April	8.2771	8.2869	8.2772	8.2768
May	8.2769	8.2771	8.2773	8.2768
June (up to June 18)	8.2766	8.2767	8.2768	8.2766

(1) Determined by averaging the rates on the last business day of each month during the respective period, except for monthly averages, which are determined by averaging the rates on each business day of the month.

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Risk Factors

We are subject to various changing competitive, economic, political and social conditions in China as well as factors relating to the alumina and aluminum industry. These changing conditions and factors entail certain risks, which are described below.

We price our alumina and primary aluminum products by reference to international and domestic market prices, import cost of alumina, and changes in supply and demand in the domestic market. Each of these factors may fluctuate beyond our control. Historically, the international market prices for alumina and primary aluminum products have been volatile. Because most of our costs are fixed and we may not be able to respond quickly to any sudden decrease in alumina or primary aluminum prices, any significant decline in international market prices could materially adversely affect our business, financial condition and operating performance.

Our plans to upgrade and expand our alumina and primary aluminum plants will require capital expenditures of approximately RMB23,571 million in the years 2004 and 2005. See Item 4. Information on the Company - Property, Plants and Equipment - Our Expansion and Profit Improvement Plan. We may also need further funding for debt servicing, working capital, investments, potential acquisitions and joint ventures and other corporate requirements. We cannot assure you that cash generated from our operations will be sufficient to fund these development plans, or that our actual capital expenditures and investments will not significantly exceed our current planned amounts. If either of these conditions arises, we may have to seek external financing to satisfy our capital needs. Our ability to obtain external financing at reasonable costs is subject to a variety of uncertainties. Failure to obtain sufficient external funds for our development plans could adversely affect our business, financial condition and operating performance.

Our planned expansion, cost reduction and technical improvement projects could be delayed or adversely affected by, among other things, failures to receive regulatory approvals, difficulties in obtaining sufficient financing, technical difficulties, or human or other resource constraints. Moreover, the cost of these projects may exceed those originally contemplated. Costs savings and other economic benefits expected from these projects may not materialize as a result of any such project delays, cost overruns or changes in market circumstances. Failure to obtain intended economic benefits from these projects could adversely affect our business, financial condition and operating performances.

Our business has grown rapidly. Our ability to manage growth effectively will require us to continue to implement and improve our operational, financial and management systems, continue to develop the management skills of our managers, and continue to train, motivate and manage our employees. Failure to manage our growth effectively could adversely affect our operating performance.

We face competition from both domestic and international primary aluminum producers. Our principal competitors in the primary aluminum business are domestic smelters, some of which are expanding their production capacity. These smelters pose competitive challenges to our primary aluminum operations in production costs, product quality and price. We also face increasing competition from international primary aluminum suppliers as China continues to open up its aluminum industry to international trade. After China s accession to the World Trade Organization (WTO) on December 11, 2001, competition from international suppliers of alumina may increase as tariff and non-tariff barriers for imported alumina are significantly reduced. The standard tariff on imports of alumina into China has been reduced from 18% as of December 31, 2001 to its current level of 8% as of January 1, 2004 following China s accession to the WTO. Intensified competition may result in reductions in our prices or sales volume and may have a material adverse effect on our financial condition and operating performance. If we are not successful in reducing our costs, we may not be able to maintain or increase our current share of China s primary aluminum market or continue to achieve profitability.

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Bauxite is the most important raw material for alumina production. We obtain our bauxite from three major sources, including our own mines, jointly operated mines, and other suppliers, which primarily consist of small independent mines. For information with respect to these three major sources, see Item 4. Information on the Company - Business Overview - Business Operations - Raw Materials - Alumina. Each of these sourcing methods raises security of supply or cost issues. For instance, the average price of bauxite supplied by small independent mines at the end of 2003 has increased by 5% as compared with the same period in 2002, primarily due to increasing market demands. If we are unable to obtain a steady supply of high quality bauxite at a competitive price, our operating performance may be adversely affected.

The smelting of primary aluminum employs an electrolytic reduction process that requires a large and continuous supply of electricity. Interruptions of electricity supply can result in lengthy production shutdowns, increased costs associated with restarting production and waste of production in progress. In extreme cases, interruptions of electricity supply can also cause damage to or destruction of the equipment and facilities. We encountered severe shortages of electric power supply in 2003. We do not expect any significant improvement of this situation until late 2006 when a number of national power generation projects are scheduled for completion.

Electricity cost is the principal production cost component of our primary aluminum production. All of our five smelters benefit from various policies that allow them to purchase electricity at reduced prices. However, despite such preferential treatment, our electricity prices are expected to continue to be higher than those of major international primary aluminum producers. In addition, pursuant to a notice issued by the PRC State Development Planning Commission on December 21, 2003, the PRC government terminated an exemption from urban public utilities surcharges levied on our smelters. As a result, we expect an increase in our electricity costs. If any other preferential treatments are cancelled by the PRC government or not renewed upon expiration, or if electricity prices or charges were to increase for any reason, it would increase our unit production cost for primary aluminum and have an adverse effect on our financial condition and operating performance.

A main objective of our research and development projects is to develop new methods and processes to improve efficiency in the refining of bauxite with relatively low alumina-to-silica ratios. A potential decline in China s supply of bauxite with high alumina-to-silica ratios, failure to achieve technological improvements or to implement such improvements in commercial applications could impede our efforts to reduce unit production costs and to compete with major international producers.

The bauxite reserve data on which we base our production, revenue and expenditure plans are estimates we have developed internally and may be inaccurate. There are numerous uncertainties inherent in estimating quantities of reserves, including many factors beyond our control. If these estimates are inaccurate or indicated tonnages are not recovered, it could have a material adverse effect on our business, financial condition and operating performance.

We rely on short-term borrowings for financing needs. If we fail to achieve timely rollover, extension or refinancing of our short-term debt, we may be unable to meet our obligations in connection with debt service, accounts payable and/or other liabilities when they become due and payable. In addition, we may be exposed to changes in interest rates. If interest rates increase substantially, our results of operations could be adversely affected.

Chinalco, a state-owned enterprise, currently owns 42.14% of our issued share capital and is our largest shareholder. The interests of Chinalco may conflict or even compete with our interests and the interests of our public shareholders. Chinalco may take actions that favor the interests of its subsidiaries and associates over our interests and the interests of our public shareholders. In addition, Chinalco and some of its subsidiaries and associates provide a range of services to us, including engineering and construction services, social services, land leasing and supply of raw and supplemental material. Some of the services Chinalco provides to us, such as educational and medical care services for our employees, would be difficult to obtain from other sources. Our cost of operations could increase if Chinalco breaches its agreement to provide such services to us.

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Chinalco has substantial financial obligations relating to the businesses, operations and personnel that it retained in the reorganization. While Chinalco generates significant operating revenues and receives government support, we believe it may rely on dividends received from us as a means of funding these obligations. Subject to the relevant provisions of the PRC Company Law and our articles of association, Chinalco may seek to influence the amount of dividends we pay out in order to satisfy its cash flow requirements. Any resulting increase in our dividend payout would reduce funds available for reinvestment in our businesses.

Our alumina and aluminum production operations are subject to environmental protection laws and regulations in China, which impose such penalties as waste discharge fees, fines or closure of non-compliant plants. Each of our alumina and primary aluminum production plants has implemented a system to control its emissions and to oversee compliance with PRC environmental regulations. The PRC government, however, has taken steps and may take additional steps, towards more rigorous enforcement of applicable laws, and/or adoption of more stringent environmental standards. If the PRC national or local authorities enact additional regulations or enforce existing or new regulations in a more rigorous manner, we may be required to make additional environmental expenditures, which could have an adverse impact on our financial condition.

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

We lease from Chinalco the land use rights for 453 pieces of land used for our core business operations. Of these pieces of land, Chinalco has proper land use right certificates for 443 pieces of land and holds temporary land entitlement certificates for the remaining ten pieces of land. These ten pieces of land have a total area of approximately 1,480,025 square meters, representing approximately 2.5% of the total area of approximately 58.3 million square meters of land we lease from Chinalco. Chinalco must obtain proper land use right certificates for the ten pieces of land so that we may continue to use the land legally. Chinalco has already applied for the land use rights certificates for these ten pieces of land and such certificates are expected to be obtained by the end of August 2004.

We also lease from Chinalco 100 buildings with an aggregate gross area of approximately 273,637 square meters. Chinalco does not have proper land and building title certificates for 34 of these buildings. These buildings are for corporate office and ancillary uses, such as for garage, canteen and dormitory purposes. Our rights as the lessee may be adversely affected if the formal land and building title certificates are not obtained. Chinalco has applied for the land and building title certificates for these 34 buildings and such certificates are expected to be obtained by the end of 2004.

We are also subject to a number of risks relating to the PRC, including the following:

The central and local PRC governments continue to exercise a substantial degree of control and influence over the aluminum industry in China and shape the structure and characteristics of the industry by, policies in respect of major project approval, preferential treatments such as tax incentives, electricity price, and safety, environmental and quality standards. If the PRC government changes its current policies or the interpretation of those policies that are currently beneficial to us, we may face significant constraints on our flexibility and ability to expand our business operations or to maximize our profitability.

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Under current PRC regulatory requirements, our capital expenditure projects in excess of RMB50 million require PRC government approval. If any of our important projects required for our growth or cost reduction are not approved, or not approved on a timely basis, our financial condition and operating performances could be adversely affected.

Substantially all of our business, assets and operations are located in China. The economy of China differs from the economies of most developed countries in many respects. The economy of China has been transitioning from a planned economy to a market-oriented economy. Although in recent years the PRC government has implemented measures emphasizing the utilization of market forces for economic reform, the reduction of state ownership of productive assets and the establishment of sound corporate governance in business enterprises, a substantial portion of productive assets in China is still owned by the PRC government. In addition, the PRC government continues to play a significant role in regulating industry by imposing industrial policies. It also exercises significant control over China s economic growth through the allocation of resources, controlling payment of foreign currency-denominated obligations, setting monetary policy and providing preferential treatment to particular industries or companies. Some of these measures benefit the overall economy of China, but may have a negative effect on us.

Since 1994, the conversion of Renminbi into foreign currencies, including Hong Kong and U.S. dollars, has been based on rates set by the People s Bank of China, 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. Since 1994, the official exchange rate for the conversion of Renminbi to U.S. dollars has generally been stable. Any devaluation of Renminbi, however, may adversely affect the value of, and dividends payable on, our H shares and ADSs in foreign currencies since we receive our revenues and denominate our profits in Renminbi. Our financial condition and operating performance may also be affected by changes in the value of certain currencies other than Renminbi in which our earnings and obligations are denominated. In particular, a devaluation of the Renminbi is likely to increase the portion of our cash flow required to satisfy our foreign currency-denominated obligations.

Since 1979, many new laws and regulations covering general economic matters have been promulgated in China. Despite this activity to develop the legal system, China s system of laws is not yet complete. Even where adequate law exists in China, enforcement of existing laws or contracts based on existing law may be uncertain and sporadic, and it may be difficult to obtain swift and equitable enforcement or to obtain enforcement of a judgment by a court of another jurisdiction. The relative inexperience of China s judiciary in many cases creates additional uncertainty as to the outcome of any litigation. In addition, interpretation of statutes and regulations may be subject to government policies reflecting domestic political changes.

See also Item 4. Information on the Company - Business Overview, Item 5. Operating and Financial Review and Prospects, Item 7. Major Shareholders and Related Party Transactions - Related Party Transactions, Item 8. Financial Information and Item 11. Quantitative and Qualitative Disclosures About Market Risks.

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ITEM 4. INFORMATION ON THE COMPANY

History and Development of the Company

Overview

We are the only producer of alumina and the largest producer of primary aluminum in terms of production and sales volume in China, the fastest growing major aluminum market in the world. Alumina and primary aluminum are our principal products. Alumina is refined from bauxite through a chemical process and is the key raw material for producing primary aluminum, which in turn is a widely used metal and the key raw material for aluminum fabrication. In addition to alumina and primary aluminum, we also produce and sell a comparatively small amount of carbon products (principally carbon anodes and cathodes), alumina hydrate and alumina chemicals.

We produced approximately 6.1 million tonnes of alumina products (including alumina, alumina hydrate and alumina chemicals) in 2003, which supplied approximately 51.0% of all alumina products consumed in China during that year, and made us the second largest producer of alumina in the world. Our alumina production has increased rapidly in the past few years, and we expect to continue to capture the growth in China s alumina market through ongoing expansion. From 2000 to 2003, our alumina production grew at a compound annual rate of 12.1%, from 4.3 million tonnes per annum to 6.1 million tonnes per annum.

Our primary aluminum production of 762,000 tonnes in 2003 accounted for approximately 14.7% of China s domestic primary aluminum consumption for 2003. From 2000 to 2003, our primary aluminum production grew at a compound annual rate of 4.3%, from 669,800 tonnes per annum to 762,000 tonnes per annum.

Our key operating assets include four integrated alumina and primary aluminum production plants, another two alumina and one primary aluminum smelters in addition to the integrated production plants and one research institute, which also produces a small amount of our products on a pilot run basis. Most of our refineries are located in reasonable proximity to abundant bauxite reserves and, as of December 31, 2003, had annual production capacities ranging from 760,000 to 1.4 million tonnes. Our three largest primary aluminum smelters, in the provinces of Qinghai, Guizhou and Guangxi, had annual production capacities ranging from 130,000 to 255,000 tonnes as of December 31, 2003. According to the China Non-ferrous Metals Industry Association, our smelters in Qinghai and Guizhou are the largest and the third largest smelters in China, respectively, in terms of production capacity.

The Reorganization

We were incorporated as a joint stock limited company under PRC laws on September 10, 2001. Our scope of business includes bauxite mining, the production of alumina, primary aluminum and ancillary products, and provision of engineering and construction services. Pursuant to a reorganization agreement effective as of July 1, 2001 among Chinalco, Guangxi Development, Guizhou Development and us and a mining rights agreement between Chinalco and us, substantially all of Chinalco s alumina and primary aluminum production operations, operations of the Research Institute, as well as mining operations and mining rights of eight bauxite mines and other related assets and liabilities were transferred to us upon our formation. The specific assets and liabilities that Chinalco transferred to us included:

substantially all of the core operating assets and liabilities relating to alumina and primary aluminum production, sales and research of four integrated alumina and primary aluminum production plants, two alumina refineries, one primary aluminum smelter and one research institute, a 71.4% equity interest in Shandong Aluminum, a joint stock limited company whose class A ordinary shares are listed on the Shanghai Stock Exchange;

mining rights in eight bauxite mines and four limestone quarries, together with mining assets related to most of the alumina production plants that have been transferred to us;

import and export rights for alumina and primary aluminum products; and

contract rights and obligations, and employees associated with the businesses transferred to us.

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In consideration for the assets and operations transferred to us (other than asset transferred for cash), we issued domestic shares constituting 95.9% of total issued share capital to Chinalco. In addition, we issued domestic shares constituting 2.5% and 1.6% of total issued share capital to Guangxi Development and Guizhou Development, respectively, in consideration for their respective interests in the Pingguo plant and the Guizhou plant that were transferred to us.

Chinalco retained all of the social services and part of the ancillary production services and production supplies, as well as various production assets, including one bauxite mine, two limestone quarries, a carbon plant, some cement facilities and metallurgical design and construction operations. Some of Chinalco s retained businesses continue to provide services to us on a contractual basis, such as social services for our employees. See Item 7 - Major Shareholders and Related Party Transactions - Related Party Transactions.

In the reorganization agreement, Chinalco, Guangxi Development and Guizhou Development have agreed to indemnify us against certain tax liabilities and other claims. These indemnities include all payments, costs or expenses incurred as a result of resolving related claims. There can be no assurance that Chinalco, Guangxi Development and Guizhou Development will have adequate resources to fulfill indemnification obligations that may arise.

Debt-For-Equity Swap

On September 29, 2001, Chinalco entered into a debt-for-equity swap with China Cinda, China Orient and China Development Bank under which these creditors agreed to forgive RMB 3,445.2 million of the RMB 4,950.1 million debt owed to them in consideration for Chinalco transferring a certain number of our issued and outstanding shares. As a result of the agreement, with effect from September 29, 2001 Chinalco s shareholding in us was reduced to 60.2%, and China Cinda, China Orient and China Development Bank received 20.8%, 7.8% and 7.1%, respectively, of our issued and outstanding shares.

Strategic Investor

We and Alcoa agreed in 2001 to develop a long-term strategic relationship. The key components of this relationship involve an investment in our company, and the formation of a joint venture company to own and operate our Pingguo facilities. To establish this strategic relationship, we and Alcoa entered into:

- a strategic investor subscription agreement, dated November 5, 2001, or Subscription Agreement, pursuant to which Alcoa agreed to purchase our shares in our initial global share offering in December 2001 at the initial public offering price an amount of shares that would constitute 8.0% of our outstanding share capital immediately following the global offering; and

- a memorandum of understanding, or MOU, dated November 12, 2001, which sets forth the basis on which we propose to form the Pingguo JV to own and operate the alumina and primary aluminum production facilities at our Pingguo plant, and to jointly undertake a capacity expansion plan at Pingguo.

The primary aspects of our strategic relationship with Alcoa are described below.

Investment in Our Company

Under the Subscription Agreement, as long as Alcoa maintains a strategic stake in our shares, it will be entitled to certain key rights as our strategic partner, including:

the right to appoint one director to our board of directors;

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the right of first refusal to participate in any future projects we may contemplate undertaking with a foreign partner in bauxite mining, alumina refining or primary aluminum smelting in China; and

the opportunity to establish a second equity joint venture with us in 2005 or 2006 so long as we and Alcoa agree that the initial joint venture company at the Pingguo plant represents a successful beginning to our strategic relationship.

In addition, Alcoa has given us the right of first refusal to participate in any future projects Alcoa may contemplate undertaking with a domestic partner in the PRC in bauxite mining, alumina refining or primary aluminum smelting. Subject to exceptions described under - Joint Venture at Our Pingguo Plant below, Alcoa has agreed not to sell any of its shareholding in us for a period of at least 30 months following the date of commencement of trading in our H shares on the Hong Kong Stock Exchange. In addition, we have granted Alcoa the preemptive right to maintain a strategic stake in Chalco should we issue additional shares or other equity securities in the future. Should Alcoa wish to sell our H shares or ADSs following the expiration of its lock-up, we have undertaken to register such H shares or ADSs for sale with the U.S. Securities and Exchange Commission (the SEC).

As part of our initial public offering, Alcoa acquired 840,209,728 H shares. In our H shares placement on January 16, 2004, Alcoa acquired an additional 43,998,080 H shares. Alcoa currently holds approximately 8.0% of our share capital.

Joint Venture at Our Pingguo Plant

The MOU sets forth the basis on which we and Alcoa intend to form a limited liability equity joint venture company as equal 50% shareholders at our Pingguo plant for the purpose of mining bauxite, refining alumina and smelting aluminum. The term of the Pingguo JV is proposed to be 50 years.

In April 2004, we received a notification from the PRC State Development and Reform Commission (SDRC) regarding their approval on March 29, 2004 for the establishment of the Pingguo JV. We and Alcoa have committed to certain expansion projects to increase the alumina and aluminum production capacities at the Pingguo plant over the next few years. These expansion projects require approvals from the SDRC. For further information, see Item 4. Information of the Company - Our Facilities - Pingguo JV .

According to the MOU, the board of directors of the Pingguo JV will consist of six directors, of which we will appoint three and Alcoa will appoint three. The chairman of the board of directors is to be elected from among the directors that we appoint. The vice-chairman is to be elected from among the directors appointed by Alcoa. The day-to-day management of the Pingguo JV will be the responsibility of a general manager nominated by Alcoa and appointed by the board of directors of the Pingguo JV.

Pursuant to the Subscription Agreement, as amended, if the final joint venture agreement for the Pingguo JV is not executed due to the failure of a party to abide by the terms of the MOU, the defaulting party would be obliged to pay US$7.5 million (equivalent to RMB62.1 million) to the other party as compensation and the restrictions on Alcoa s ability to sell our shares will terminate.

Our Initial Public Offering

In December 2001, we completed our global initial public offering in which 2,749,889,968 H shares were listed on the Hong Kong Stock Exchange and 409,646,400 H shares in the form of ADSs were sold in the United States and listed on the New York Stock Exchange under the symbol ACH .

Our H Shares Placement

On January 16, 2004, we placed 549,976,000 additional H shares, par value RMB1.00 each, to certain independent professional and institutional investors who are non-U.S. persons outside the United States pursuant to Regulation S of the U.S. Securities Act of 1933 at a price of HK$5.658 per H share. The net proceeds amounted to approximately RMB3,200 million, of which we plan to use approximately RMB2,000 million to fund the alumina expansion project in our Shanxi branch. We plan to use the balance of the net proceeds for the funding of any possible acquisitions of domestic primary aluminum projects.

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Our share capital structure before and after the placement was as follows:

Holders of Domestic Shares or H Shares	Before Placement		After Placement	
	No. of Shares (in million)	Percentage of issued share capital (%)	No. of Shares (in million)	Percentage of issued share capital (%)
Holders of Domestic Shares				
Chinalco	4,656.3	44.35	4,656.3	42.14
China Cinda	1,610.3	15.34	1,610.3	14.57
China Orient	602.2	5.74	602.2	5.45
China Development Bank	554.9	5.28	554.9	5.02
Guangxi Investment	196.8	1.87	196.8	1.78
Guizhou Development	129.4	1.23	129.4	1.17
Holders of H Shares				
Alcoa	840.2	8.00	884.2	8.00
Other public investors	1,909.7	18.19	2,415.7	21.87

Details of the changes in the Company s share capital are set out in Note 31 to the financial statements.

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Business Overview

Business Operations

Principal Products

We manage our operations according to our two principal business segments. Our alumina segment includes the production and sale of our alumina-related products, namely, alumina, alumina hydrate, alumina chemicals and gallium. Our primary aluminum segment includes the production and sale of our primary aluminum-related products, namely, primary aluminum (including both ingots and other primary aluminum products) and carbon products. Sales of our alumina and primary aluminum segments accounted for approximately 58.6% and 41.1%, respectively, of our total revenues in 2003. Alumina is refined from bauxite through a chemical process and is the key raw material for producing primary aluminum, which in turn is a key raw material for aluminum fabrication.

Our alumina segment products consist primarily of alumina, which accounted for approximately 93.1% of our total alumina segment output based on total production volume in 2003. Other alumina segment products include alumina hydrate, alumina chemicals and gallium. Alumina hydrate and alumina chemicals are used in the production of chemical, pharmaceutical, ceramic and construction materials. In the process of refining bauxite into alumina, we also produce small amounts of gallium, which is a related product and a high-value rare metal with special uses in the electronics and telecommunications industries. Due to poor market conditions, we halted our production of gallium in April 2002 and have not resumed production. We will only restart production when the market demand for gallium improves.

Our most important primary aluminum product is ingots, which accounted for approximately 87.7% of our total primary aluminum output in 2003. Our standard ingots are 20-kilogram remelt ingots used for general aluminum fabrication primarily for the auto, construction, power and consumer goods industries. Other than ingots, we also produce a small amount of specialty primary aluminum, such as electrical aluminum and aluminum alloys used for special industrial applications. Our primary aluminum plants produce carbon products (principally carbon anodes and cathodes) needed in smelting operations. In addition, in December 2003, we established Shanxi Huatai Carbon Company Limited which leases production equipment and facilities from Chinalco to produce carbon products. The carbon we produce supply substantially all of the carbon products required for our smelters. We also sell some of our carbon products to smelters outside our company. Currently, aluminum fabrication does not constitute a material part of our business.

Since 2003, we have started to develop primary aluminum products from recycled materials. Our Shandong Plant used approximately 10,000 tonnes of recycled materials to produce primary aluminum products as part of our recycling pilot program in 2003. At present, only our Shandong Plant has the capability to produce primary aluminum products from recycled materials.

Our Current Production Capacity

The following table sets forth the production capacity of alumina and primary aluminum for each of our plants for 2003:

Plant	2003 Production Capacity	
	Alumina	Primary Aluminum
	(in thousand tonnes) [1]	
Pingguo plant	850.0	126.0
Zhongzhou plant	760.0	
Qinghai plant		255.0
Shanxi plant	1,400.0	
Guizhou plant	800.0	233.7
Zhengzhou plant	1,200.0	56.0
Shandong plant	930.0	55.0
Research Institute	10.0	18.0
Total	5,950.0	743.7

(1) Our production capacity takes into account designed capacity and subsequent modifications. Designed capacity is based on various assumptions including down time for ordinary maintenance and repairs and assumptions as to ore grade of bauxite used.

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The following table sets forth, for the periods indicated, information relating to our production volumes of the alumina segment and primary aluminum segment products:

Production Volume by Product	Year Ended December 31, 2001	2002	2003
	(in thousand tonnes)		
Alumina segment			
Alumina	4,421.1	5,108.0	5,632.0
Alumina hydrate and alumina chemicals	275.9	302.0	415.0
Gallium [1]	26.1	8.6	
Primary aluminum segment			
Primary aluminum [2]	707.0	751.2	762.0
Carbon	483.4	539.4	556.3

(1) In single tonne units. Our production of gallium decreased from 2001 to 2002 due to a decrease in demand for gallium. Accordingly, we temporarily halted production of gallium in August 2002 and have not resumed production. We will not restart production of gallium until the market demand for gallium improves.

(2) Including ingots and other primary aluminum products.

Production Process

Alumina

Alumina is produced from bauxite, an aluminum-bearing ore, by a chemical refining process. The production process to be used for producing alumina, whether the sintering process, the Bayer process, the hybrid Bayer-sintering process or the ore-dressing Bayer process, is determined by the mineral composition of the bauxite used. Most of the bauxite found in China is diasporite bauxite of a particular mineralogy, with high alumina content but relatively higher silica content, resulting in low alumina-to-silica ratios. Such bauxite cannot be efficiently refined by the Bayer process unless the alumina-to-silica ratio of the bauxite is raised sufficiently prior to refining. Refining low alumina-to-silica ratio bauxite generally requires the use of either the sintering process or the hybrid Bayer-sintering process that we have developed and improved upon to enable the efficient processing of diasporite bauxite generally found in China

Primary Aluminum

Alumina is converted into primary aluminum through a smelting process using electrolytic reduction. This 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 moulds to produce foundry ingots or further refined to form fabricating ingots. Most of the primary aluminum we produce is in the form of ingots.

There are two methods commonly used to produce primary aluminum, the pre-baked reduction process and the self-baking reduction process. Most modern aluminum production facilities adopt the pre-baked reduction. As of December 31, 2003, all of our primary aluminum capacity

uses pre-baked anode reduction pot-lines. Our self-baking reduction pot-lines at our Shangdong plant were converted into pre-baked reduction pot-lines during 2002. In the pre-baked reduction process, the anodes are pre-formed in a separate facility where the pollutants can be contained. The cells themselves are enclosed with removable panels, so that the waste gases produced can be extracted using large exhaust fans. These gases are then treated and purified to reduce emissions of dust and fluoride to acceptable levels.

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Production Facilities

Alumina

Our total annual production capacity for alumina products was approximately 6.0 million tonnes as of December 31, 2003. For 2003, our actual production of alumina products was approximately 6.1 million tonnes. In 2003, we supplied approximately 1.4 million tonnes, or 23.0% of all the alumina we produced, to our own smelters, and sold the rest to other domestic smelters. All of our other alumina segment products we produced in 2003, including alumina hydrate and alumina chemicals, were sold externally, either domestically or exported for chemical, pharmaceutical and other uses.

The following table sets forth the annual production capacity, output of alumina products, the contribution to our total output of alumina products and the alumina production process of each of our alumina refineries and our Research Institute as of December 31, 2003:

	2003			Percentage	
	Annual Production Capacity [1]	Alumina Products Production	Utilization Rate [2] (%)	of our Total Alumina Output (%)	Production Process
	(in thousand tonnes, except percentages)				
Shanxi plant	1,400.0	1,416.0	101.1	23.4	Hybrid Bayer-sintering
Zhengzhou plant	1,200.0	1,375.0	114.6	22.7	Hybrid Bayer-sintering
Shandong plant	930.0	950.3	102.2	15.7	Sintering
Guizhou plant	800.0	752.1	94.0	12.4	Hybrid Bayer-sintering
Zhongzhou plant	760.0	851.0	112.0	14.2	Sintering and Bayer
Pingguo plant	850.0	689.0[3]	81.1	11.4	Bayer
Research Institute [4]	10.0	13.6	136.0	0.2	Bayer
Total	5,950.0	6,047.0	101.6	100.0	

(1) Our production capacity takes into account designed capacity and subsequent modifications. Capacity is based on various assumptions, including down time for ordinary maintenance and repairs and assumptions as to ore grade of bauxite used.

(2) The capacity utilization rate is determined by dividing the production output of a particular plant by that plant s production capacity. Rates greater than 100% reflect the higher productivity obtained through the use of higher-grade bauxite than originally contemplated in capacity calculations.

(3) The construction of phase II of our Pingguo Alumina plant with production capacity of 400,000 tonnes was completed on June 28, 2003.

(4) The alumina hydrate and chemical production facilities of our Research Institute are test facilities for research and development purposes. Our Research Institute s alumina products are alumina hydrate and alumina chemicals. These products are sold commercially, and such sales are included in our total revenues.

Primary Aluminum

We operate five primary aluminum production facilities located in five provinces. Four of these five smelter plants are integrated with alumina refining operations and are self-sufficient with respect to alumina supply. In addition, our Research Institute also operates a test plant that produces primary aluminum in connection with its research and development.

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The total production capacity for primary aluminum production of all five of our smelters and our Research Institute in 2003 was 743,700 tonnes. In 2003, we produced approximately 762,000 tonnes of primary aluminum.

The following table sets forth various information relating to our primary aluminum production facilities as of December 31, 2003:

	2003				
Plant	**Annual Production Capacity[1]**	**Aluminum Output**	**Utilization Rate [2] (%)**	**Percentage of our Total Aluminum Output (%)**	**Smelting Equipment**
	(in thousand tonnes, except for percentages)				
Qinghai plant	255.0	269.2	105.5	35.3	60 kA pre-baked
Guizhou plant	233.7	233.0	99.7	30.6	160 kA & 186kA pre-baked
Pingguo plant	126.0	139.0	110.3	18.2	160 kA & 320 kA pre-baked
Shandong plant	55.0	45.4	82.5	6.0	85 kA pre-baked
Zhengzhou plant	56.0	58.0	103.6	7.6	85 kA pre-baked
Research Institute [3]	18.0	17.4	96.7	2.3	140 kA & 280kA pre-baked
	743.7	762.0	102.5	100.0	

(1) Production capacity takes into account-designed capacity, subsequent modifications and down time for ordinary maintenance and repairs.
(2) The capacity utilization rate is determined by dividing the production output of a particular plant by that plant s production capacity.
(3) The primary aluminum production facilities of our Research Institute are experimental facilities for research and development purposes. Primary aluminum produced at the smelter is sold commercially, and such sales are included in our total revenues.

Raw Materials

Alumina

Bauxite is the principal raw material for the production of alumina. On average, our refineries consume 1.8 tonnes of bauxite to produce one tonne of alumina. We used approximately 8.7 million tonnes, 9.3 million tonnes and 11.3 million tonnes of bauxite in our alumina production in 2001, 2002 and 2003, respectively. In 2003, bauxite cost represented approximately 21.0% of our per unit alumina production costs.

Supply. The predominant use of bauxite is for alumina production. We are the sole alumina producer in China and expect to remain so for the foreseeable future. Therefore, we intend to use our dominant market position to obtain bauxite on favorable terms. Except for our Shandong plant, 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 save transportation costs.

We procure our bauxite supply principally from three sources:

- our own bauxite mining operations;
- jointly operated mines; and
- purchases from other suppliers, which principally include small independent mines and, to a lesser extent, mines operated by Chinalco and imports.

We purchase bauxite from a large number of suppliers. We are not dependent on any single supplier or small group of suppliers for our bauxite requirements.

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The following table sets forth, for the periods indicated, the proportion of our bauxite requirements supplied by our three sources:

	Year Ended December 31,					
	2001		2002		2003	
	Total Bauxite Supply	Percentage of Our Total Bauxite Supply	Total Bauxite Supply	Percentage of Our Total Bauxite Supply	Total Bauxite Supply	Percentage of Our Total Bauxite Supply
	(in thousand tonnes)		(in thousand tonnes)		(in thousand tonnes)	
Our owned mines	1,546.7	17.8%	1,643.6	17.6%	1,923.0	17.0%
Jointly operated mines	1,518.4	17.5%	853.3	9.2%	1,799.3	15.9%
Other suppliers:	5,628.2	64.7%	6,823.1	73.2%	7,572.0	67.1%
Total	8,693.3	100%	9,320.0	100%	11,294.3	100%

The following table sets forth information regarding our own mines:

		2003	
Mine	Location (Province)	Annual Production Capacity[(1)]	Bauxite Production
		(in thousand tonnes)	
Pingguo	Guangxi	1,650.0	1,492.0
Xiaoyi	Shanxi	1,200.0	421.0
Guizhou No. 2	Guizhou	480.0	140.0
Guizhou No. 1	Guizhou	420.0	59.0
Mianchi	Henan	400.0	2.0
Yangquan	Shanxi	150.0	
Xiaoguan	Henan	300.0	
Luoyang	Henan	1,000.0	
Total		5,600.0	2,114.0

Owned Mines. Pursuant to a mining rights transfer agreement between Chinalco and us dated September 10, 2001, we obtained from Chinalco mining rights with varying terms relating to eight mines for a consideration of RMB285 million to be paid in four equal installments of RMB71.3 million with two payments in each of 2002 and 2003. As of December 31, 2003, we have paid the consideration in full. These mines supply our refineries located in their general proximity. All of these mines are open-pit mines. As of December 31, 2003, these mines had approximately 181.7 million tonnes of aggregate proven and probable bauxite reserves as such terms are defined by the SEC, an increase of 27.3 million tonnes as compared with the same period in 2002. This amount of bauxite would be sufficient to sustain our mining operations in excess of 30 years assuming an annual mining output of 5.0 million tonnes. As none of our mines produce bauxite for sale outside our company, we are

assured of full access to the bauxite produced by our own mines. In 2003, we sourced approximately 17.0% of our bauxite from mines that we own and operate.

The respective terms of the mining rights permits are the shorter of the estimated working life of the mine and 30 years beginning 2001. In addition to mining rights permits, in order to operate these mines, we are required to have land use rights over the land relating to these mines. We lease land use rights relating to all these mines from Chinalco pursuant to a land use rights leasing agreement that we entered into upon our formation. Chinalco s land use rights relating to over 90% of our mining properties are for 50-year terms beginning July 1, 2001. The remaining land use rights relating to the mines we own and operate are for shorter terms, some as short as eight years. All of our land use rights leases end on the expiry date of the mining rights or the end of the actual mine life, whichever is earlier. Both the land use rights and their leases are renewable.

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Jointly Operated Mines. We currently jointly operate 14 bauxite mines. Jointly operated mines are generally operated pursuant to long-term contractual arrangements in which we typically contribute resources such as funding, equipment, labor and management, and the other parties contribute land and/or mining rights and certain personnel resources. The other parties are also typically responsible for obtaining all relevant certificates or approvals in respect of the lands. Generally, we are able to control the mining operations of our jointly operated mines, including determination of production schedules as well as the amounts and grades of bauxite produced. As of March 31, 2004, we have obtained mining rights certificates for all of our 14 jointly operated mines were obtained.

Jointly operated mines are typically smaller than our own mines but larger than the small independent mines in terms of reserves and production scales. Our 14 jointly operated mines had approximately 25.3 million tonnes in the aggregate of proven and probable bauxite reserves as such terms are defined by the SEC. Security of supply from jointly operated mines is contingent upon the extension or renewal of the joint operation arrangements and mining rights upon their expiration. Accordingly, we view our jointly operated mines, as a group, to be a stable, long-term source of our bauxite supply, although the particular mines comprising this group are likely to change. Jointly operated mines supplied 15.9% of our bauxite needs in 2003.

Other Suppliers. In addition to our own mines and our jointly operated mines, we also source bauxite from other suppliers. A majority of other suppliers are small independent mines. However, we also secure a small portion of bauxite from Chinalco and overseas. Bauxite secured from other suppliers accounted for 67.0% of our total bauxite supply in 2003.

Small Independent Mines. We purchase bauxite directly from small independent mines directly or through local distributors that procure bauxite from these mines. Small independent mines are not affiliated with us and generally have annual bauxite production capacities not exceeding 200,000 tonnes. These mines have historically been our important source of bauxite. In 2003, we sourced approximately 67.0% of our bauxite requirements from such mines. Because of their size and flexibility, they can often mine small patches of rich deposits and extract high quality ores at low cost. They can also produce enhanced quality bauxite through manual ore selection or blending. Since 2003, the price of bauxite from small independent mines has increased due to high demand. We plan to decrease our reliance on those small independent mines to lower the effect of increased material cost. To increase the security of supply from selected small independent mines, we may explore the possibility of converting them into jointly operated mines, or entering into longer-term contracts with them.

In addition, we also source a small portion of bauxite from Chinalco and from others overseas.

Bauxite Procurement. 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 decide the amount of bauxite that we wish to source from our own mines, and allocate the remaining requirements among the jointly operated mines and other suppliers. Given the increasing price of bauxite supplied by external independent mines resulting from high market demand, our management or operational control of our own mines and jointly operated mines generally allows us to adjust the procurement levels from these sources during the course of the year to accommodate market conditions.

Alumina-to-Silica Ratio. The production method for alumina refining is determined by the mineral composition of the bauxite, as measured by reference to its alumina-to-silica ratio. Most of the bauxite reserves in China are diasporic with low alumina-to-silica ratios. Based on our current technology, an efficient application of the Bayer process requires bauxite with an alumina-to-silica ratio of 10:1 or higher, while the sintering process can refine bauxite with an alumina-to-silica ratio as low as 4:1. The average alumina-to-silica ratio of the proven and probable reserves of our own mines is 7.2:1.

Prices. There is neither governmental regulation of bauxite prices nor an official trading market for bauxite in China. We negotiate and agree on 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. Because we procure bauxite from three general sources, our total bauxite cost is

influenced by the following factors:

- the cost of our own mining operations;

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the terms of our operational arrangements with respect to our jointly operated mines; and

the market conditions relating to purchases from small independent mines.

Primary Aluminum

An average of approximately 2.0 tonnes of alumina and 14,500 kWh of electricity were required to produce one tonne of primary aluminum in 2003. Aluminum and electricity, the two principal ingredients in the smelting process in terms of volume and cost, accounted for approximately 39.0% and 32.0%, respectively, of our unit primary aluminum production costs in 2003. We also require carbon anodes, carbon cathodes and sodium fluoride in the smelting process.

Alumina is the main raw material in the production of primary aluminum. Our Shandong, Zhengzhou, Guizhou and Pingguo smelters have historically sourced all or substantially all of the alumina they required from their respective integrated refineries. Our Qinghai plant, which does not have alumina refining operations on site, has obtained alumina from our Shanxi, Zhengzhou and Zhongzhou plants. Similarly, our Research Institute, whose alumina test facility produces only alumina hydrate, has obtained alumina from our Zhengzhou plant for its smelting operations. In 2003, in response to increasing market demand, we increased our imports of alumina for self-use and trading purpose from approximately 200,000 tonnes in 2002 to approximately 1.0 million tonnes in 2003. The following table sets forth, for the periods indicated, the amount of alumina consumed by each of our smelters:

	Year Ended December 31,		
Plant	**2001**	**2002**	**2003**
	(in thousand tonnes)		
Guizhou plant	465.2	465.0	453.7
Qinghai plant	403.9	479.4	523.4
Pingguo plant	258.7	265.8	268.4
Shandong plant	107.3	107.9	83.6
Zhengzhou plant	108.0	112.4	113.0
Research Institute	22.3	30.9	34.0
Total	1,365.4	1,461.4	1,476.1

Supplemental Materials, Electricity and Fuel

Alumina

Electricity, coal, alkali (caustic soda or soda ash) and heavy oil, are the other principal items required for our alumina production. In the second half of 2003, we established a procurement center in our headquarters to control and coordinate the budgeting and procurement for all major items required for our production. In addition, to raise the efficiency of materials flow, a distribution center was set up at each production facility. Our centralized procurement system enables us to lower our unit production costs.

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Electricity. Electricity is one of the principal forms of energy used in our refining process. Electricity represented approximately 8.0% of our unit alumina production cost in 2003.

The fuel items (including coal and heavy oil) used by the co-generation facilities are purchased from outside sources at market prices. To the extent that power produced by the co-generation facility is insufficient to meet a refinery s total power requirements, the shortfall is supplied by the regional power grid at government-mandated rates pursuant to a power supply agreement. Power prices in China can vary, sometimes substantially, from one region to another, based on power production costs in the region as well as the consuming community s ability to pay. Accordingly, power costs for our various plants differ. Most of our electricity supply agreements are one to three year renewable contracts with regional power grids.

Coal. Large quantities of coal are used as a reducing agent and as fuel to make steam and gas in the alumina refining process. The coal we consumed directly in the alumina refining process in 2003 was approximately 2.47 million tonnes, representing 8.0% of our unit alumina production costs. Additional amounts of coal were used to produce steam and electricity in connection with refining for the same periods.

Alkali. Alkali is used as a supplemental material in alumina refining. The sintering process and the hybrid Bayer-sintering process require soda ash while caustic soda is used in the Bayer process. We purchase all of our alkali from outside suppliers. Our refineries require approximately 400,000 tonnes of alkali annually, representing 5.0% of our unit alumina production cost in 2003.

Heavy Oil. Heavy oil is used as fuel in the calcination of aluminum hydroxide to make alumina. Most of our refineries use heavy oil. Our annual consumption of heavy oil is approximately 339,400 tonnes. Heavy oil represented approximately 6.0% of our unit alumina production cost in 2003.

There is no governmental regulation of the prices of heavy oil, alkali or coal. The prices are set at market rates or through negotiations. We have not experienced difficulty in obtaining these materials in sufficient quantity and at an acceptable cost.

Deliveries of raw materials and supplemental materials are generally made on monthly basis. We arrange for railway transportation of these raw materials by submitting to local bureaus of the Ministry of Railways our annual and monthly transportation plans. These local bureaus then arrange for appropriate rail transportation to transport such raw materials or fuel to our refineries.

Primary Aluminum

Electricity. Smelting primary aluminum requires a substantial, continuous supply of electricity. Therefore, the availability and price of electricity are key considerations in our primary aluminum production operations.

We rely on electricity from the power grids for our smelter operations, although electricity generated by our co-generation facilities, to the extent not used in our alumina production, may also be used at the related smelter plants. We purchase electricity from regional power grids. Most of our power supply contracts are one to three year renewable contracts. Prices for electricity supplied by the power grids under such power supply

contracts are set by the government based on the power generation cost in the region and the consumers ability to pay. Industrial users within each region are generally subject to a common electricity tariff schedule, but rates vary, sometimes substantially, across regions. Each regional power grid serves a region comprising several provinces. The regional power grids generally rely on multiple power sources to generate electricity, with coal and hydro power being the two most common sources. We believe that the different types of power sources do not imply different degrees of reliability of supply, and that our power supply from the grids is generally not reliant upon any particular generation facility supplying the grid.

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Electricity purchased from different power grids is subject to different tariff levels. Our smelters average electricity cost (excluding value-added tax) was RMB0.246/kWh in 2003. Our electricity costs per tonne of primary aluminum for 2003 represented 32.0% of our unit primary aluminum production costs. A major challenge to our strategy of enhancing the competitiveness of our primary aluminum operations is the high price of electricity in China. In 2003, the total electricity used in the smelting operations at our primary aluminum production facilities was 11.3 billion kWh. We are currently in the process of negotiating our 2004 preferential electricity prices with the relevant PRC government authorities.

In the past, our smelters enjoyed a three-year exemption from paying urban public utilities surcharges levied by various localities. However, according to a notice issued by the PRC State Development Planning Commission dated December 21, 2003, the PRC government terminated such exemption from January 1, 2004. Although the levies will be based on the preferential electricity price currently available to us, we estimate that the annual cost we incur in purchasing electricity will increase by between RMB200 million to RMB500 million as a result of such termination.

We have established a joint venture company, Shanxi Huaze Aluminum & Power Co. Ltd., to undertake the construction of a new facility to produce primary aluminum and carbon anodes. The new facility will include a power plant with two 300 MW coal-fired generators. For more information, see - Our Expansion and Profit Improvement Plan .

Carbon Products. Carbon anodes and cathodes are key elements of the smelting process. For 2003, carbon anodes combined represented 11.0% of our unit primary aluminum production costs for those periods. Each of our smelters produces carbon products other than carbon cathodes, such as carbon anodes. Only our Guizhou plant has a carbon cathode production facility. It supplies all of our smelters with the carbon cathodes required, and sells any excess domestically to outside smelters. Several of our other carbon plants also sell externally carbon anodes not used by our smelters. In December 2003, we established Shanxi Huatai Carbon Company Limited which leases production equipment and facilities from Chinalco to produce carbon products.

Suppliers

We rely on our suppliers for the supply of raw materials including bauxite, coal, heavy oil and alkali. The amount of raw materials provided by our five largest suppliers for alumina products and primary aluminum products accounted for 8.7% and 9.1%, respectively of our total cost of raw materials for 2003. Raw materials provided by our largest supplier accounted for 2.5% and 6.1%, of our total cost of raw materials for alumina and primary aluminum, respectively in 2003. All payments to our suppliers are in Renminbi.

Sales and Marketing

We coordinate our major sales and marketing activities at our corporate headquarters. We set uniform prices for our alumina sales and set minimum prices in each region where our primary aluminum is sold. We have consolidated the networks of our branch offices to eliminate overlapping of administrative support and to reduce sales costs. In addition, in the fourth quarter of 2002 we formed subsidiaries in Shanghai City, Foshan City, Guangdong Province and Chongqing City to direct the centralized sales of our primary aluminum and alumina chemicals. Our subsidiaries have played an important role in establishing uniform prices for our primary aluminum ingots, improved our after-sales service and enhanced our influence in the marketplace. We intend to form similar subsidiaries in northern China and to expand our sales network.

Prior to 2003, for large-scale or long-established customers, which represent approximately 70% of our customers, we allowed cash on delivery or credit terms of usually up to 30 days depending on the customers financial background, years of relationship and payment history. Since 2003, as part of our centralized management program, we now require all sales of alumina and primary aluminum to be settled upon delivery. As a result, our accounts receivable declined from RMB19.2 million as of December 31, 2002 to RMB7.9 million as of December 31, 2003. We intend to continue to follow this policy.

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Alumina

We sell a portion of the alumina we produce to our own primary aluminum smelters and a majority of our alumina output to external customers. In 2002, we used approximately 1.4 million tonnes of the approximately 5.1 million tonnes of our total alumina output internally, which represented approximately 27.4% of our total alumina production. We sold approximately 3.7 million tonnes to outside smelters, which represented approximately 72.6% of our total alumina production for 2002. In 2003, we used approximately 1.4 million of the approximately 6.1 million tonnes of our total alumina output and output of alumina hydrate and alumina chemicals internally, which represented approximately 23.0% of our total alumina production. We sold approximately 4.2 million tonnes of alumina and approximately 0.5 million tonnes of alumina hydrate and alumina chemicals externally.

Sales

We coordinate sales of alumina at our corporate headquarters. In the fourth quarter of each year, we organize a national alumina sales conference with our domestic primary aluminum smelter customers in order to match our supply with their requirements for the following year. Based on our production capacity for the coming year, we first reserve the amount of alumina needed for primary aluminum production by our smelters before we determine the amount available for sale to other primary aluminum smelters. Next, we allocate our alumina to smelters with whom we have long-standing relationships and that have good credit and a good payment history. We consider other smelters only if we have remaining alumina to allocate. Approximately 95% of our sales of alumina are made through these annual conferences.

Based on the sales allocations we make at the annual conference, we and our customers typically enter into one-year sales agreements that set forth their total allocation and delivery schedules. At the time of entering into these one-year sales agreements, prices are left open and determined at or near the time of delivery at the then prevailing market price. We apply uniform prices to alumina sales regardless of where the alumina is produced. If a customer does not accept our price near the time of delivery, it may refuse to take delivery despite the one-year agreement. We began selling a portion of our alumina pursuant to long-term sales contracts in 2001. Since January 1, 2004, we have entered into three-year sales contracts for alumina. The sales volume under these three-year sales contracts accounts for approximately 10% of the total sales volume in 2003. Under these contracts, the sales volume is fixed, and the price is linked to an index of three-month futures price of primary aluminum quoted at the Shanghai Futures Exchange.

Customers

We sell our alumina to smelters throughout China. Sales to our five largest external customers accounted for 31.2%, 15.1% and 16.3% of our total external alumina revenues for 2001, 2002 and 2003, respectively. Sales to our largest customer accounted for 9.5%, 4.8% and 5.1% of our total external alumina revenues for the same periods. All of these major customers in the last three years were domestic smelters.

Pricing

We set, and adjust as necessary, uniform sales prices for alumina produced by any of our refineries. We made seven alumina sales price adjustments in 2003.

In setting and adjusting our prices for alumina, we take into account the cost of importing alumina under the prevailing import tariff rate, market demand and supply and our forecast of short and medium-term market trends. Import costs for this purpose include the following components:

- free-on-board Australia price;
- international shipping costs; and
- prevailing import tariffs of 10% for 2003 and 8% at present, and other import related fees.

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Primary Aluminum

We sell substantially all of our primary aluminum products to third parties. In 2002, we sold domestically 732,074 tonnes of primary aluminum, or 96.3% of our total primary aluminum sales, and 27,926 tonnes, or 3.7%, to overseas customers. In 2003, we sold domestically approximately 706,900 tonnes of primary aluminum, or 94.6% of our total primary aluminum sales, and approximately 40,100 tonnes, or 5.4%, overseas. As part of our primary aluminum segment, we derive revenues from domestic and international sales of carbon products, constituting approximately 3.9 % and 3.8% of our revenues of the primary aluminum segment in 2002 and 2003, respectively.

Sales

We sell our primary aluminum through two channels:

Contract sales. Most of our primary aluminum sales are made pursuant to contracts directly with our established customers. These may be long-term or short-term contracts, and deliveries may be made by a smelter plant directly or through a branch office.

Sales on the Shanghai Futures Exchange. As part of our effort to manage market risk, we sell a portion of our primary aluminum products on the Shanghai Futures Exchange through futures contracts of one to six month terms to hedge against a potential decline in primary aluminum prices.

We hold annual regional primary aluminum sales conferences in the fourth quarter of each year to coordinate the production and sales for the following year. We centrally control our product futures sales on the Shanghai Futures Exchange. To help stabilize our sales, we plan to increase the use of long-term supply contracts.

To improve the efficiency of our distribution, we divide our China market into several regions. Set forth below is a list of the major regional markets for our primary aluminum products ranked in terms of the volume of primary aluminum sold in 2003:

southern China;

eastern China;

southwestern China;

the Beijing-Tianjin-Tangshan area;

northeastern China; and

northwestern China.

Customers

Apart from a small amount of export sales, we sell all of our primary aluminum products to domestic customers. The Chinese market is our core market for primary aluminum, and we expect it to remain so for the foreseeable future. Domestic customers of our primary aluminum products principally consist of:

domestic aluminum fabricators which use our primary aluminum as raw material for further processing; and

aluminum distributors, which resell our primary aluminum products to domestic aluminum fabricators or other purchasers.

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Our five largest customers combined accounted for approximately 21.4%, 13.0% and 13.8% of our total primary aluminum revenues for 2001, 2002 and 2003, respectively. Our largest customer accounted for approximately 8.7%, 3.1% and 4.8% of our total primary aluminum revenues during the same periods. All of these customers are fabricators located in China s economically developed southern and eastern regions.

Our export operations consist of ordinary sales of our products to international customers and export sales of primary aluminum from our processing or tolling business. For our processing or tolling business, we are permitted to import alumina at a zero tariff provided that all such alumina is processed into primary aluminum and sold internationally. All export sales of our primary aluminum, whether as ordinary sales or as part of our processing or tolling business, are sold at negotiated prices.

Pricing

We establish pricing guidelines for domestic sales of our own primary aluminum products, taking into account three main factors:

- the primary aluminum spot prices on the Shanghai Futures Exchange (which are closely linked to the London Metals Exchange prices);
- our production costs and profit margins; and
- market supply and demand dynamics.

As part of our sales integration and centralization efforts, we set minimum prices with respect to each region in China where our primary aluminum is sold. These minimum prices are expressed by reference to the Shanghai Futures Exchange spot price for primary aluminum, not including transportation. The minimum prices may differ from region to region, but all of our primary aluminum sold into a region, regardless of the plant or warehouse from which it originates or is shipped, is sold at or above the minimum price applicable to that region. Our smelter plants filling particular orders are principally involved in discussions with the customer as to the pricing and delivery arrangements for specific transactions. They are required to comply with the minimum pricing guidelines unless prior approval from headquarters has been obtained. The customer pays for transportation in addition to the sales price. In general, we supply each region with products from our nearest smelters to minimize transportation costs as much as possible.

Alumina Hydrate, Alumina Chemicals and Gallium

Alumina hydrate, alumina chemicals and gallium are intermediate products of or otherwise related to our alumina production. Our production levels for these products are based on market demand for them. We sell all of our alumina hydrate, alumina chemicals and gallium externally, mostly domestically but some internationally. Due to a decrease in demand for gallium, we have temporarily halted production of gallium since August 2002.

Prices for our alumina hydrate, alumina chemicals and gallium are set by agreement with our customers. The prices for alumina hydrate and alumina chemicals are set according to market demand.

Delivery

Alumina

Delivery of alumina is made from our refineries by rail or truck. Our sales price is normally exclusive of transportation costs. For long-distance delivery, we have spur lines connecting our plants to the national railway routes. We are responsible for the maintenance of these spur lines. Shipping on the national railway system is at prices fixed by the government.

Primary Aluminum

Our primary aluminum products are transported to our customers mostly by rail. In view of the substantial distances that separate our smelter plants from southern and eastern China where most of the aluminum fabrication plants are concentrated, we have subsidiaries (often with warehousing capacity leased from third parties) in major cities in eastern and southern China to facilitate deliveries and coordination.

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Our Facilities

Our core facilities include seven production plants and our Research Institute. Set forth below is a plant-by-plant description of our facilities. Our production operations are organized and managed according to our two business segments, alumina and primary aluminum.

Pingguo Plant

The Pingguo plant commenced operations in 1994 and is located in the Guangxi Zhuang Autonomous Region in southwestern China, an area rich in bauxite resources. The Pingguo plant is our newest alumina and primary aluminum plant, and is equipped with imported facilities and technology. It is one of the most technologically advanced alumina and primary aluminum plants in China. It is also among the five largest smelters in China in terms of production volume. In April 2004, we received a notification from the China State Development and Reform Commission regarding their approval on March 29, 2004 for the establishment of the proposed joint venture Pingguo JV between us and Alcoa at the Pingguo Plant. We are in negotiations with Alcoa to form the Pingguo JV for bauxite mining, alumina refining and primary aluminum smelting. For further information, see Item 4. Information on the Company - Strategic Investor - Joint Venture at Our Pingguo Plant.

Our Pingguo plant is situated within 17 kilometers of our own mines that contain large, easily exploitable high alumina-to-silica ratio bauxite reserves. The Pingguo plant is our only refinery that uses the Bayer method exclusively. With imported European technology and production equipment, our Pingguo refinery features a high level of automation and energy efficiency. Since its inception, we have increased the Pingguo plant s original design capacity by removing production bottlenecks. Through other technological innovations, the Pingguo plant is able to minimize waste water discharges related to its alumina refinery. Most of its alumina output is used in the primary aluminum smelter at Pingguo and the remainder sold to external smelters in the Guangxi Zhuang Autonomous Region. A new production line at our Pingguo refinery with annual capacity of 400,000 tonnes of alumina commenced production in June 2003.

The Pingguo plant also uses advanced 160 kA and 320 kA pre-baked reduction pot-lines, which we developed, for its primary aluminum production. The aluminum ingots it produces are sold primarily in southern China.

Pingguo JV

We and Alcoa have committed to certain expansion projects to increase the alumina and aluminum production capacities at the Pingguo plant over the next few years. These expansion projects require approvals from the SDRC. The registered capital of the Pingguo JV is expected to be RMB3.64 billion. We will contribute 50% of the total registered capital of Pingguo JV by way of evaluated assets in the Pingguo Plant in the amount of RMB1.82 billion and Alcoa will contribute 50% of the total registered capital of the joint venture by way of cash amounting to RMB1.82 billion. Under the MOU dated November 12, 2001, we and Alcoa anticipate that the Pingguo JV will purchase from us the remaining part of Pingguo s assets and working capital using the additional funds to be raised by the Pingguo JV from commercial banks and the cash contributed by Alcoa. In addition, the MOU contains a provision whereby we may receive additional cash consideration from Alcoa on the fourth anniversary date from the formation of the Pingguo JV contingent upon the joint venture exceeding certain realized alumina and aluminum price levels during that four-year period. All capital expenditures incurred following the date of the formation of the Pingguo JV will be shared equally between Alcoa and us under the MOU. We are in the process of finalizing the terms and capital structure of the Pingguo JV under the joint venture agreement, and the articles of association of the JV. We expect to establish the Pingguo JV by the end of 2004.

Guizhou Plant

Our primary aluminum production facilities in Guizhou Province commenced operations in 1966 and have undergone numerous upgrades in technology since its establishment. With an annual production capacity of 235,000 tonnes, the Guizhou plant is China s second largest primary aluminum plant in terms of production volume. Its primary aluminum facilities consist of three large-scale pre-baked reduction pot-lines, ranging from 160 kA to 186 kA. As a result of technological innovations and overhauls since its inception, our Guizhou smelter plant is among the most technologically advanced smelters in China. Its primary aluminum products are sold primarily in southwestern China. Guizhou plant is undergoing a brownfield expansion project expected to be completed in 2005, with production at the designed capacity of 170,000 tonnes.

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The Guizhou plant also contains a modern carbon production facility. In addition to producing carbon anodes, it is the only facility we operate that produces carbon cathodes. As such, it supplies all of the carbon cathodes required by our five plants and our Research Institute. Its carbon cathodes are also sold externally throughout China.

Our Guizhou alumina refinery commenced operations in 1978 and is as advanced as any facility of its kind in China, as many of its key technologies and equipment are imported. It uses the hybrid Bayer-sintering process for its alumina production and relies on our own mines and outside suppliers for bauxite supply. Bauxite from our own nearby mines is shipped to the refinery by cable cars and train. The plant s alumina output is mostly used in the primary aluminum production at the same plant and the remainder sold to external smelters in Guizhou Province. We completed a technical improvement project at our Guizhou plant in 2002 and have continuously reduced our production costs and expanded capacity during 2003. The project also enables us to reduce our consumption of electricity, steam and heavy oil during the alumina production process.

Zhengzhou Plant

Our Zhengzhou plant is located in Zhengzhou, Henan Province, a province rich in bauxite resources. Its alumina and primary aluminum production commenced operations in 1966 and 1967, respectively. The Zhengzhou plant was the first refinery in China to develop the hybrid Bayer-sintering process. We completed the construction of a new alumina production line at our Zhengzhou plant in 2002 and commenced production from February 2004 using the ore-dressing Bayer process that we developed in recent years to refine low alumina-to-silica ratio bauxite. Since inception, Zhengzhou Plant s production facilities have undergone substantial technological upgrades, based on equipment imported from Germany and Denmark. The refinery has also benefited from its access to high alumina-to-silica ratio bauxite from our own mines and through local market purchases. It retains part of its alumina output for its primary aluminum production, and sells the remainder to our other smelters and external customers.

In 2003, we upgraded a portion of the primary aluminum facilities at this plant, which now utilizes 85 kA pre-baked reduction pot-lines. Its products are sold primarily to eastern China and the areas near Beijing. Its carbon plant produces consistently of high quality carbon products for external sale in Henan Province as well as for export, after meeting the needs of our various smelting operations.

Shandong Plant

The Shandong plant commenced operations in 1954 and has both alumina and primary aluminum production capacity. Its refinery was China s first production facility for alumina. Both the refinery and smelter are owned and operated by Shandong Aluminum, a joint stock limited company whose class A ordinary shares have been publicly offered to investors in the PRC and are listed on the Shanghai Stock Exchange. We currently hold a 71.4% equity interest in this listed company.

The plant produces the majority of its alumina through the sintering process, but has a small production line to produce alumina through the Bayer process using imported bauxite. During 2002, the Bayer production line was converted into an ore-dressing sintering operation. Our Shandong plant increased its alumina capacity by 160,000 tonnes from 770,000 tonnes to 930,000 tonnes by technical upgrades carried out in 2003. The Shandong plant purchases the majority of its bauxite requirements from small independent mines in Henan and Shanxi Provinces. The refinery supplies all of the alumina needs for the plant s primary aluminum production.

In addition to alumina, the refinery also produces substantial amounts of alumina chemicals and gallium. It is the largest and most technologically advanced alumina chemicals production facility, and produces the most varieties of these products, in China. Alumina chemicals produced by our Shandong plant are used in the jewelry, ceramics and other industries. Its alumina chemicals products are sold both domestically and internationally.

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Our Shandong plant s primary aluminum operations have undergone technological and equipment upgrades, with the majority of its original equipment having been replaced by more advanced equipment. During 2002, all self-baking reduction pot-lines were converted into 85 kA pre-baked pot-lines.

Qinghai Plant

Located in Qinghai Province, our Qinghai plant is a stand-alone primary aluminum production facility and is also China s largest smelter by production volume. This plant commenced operations in 1987 and, together with our Pingguo and Guizhou plants, stands at the technological forefront of primary aluminum smelters in China. It operates automated 160 kA pre-baked anode reduction pot-lines that were developed domestically. It benefits from relatively low electricity costs in Qinghai Province resulting from substantial hydroelectric power stations in the region. Historically, the plant has relied on our Shanxi, Shandong, Zhengzhou and Zhongzhou plants for its alumina supply, as well as imported alumina. Because of its relatively remote location, the plant incurs higher transportation costs for both raw materials and its primary aluminum products. It sells its products in southwestern and southern China. In 2003, our Qinghai plant established a new primary aluminum production facility with an annual capacity of 85,000 tonnes. As a result, its total primary aluminum capacity reached 367,000 tonnes at December 31, 2003.

Shanxi Plant

This plant commenced operations in 1987 and is located in Shanxi Province, a province with the largest bauxite deposits in China. Our Shanxi plant is a stand-alone alumina plant and is currently China s largest alumina plant in terms of production volume.

The Shanxi plant s production facilities are primarily imported and are technologically advanced compared with other domestic alumina refineries. In addition, we completed the technological upgrades to a portion of our facilities in June 2002. The plant relies on bauxite from our own mines as well as outside purchases principally from Henan Province. In close proximity to large coal mines and substantial water resources, the plant currently has the largest power cogeneration capacity of all of our alumina plants. It has historically sold its output to northern, northeastern and northwestern China. We commenced phase three of the Shanxi alumina expansion project in August 2003 which is expected to come into production by the end of 2005. The total alumina production capacity of our Shanxi plant will be increased by 800,000 tonnes after completion of the expansion project.

On March 30, 2003, we established a joint venture company, Shanxi Huaze Aluminum & Power Co. Ltd., with Shanxi Zhangze Electricity Company Limited to undertake the construction of a new facility for the production of primary aluminum and carbon anodes. The new facility will include a power plant with two 300 MW coal-fired generators. For more information, see - Property, Plants and Equipment - Our Expansion and Profit Improvement Plan - Shanxi Huaze Smelter .

Zhongzhou Plant

Situated in Henan Province, our Zhongzhou plant is a stand-alone alumina plant, located near bauxite, coal and water supplies. The plant commenced operations in 1993 and is equipped with imported and self-developed technology and has undergone various improvements and upgrades, including improved sintering technology. The 300,000 tonnes ore-dressing alumina project was completed by the end of 2003. We purchase bauxite supplies from Henan and Shanxi Provinces. The plant s alumina and other alumina products are sold mainly within Henan Province and it is also a supplier of alumina to our Qinghai plant.

The rotary kilns we installed in 2002 to improve capacity utilization and energy efficiency came into operation ahead of schedule and are working at full capacity. The 300,000 tonne ore-dressing Bayer second series project is progressing ahead of schedule and is expected to be completed by the end of 2004.

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Research Institute

Established in August 1965 and located in Zhengzhou, Henan Province, the Research Institute specializes in aluminum-related research and development. It is the only research institute in China dedicated to light metals research, and has played a key role in bringing about technological innovations in China s aluminum industry. The Research Institute is central to our research and development efforts. The Research Institute operates test facilities, which produce alumina hydrate, alumina chemicals and primary aluminum. It also provides research and development services to third parties on a contractual basis.

Competition

Alumina

As the sole producer of alumina in China and the dominant supplier of alumina to the Chinese market, we currently encounter no competition from domestic producers of alumina and no significant competition from domestic producers of other alumina products. We believe that we will not face significant competition from domestic alumina producers in the immediate future for the following reasons:

- the PRC government has set minimum annual capacity thresholds of 300,000-500,000 tonnes (depending on the production method employed) for the establishment of new alumina plants in China, which necessitates a considerable greenfield investment to enter into the Chinese alumina production market;
- a new producer would need access to a substantial and stable supply of bauxite; and
- we are experienced in alumina production and our production technologies are specifically adapted to the particular chemical composition of bauxite found in China.

The rapid growth of the aluminum industry has caused demand to exceed supply for alumina in China. The domestic supply shortfall has been filled by imports. Our alumina faces competition in the PRC market from imports principally by the major international aluminum companies. This competition intensified in 2003 as a result of increasing demand in the domestic market. In 2003, approximately 5.6 million tonnes of alumina was imported into China, a 22.7% increase over 2002. For the year ended December 31, 2003, our alumina production represented approximately 51.0% of total national consumption.

We believe that we have competitive advantages over our foreign competitors in the China alumina market. As a local supplier situated in close proximity to our customers, we do not incur international transportation and import-related costs and enjoy stable long-term relationships with our customers in a vast and growing market. Our competitive advantages may be reduced if international suppliers of alumina can offer alumina in China at prices below ours. After China s accession to the World Trade Organization on December 11, 2001, competition from international suppliers of alumina may increase as tariff and non-tariff barriers for imported alumina are significantly reduced. The standard tariff on imports of alumina into China has been reduced from 18% as of December 31, 2001 to its current level of 8% as of January 1, 2004 following China s accession to the World Trade Organization.

Primary Aluminum

Domestic Competition

Over 90% of our primary aluminum revenues are derived from sales in China. Our competition includes other domestic smelters and international producers that sell primary aluminum into China. For the year ended December 31, 2003, our primary aluminum production represents approximately 14.6% of total national consumption.

There are over 130 primary aluminum smelting companies operating in China, all of which sell all or substantially all of their products in China. We are the largest primary aluminum producer in China and our Qinghai and Guizhou plants operate two of the five largest smelters in China. Together our smelters accounted for 13.7% of the domestic primary aluminum production for 2003. Fewer than 25 smelters in China have annual production capacities of 50,000 tonnes or more and only four smelters in China (including Chalco) have annual production capacities of 200,000 tonnes or more. The remaining smelters are smaller, and some smelters use older, more polluting and less efficient technologies and have higher per unit production costs. It is the PRC government s industrial policy to consolidate the Chinese aluminum industry into one consisting of larger, less polluting and more efficient producers. Accordingly, the larger smelters are being granted favorable treatment, including priority in the allocation of raw materials and electricity supplies and prices. These preferential treatments, especially discounts in electricity prices, represent the strongest competitive advantage large domestic smelters have over small domestic smelters.

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

Scale of production. With five primary aluminum facilities, we can achieve significant economies of scale. In addition, our scale of production enables us to achieve high production volumes in order 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 employ more sophisticated and efficient technology than most of our domestic competitors. Our Pingguo, Guizhou and Qinghai plants are among the most technologically advanced smelting facilities in China. In addition, our technological support and research and development capabilities are superior to other domestic smelters.

Vertical integration. As the only integrated alumina and primary aluminum producer in China, we are able to supply alumina internally to our four integrated 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 our smelting operations of a stable supply of alumina.

Quality. The quality of our primary aluminum compares favorably with the primary aluminum produced by most of our domestic competitors. The primary aluminum produced by four of our five smelters has satisfied the quality standards of the LME and we are registered for trading on the LME.

International Competition

The current tariff rate for primary aluminum imports is 5%. In 2003, the rapid growth of the aluminum industry has caused supply to exceed demand for primary aluminum in China. China had a net export of approximately 493,000 tonnes of primary aluminum in 2003, representing 9.5% of the total primary aluminum consumption in 2003. With the new tariff rate in effect, competition from international suppliers of alumina and primary aluminum is expected to increase. Such competitors are likely to be large, efficient international companies, which generally have lower production costs than us. 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, other PRC governmental policies directed at fostering the growth of larger domestic smelters are likely to be retained after China enters the WTO, such as tax benefits, preferential electricity tariffs, and subsidies for research and development. We expect that international competition will accelerate the process of consolidation and closure of smaller domestic smelters.

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.

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

- the National Development and Reform Commission, which sets and implements the major policies concerning China s economic and social development policies, approves investments exceeding certain capital expenditure amounts, including approval of Sino-foreign joint venture projects, coordinates economic development of state-owned enterprises and oversees their reform, formulates industrial policies and investment guidelines for all industries including the aluminum industry; and

- the Ministry of Land and Resources, which has the authority to grant land use licenses and mining right permits.

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

Requirements for New Entrants and Other Capital Investments

Capital investments in new alumina refineries and primary aluminum plants as well as expansions and renovations of existing plants require prior approval by the National Development and Reform Commission if the amount of the proposed investment exceeds RMB50 million and by the State Council if the amount exceeds RMB200 million. Moreover, in order to obtain governmental approval for its establishment, a new alumina refinery must have an annual production capacity of at least 500,000 tonnes if it uses the sintering process, 400,000 tonnes if it uses the hybrid Bayer-sintering process or 300,000 tonnes if it uses the Bayer process. Effective September 1, 1999, the State Economic and Trade Commission, has prohibited construction of any new smelter with less than 100,000 tonnes in annual primary aluminum production capacity. All legal and regulatory requirements for new projects and other capital investments in the alumina and aluminum industries apply equally to us. Accordingly, we are required to obtain all necessary governmental approvals for our capital expenditure plans.

Any capital markets financing activities, for example, to finance a capital project, are subject to approval by securities regulatory authorities and other relevant authorities in China, regardless of whether the funds are raised in China or on the international capital markets. An issuer of equity securities or equity-linked securities in the PRC must obtain prior approval from the China Securities Regulatory Commission. For the issuance of equity or equity-linked overseas securities, the issuer is also required to obtain approval from the National Development and Reform Commission. Offerings of debt, such as debentures, are subject to approval from the People s Bank of China, as well as the State Development Planning Commission. For all international financing activities through bank borrowing or issuance of debt, the issuer must obtain prior approval from the State Administration of Foreign Exchange and register with it after the completion of the transaction.

Foreign investment in the production of alumina and primary aluminum is encouraged by the PRC government subject to various conditions. Wholly foreign-owned companies may conduct bauxite mining operations in the western region of China, but bauxite mining activities in other regions of China may only be conducted jointly with PRC entities in the form of a joint venture. Foreign investment in the aluminum industry in China, if permitted and approved, is eligible for favorable tax treatment and other incentives available under PRC law to encourage foreign investment in China.

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, except for electricity, the price of which is described below. Freight transportation on the national railway system is subject to government mandated pricing.

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Electricity Supply and Price

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

The Electric Power Law and related rules and regulations govern electricity supply and distribution. Currently, China s two state-owned power companies, through their respective local subsidiaries, operate all the regional power grids in China from which we obtain most of our electricity requirements.

Regulations Concerning Imports and Exports of Alumina and Primary Aluminum

Imports of alumina into China are subject to import tariffs. The current standard tariff rate for alumina is 8%. Imports of primary aluminum into China are also subject to import tariffs currently at the rate of 5%. Pursuant to China s commitment under its World Trade Organization agreement, tariff rates for alumina imports will be further reduced. There are no governmental restrictions on exports of alumina or primary aluminum.

Environmental Protection Laws and Regulations

The State Administration for Environmental Protection is responsible for uniform supervision and control 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 and above are responsible for environmental protection within their areas of jurisdiction.

Environmental regulations require companies to file an environmental impact report with the environmental bureau in the relevant county 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 is satisfied 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.

Remedial measures for breaches of the Environmental Protection Law include a warning, payment of damages or imposition of a fine. 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 and may be fined. Criminal liability may be imposed for a material violation of environmental laws and regulations that causes 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 and relevant local authorities. Upon approval, a mining permit is issued by the relevant administrative authorities, which are responsible for supervision and inspection of mining exploitation in their jurisdiction. Annual reports are required to be filed by the holders of mining rights with the relevant administrative authorities.

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

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

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

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

Research and Development

Our research and development efforts over the years have helped to expand our production capacity and reduce our unit production costs. We have successfully commercialized our previous research and development results in various technologies.

As of December 31, 2003, we owned 188 patents in China. The major registered patents relate primarily to technologies and know-how, equipment and new products. Once registered, a patent in China for a new invention is valid for 20 years and for a new function or a new design is valid for 10 years from the date of the patent application.

As of December 31, 2003, we owned 28 trademarks, which are used to identify our businesses and products. The trademarks have a term of 10 years. We have entered into a Trademarks License Agreement with Chinalco for the non-exclusive use by Chinalco of two of our trademarks relating to aluminum fabrication.

Although the PRC has been promulgating and amending its patent, trademark, and license laws to comply with various international agreements, its laws are still evolving. In its current form, Chinese intellectual property law differs from United States intellectual property law in significant ways. For instance, the PRC patent administration may grant a compulsory license on a patent if it is unable to obtain a license from the patent owner for reasonable terms and within a reasonable time frame. Chinese patent law also provides immunity from damages for an entity that uses or sells a patented product without knowing that it was made or sold without the patentee s permission so long as it proves that the infringing product was obtained from a legitimate source. United States patent law does not offer such provisions. Chinese law also awards patents on a first-to-file system as opposed to the United States first-to-invent system. Chinese trademark law is similarly based on a first-to-register system as opposed to the United States first-to-use system.

Moreover, the PRC government and its courts have limited experience in enforcing its intellectual property laws. Modern PRC patent and trademark laws have only existed for approximately 20 years. Courts in China have not reached the same level of experience in enforcing and interpreting intellectual property laws as have the courts in the United States. However, the PRC government has created administrative bureaus specifically for patent and trademark infringement disputes as an alternative to judicial resolution. These administrative bureaus have the power to order an infringing party to stop and desist from such violations.

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

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Environmental Protection

We are subject to PRC national environmental laws and regulations and also environmental regulations promulgated by the local governments where we operate. These include regulations on waste discharge, land repair, emissions disposal and mining control. For example, national regulations promulgated by the PRC government set discharge standards for emissions into the air and water. They also promulgate schedules of discharge fees for various waste substances. These schedules usually provide for discharge fee increases for each incremental increase of the amount of discharge up to a specified level set by the PRC government or the local government. For any discharge exceeding the specified level, the relevant PRC government agencies may order any of our facilities to rectify certain behavior causing environmental damage, and subject to PRC government approval, the local government has the authority to order any of our facilities to close for failure to comply with existing regulations.

Our bauxite mining operations are subject to relevant environmental laws and regulations promulgated by national and local governments, including regulations on waste discharge, land repair, emission management and mining control.

The pollutants discharged from our alumina refining process include red mud, waste water and waste emission of gases and dust. Our primary aluminum production process generates fluorides, pitch fume and dust, which are illegal to be released into the atmosphere without first being processed. Once processed, the amount of pollutants that can be released is subject to national or local discharge limits.

Each of our alumina refineries and primary aluminum smelters has its own waste treatment facilities on site or has developed other methods to dispose of the industrial waste.

Our total capital expenditures for environmental protection was RMB123.1 million, RMB248.2 million and RMB30.5 million for the years ended December 31, 2001, 2002 and 2003, respectively. The significant increase in our environmental capital expenditures in 2002 as compared to 2001 was due to the undertaking of various environmental projects as part of the technological upgrade of existing production facilities at our Guizhou and Shandong plants. The significant decrease in our environmental capital expenditures in 2003 as compared to 2002 was due to decrease in our expenses on environmental protection-related facilities in 2003. We believe that our operations are substantially in compliance with currently applicable national and provincial environmental regulations.

Insurance

We currently maintain insurance coverage on our property and plants, our fixed assets, our transportation vehicles and various assets that we consider to be subject to significant operating risks.

We paid a total of RMB23.7 million in insurance premiums in 2003.

We are covered under the injury and accidental death insurance provided by the local government labor departments and do not purchase separate insurance policies from commercial insurers with respect to such risks. We also participate in the medical care program provided under

the government s social welfare plans and do not purchase medical insurance policies provided by medical insurance companies.

Consistent with what we believe to be the customary practice in China, we do not generally carry any third party liability insurance to cover claims in respect of personal injury, environmental damage arising from accidents on our property or relating to our operations (other than our automobiles) or business interruption insurance. More extensive insurance is either unavailable in China or would impose a cost on our operations that would reduce our competitiveness with other producers.

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Organizational Structure

We are organized as a joint stock limited company under PRC law. Chinalco, China Cinda, China Orient, China Development Bank, Guangxi Investment, Guizhou Development and our public shareholders (not including Alcoa) own 42.14%, 14.57%, 5.45%, 5.02%, 1.78%, 1.17% and 21.87%, respectively, of our issued share capital. Alcoa owns approximately 8.0% of our issued share capital.

Shandong Aluminum, a significant subsidiary located in Shandong Province, in which we hold a 71.4% interest, is a joint stock limited company established under PRC law. Its A shares are traded on the Shanghai Stock Exchange.

Property, Plants and Equipment

Land

Chinalco leases to us 453 pieces or parcels of land, which are located in six provinces, covering an aggregate area of approximately 58.3 million square meters for the purposes of all aspects of our operations and businesses. The leased land consists of:

433 pieces of allocated land with an area of approximately 57.8 million square meters, for which Chinalco has obtained authorization from the relevant administrative authorities to manage and lease the land use rights. Chinalco has obtained land use rights certificates in respect of 423 parcels of allocated land, with an aggregate area of approximately 56.4 million square meters, and land entitlement certificates in respect of the remaining ten parcels of land leased to us with an aggregate area of approximately 1,480,025 square meters; and

20 pieces of granted land with an area of approximately 488,586.3 square meters for which Chinalco has paid the land premiums and has been granted the 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, the leased term for each shall end on the expiry date of the mining rights or at the end of the actual mine life, whichever is earlier); and

granted land: until expiry of the relevant land use right permits.

The land entitlement certificates relating to the ten pieces of land held by Chinalco with an aggregate area of approximately 1.5 million square meters expired on December 31, 2001. Chinalco has, in accordance with its undertaking in the Land Use Rights Leasing Agreement, applied for land use right certificates for the ten pieces of land from the relevant land administrative bureaus on or before December 31, 2001. Chinalco has also undertaken to pay all costs arising from such application, to be responsible for any disputes, claims, damages, proceedings, arbitration, payments, costs and expenses arising from those land use rights and to indemnify for all of our losses or damages which we may suffer as a result of these circumstances. It is expected that such land use rights certificates will be obtained by the end of August 2004.

Buildings

Our principal executive offices, which we lease from Chinalco, are located at No. 12B Fuxing Road, Haidian District, Beijing, People s Republic of China 100814.

Pursuant to the reorganization, Chinalco transferred to us, among other operating assets, ownership of the buildings and properties for the operation of our core businesses, with Chinalco retaining the remaining buildings and properties for Chinalco s remaining operations. The buildings transferred to us comprise 4,631 buildings with an aggregate gross area of approximately 4.2 million square meters.

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The buildings transferred to us pursuant to the reorganization, which are located on land leased from Chinalco, 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 effect 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 of buildings for offices, dormitory, canteen and storage purposes. We lease 59 buildings to Chinalco, with an aggregate gross area of approximately 62,819 square meters. Chinalco leases 100 buildings to us, with an aggregate gross area of approximately 273,637 square meters. The leased terms of all these buildings are 20 years commencing from July 1, 2001. Chinalco does not have proper land and building title certificates for 34 of these buildings. Chinalco has applied for such certificates, which are expected to be obtained by the end of 2004.

Our Expansion and Profit Improvement Plan

Our capital expansion plan for 2004 and 2005 requires a total of RMB23,571.0 million in capital expenditures. Of this amount, RMB12,788.0 million is designated for investment in our alumina segment. We plan to use RMB10,783.0 million for primary aluminum segment projects. For more information, see Item 5. Operating and Financial Review and Prospectus - Capital Expenditures.

The following table shows the expected aggregate effects of our expansion and improvement plans for our alumina and primary aluminum production facilities for 2004 and 2005, without taking into account the contemplated joint venture at our Pingguo plant with Alcoa:

	Planned Capital Investment for 2004 and 2005	December 31, 2003 Production Capacity	Proposed Additions to Production Capacity		2005 Total Capacity
			2004	2005	
	(RMB in millions)	(in thousand tonnes)	(in thousand tonnes)		(in thousand tonnes)
Alumina	12,788.0	5,950.0	520.0	2030.0	8,500.0
Primary aluminum	10,783.0	743.7	132.0	450.0	1,326.0

Capital investments in our expansion and improvement plan are expected to reduce our unit production costs by:

- reducing the cost of our own mining operations; developing and implementing energy-saving technologies for alumina refining;
- removing bottlenecks in our refining processes by adding equipment, replacing outdated equipment and/or updating technology; and
- further improving the sintering, Bayer and hybrid Bayer-sintering technologies used in our operations to lower raw material and energy consumption rates.

In addition, we intend to reduce our unit production costs, as well as maximize the benefits we gain through expansion of our facilities, by capitalizing on our newly established centralized management system. This system will allow us to apply best practices uniformly throughout our production facilities, and enable cost saving measures and process improvements developed in any of our facilities to be shared by and incorporated into the operations of each of our other facilities. Further, our centralized management system will enable us to make effective production allocation decisions among our facilities as their production capacities are expanded through the application of our capital investments.

All capital expenditures to be incurred by the Pingguo JV following its formation will be borne equally by Alcoa and us. Unless otherwise specified, the information herein about capital expenditures and otherwise does not take into account this potential joint venture.

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Currently, we are engaged in the following expansion or technical improvement projects:

1. *Shanxi equipment improvements*. We began construction of phase three of our Shanxi refinery in August 2003. This project is expected to cost RMB2,100 million and increase the alumina production capacity of our Shanxi plant by 800,000 tonnes when the facility is fully operational. The construction is expected to be completed by the end of 2005.

2. *Henan Project*. We commenced the construction of an alumina production facility with a production capacity of 700,000 tonnes of alumina in November 2003. The project is expected to cost RMB2,530 million. The construction is expected to be completed by the end of 2005.

3. *Zhongzhou Project*. This 300,000-tonne ore-dressing alumina production facility has been completed and began production at the beginning of 2004. The project cost RMB1,300 million. Construction in the second production line of this 300,000-tonne ore-dressing alumina project commenced in April 2004, and it is expected to be completed in June 2005. The total investment of this production line will be RMB1,036 million.

4. *Guangxi Alumina Project.* We have established a joint venture company, Guangxi Huayin Aluminum Co., Ltd., with Guangxi Aluminum Development and Investment Stock Co., Ltd. (Guangxi Associate) and China Minmetals Non-ferrous Metals Co., Ltd. on February 18, 2003 to undertake the construction of an alumina plant to exploit the discovery of a bauxite deposit in western Guangxi Province. We have conducted feasibility studies and we are now preparing to construct an alumina plant with an annual output of 1,600,000 tonnes. The feasibility study report has been submitted to the relevant government authorities for approval.

5. On May 24, 2004, we entered into a non-binding framework agreement (the Framework Agreement) with Companhia Vale do Rio Doce (CVRD), a corporation duly organized and existing under the laws of the Federative Republic of Brazil, for the establishment of a joint venture company in Brazil. Subject to and conditional upon the satisfaction of a number of conditions precedent, we and CVRD agreed to study the feasibility of the construction of a greenfield refinery for the purpose of producing alumina (ABC Refinery) in Barcarena, State of Pará, Brazil, adjacent to the existing facilities of Alumina do Norte do Brasil, also known as Alunorte. It is intended that ABC Refinery will be owned by the joint venture company and shall be established as a first class alumina refinery with high competitiveness globally. The intended alumina capacity of the initial phase of ABC Refinery will be 1,800,000 tonnes per year, and may reach a final capacity of 7,200,000 tonnes per year through phased expansions. The proposed development of the ABC Refinery will involve a series of related transactions involving mining, transportation, shipping and port developments. The total investment for the initial phase of the proposed project is estimated to be US$1,000 million. The initial phase of the proposed project is expected to be completed and put into operation in 2007.

6. Other projects in our alumina segment include environmental projects (e.g. waste treatment and disposal, facilities improvement for environmental protection), projects to improve alumina and alumina chemicals product quality, maintenance projects for bauxite mines, equipment replacement and other projects to sustain our existing production capacity.

7. *Shanxi Huaze smelter*. We established a joint venture company, Shanxi Huaze Aluminum & Power Co. Ltd., with Shanxi Zhangze Electricity Company Limited on March 30, 2003 to undertake the construction of a primary aluminum plant and a power cogeneration facility. The projected annual production capacity of the facility is 280,000 tonnes of primary aluminum and 160,000 tonnes of carbon anodes. The new facility will include a power plant with two 300 MW coal-fired generators. The total investment is projected to be RMB6,014 million. We will contribute RMB900 million for a 60% equity interest and Shanxi Zhangze would contribute RMB600 million for a 40% equity interest. The total investment amount above the RMB1,500 million in capital contributed by the joint venture parties will be financed from external sources, including possibly debt guaranteed by Shanxi Zhangze and us in proportion to our equity interests. The term of the joint venture is 30 years from March 30, 2003. We have commenced the construction of the smelter and power plant in September 2003 and expect to complete the project by the end of 2005.

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8. *Guizhou fourth series*. We have commenced construction of this primary aluminum smelter in August of 2003. The project is expected to cost RMB1,724 million. This brownfield expansion project is expected to be completed in August 2005, with production at the designed capacity of 175,000 tonnes of primary aluminum.

On June 16, 2004, we entered into a non-binding letter of intent with Lanzhou Aluminum Corporation Limited, Lanzhou Aluminum Plant and the Gansu Province State-owned Assets Administrative and Management Committee in connection with the proposed acquisition of a 29% equity interest in Lanzhou Aluminum Corporation from Lanzhou Aluminum Plant. The proposed acquisition is subject to a number of conditions, including approval by the State-owned Assets Administrative and Management Committee.

We intend to fund these capital expenditures through a combination of internal funds derived from our own operations, the remaining proceeds from our initial public offering and bank financing.

The preceding paragraphs provide a summary of our current capital expenditure plans for our major projects. These plans have been developed based on facts currently known to us, assumptions we believe to be reasonable and our estimates of market and other conditions. They may change as circumstances change, and may be modified as our business plans evolve. Other than as required by law, we do not undertake any obligation to publish updates of our plans or their implementation status.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

The following discussion and analysis should be read in conjunction with our audited financial statements, and selected historical financial data, in each case together with the accompanying notes, included elsewhere in this annual report. Our audited financial statements have been prepared in accordance with HK GAAP, which differ in certain material respects from U.S. GAAP. Note 34 to our audited financial statements provides a reconciliation of our financial statements to U.S. GAAP in accordance with Item 18 of Form 20-F.

The Reorganization

Prior to the reorganization conducted in preparation for the global offering, we did not exist as a separate legal entity. Our operations were conducted by Chinalco and its predecessors. As part of the reorganization, Chinalco transferred to us assets and liabilities related to seven alumina and primary aluminum production plants and our Research Institute. Because Chinalco controlled these operations prior to the reorganization and still controls us, our financial statements included in this annual report, which are related to periods prior to the reorganization on July 1, 2001, have been prepared on the basis of a reorganization under common control in a manner similar to a pooling of interests. Accordingly, in those financial statements, the assets and liabilities transferred to us have been stated at historical amounts and the results of our operations have been presented as if our operations had already been transferred to us from Chinalco. In addition, those financial statements also reflect the assets, liabilities, revenues and expenses of operations retained by Chinalco in the reorganization, including one bauxite mine, two limestone quarries and a carbon plant, which were directly related to our alumina and primary aluminum operations. In addition, because of the asset reorganization and the related carve-out accounting, those financial statements reflect various historical payments as distributions to Chinalco that are not expected to be indicative of future practices or results.

Since July 1, 2001, our financial statements as included in this annual report have been prepared using the acquisition accounting method having given effect to our incorporation and the reorganization. Accordingly, the assets and liabilities transferred to us have been restated at fair value and the assets, liabilities, revenues and expenses of operation retained by Chinalco are not reflected. Since July 1, 2001, all transactions have been recorded at government guidance price, market price or at contractual price (cost plus a margin). See Item 4. Information on the Company -

History and Development of the Company - The Reorganization for a more detailed discussion of what assets and liabilities were transferred to us by Chinalco.

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Critical Accounting Policies

Our significant accounting policies under HK GAAP and U.S. GAAP which are presented in Note 1 and Supplementary Information to our audited financial statements, respectively, are essential to the understanding of our operating results and financial condition. Some of our accounting policies require our management to make significant judgments relating to estimates and assumptions about the effects of circumstances to reported amounts in our financial statements. We have established procedures and processes to facilitate the making of such judgments in the preparation of our financial statements.

The following is a summary of our critical accounting policies. In each area, management has identified areas of uncertainty and the variables most important in making the necessary estimates. 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 financial statements.

Goodwill

Goodwill represents the excess of purchase consideration over the fair values ascribed to the separable net assets of entities acquired. Under HK GAAP, it is recognized as an intangible asset and amortized on a straight-line basis over its estimated useful economic life of not more than 20 years. The gain or loss on disposal of an entity includes the unamortized balance of goodwill relating to the entity disposed of. Whenever an indication of impairment exists, the carrying amount of goodwill is assessed and written down immediately to its recoverable amount.

Under U.S. GAAP, the evaluation of the impairment of goodwill must be performed at least annually and involves comparing the current fair value of the business and estimated future cash flows generated by the reporting units. Management made a number of significant assumptions and estimates in the application of the discounted future cash flow model to forecast operating cash flows, including business prospects, market conditions, selling prices and sales volumes of products, costs of production and funding sources. Management considers both past data and all currently available information at the time the valuations of its businesses are performed. Results in actual transactions could differ from those estimates used to evaluate the impairment of goodwill.

Property, Plant and Machinery

The carrying amounts of long-lived assets are reviewed whenever events or changes in circumstances indicate that the book value of the assets may not be recoverable. An impairment exists when the carrying amount of an asset exceeds its recoverable amount. The recoverable amount is measured at the higher of net selling price or value in use, calculated based on discounted future pre-tax cash flows related to the asset or the cash generating unit to which the assets belong. A cash generating unit is the smallest identifiable group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows from other assets or group of assets. Estimates of future cash flows include the cash inflows from continuing use of the asset and cash outflows to prepare the asset for use that can be directly attributed, or allocated on a reasonable and consistent basis, to the asset. If applicable, estimates also include net cash flows to be received (or paid) for the disposal of the asset at the end of its useful life. Management made a number of significant assumptions and estimates in the application of the discounted future cash flow model to forecast operating cash flows, including business prospects, market conditions, selling prices and sales volume of products, costs of production and funding sources. If there is an indication of impairment, the carrying value of such assets is written down to its recoverable amount. Results in actual transactions could differ from those estimates used to evaluate the impairment of such long-lived assets.

Provisions for Accounts and Other Receivables

Provision is made against accounts and other receivables when future collections are considered doubtful. In assessing the timing and amounts for these provisions, management must make a number of significant assumptions and estimates in the application of aging and specific identification analysis using past history and collections experience, potential events and circumstances affecting future collections and the credit status of specific customers, which are monitored on a regular basis. Management s assessment of future collections of receivables may differ from the timing and amounts of the actual collections in future periods.

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Income Tax

Income taxation charged to the results consist of current and deferred tax. Current tax is calculated based on the taxable income at the applicable rates of taxation of such year. Deferred taxation is provided for under the liability method, at the current taxation rate, in respect of temporary timing differences between profit as computed for taxation purposes and profit as stated in the financial statements to the extent that a liability or an asset is expected to be payable or recoverable in the foreseeable future. In forming a conclusion about whether a tax asset is recoverable in the foreseeable future, the management makes judgment in assessing the potential events and circumstances affecting future recoverability while at the same time considering past experience. If the management s interpretations or judgments differ from those of tax authorities with respect to the utilization of tax losses carried forward, the income tax provision may vary in future periods.

Overview

We are the sole producer of alumina (alumina oxide) and the largest producer of primary aluminum in China. We are also the second largest producer of alumina in the world in terms of production for the year ended December 31, 2003. We are engaged primarily in alumina refining and primary aluminum smelting operations. We report our financial results according to the following business segments:

Alumina segment, which consists of mining and purchasing bauxite and other raw materials, refining bauxite into alumina, and selling alumina both internally to our primary aluminum smelters and externally to customers outside of our company. To a lesser extent, this segment also includes the production and sale of alumina hydrate, alumina chemicals and gallium.

Primary aluminum segment, which consists of procuring alumina and other raw materials (including recycled aluminum), supplemental materials and electricity, smelting alumina to produce primary aluminum, and selling substantially all our primary aluminum products to external customers. To a lesser extent, this segment includes production and sales of carbon products.

Corporate and other services segment, which includes our headquarters operations, research conducted by our research institutes and provision of our research and development services to third parties.

Factors Affecting Our Operating Performances

Although we were incorporated on September 10, 2001 as a result of the reorganization, our financial statements and this discussion present our operating performances:

as if we had been in existence throughout the relevant periods; and

as if our operations and businesses (and various other operations including a carbon plant, one bauxite mine and two limestone quarries which were retained by Chinalco in the reorganization which took effect on July 1, 2001) were transferred to us as of January 1, 1998 and were conducted by us throughout the period ended June 30, 2001.

Our operating performances and the period-to-period comparability of our financial results are affected by a number of external factors. Our financial statements may not be indicative of our future earnings, cash flows or financial position for numerous reasons including those described below.

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Alumina Prices

We set uniform prices for all our external sales of alumina by following import-parity pricing and adjust the prices from time to time. Our import-parity pricing generally takes into account:

- free-on-board Australia prices for alumina exports into China;
- transportation costs from Australia;
- the current standard PRC import tariff at 8%;
- value-added tax at 17%;
- import related fees; and
- domestic demand and supply conditions.

The international market prices for alumina have been volatile from time to time, and this volatility affects the price of our alumina, which tracks changes in the international market prices. In 2003, the market prices of international and domestic alumina increase dramatically due to the substantial rise in global demand for aluminum and consequently demand for alumina. Spot prices of alumina imports increased to US$410 per tonne at the end of 2003 from US$170 per tonne at the beginning of 2003. The annual average price of alumina reached US$245 per tonne, representing an increase of 67.8% over 2002. In 2003, the supply shortfall of domestic alumina further widened, which led to a sustained increase in domestic alumina prices in line with the rising imported price. The annual average spot price of domestic alumina in 2003 was RMB2,817 per tonne, representing an increase of 46.0% over 2002. The price increase from 2002 to 2003 is mainly attributable to the substantial rise in demand for alumina in China and a shortage of supply resulting from low global production capacity.

In 2003, total domestic alumina output was approximately 6.1 million tonnes, representing an increase of 11.8% over 2002, making China the second largest alumina producing country in the world. In 2003, annual domestic consumption was approximately 11.9 million tonnes, representing an increase of 30.5% over 2002. Strong demand for alumina in China resulted in a substantial rise in the import of alumina. The volume of imports reached 5.6 million tonnes in 2003, representing an increase of 22.7% over 2002.

Internationally, the customary practice for alumina pricing under long-term contracts is by reference to the LME prices for primary aluminum. Since April 2001, we have entered into a number of domestic long-term alumina sales contracts with two-year terms, under which the sales price is set as a percentage of the three-month primary aluminum prices on the Shanghai Futures Exchange. As a result, fluctuations of primary aluminum prices on the Shanghai Futures Exchange can affect our alumina sales under these long-term contracts, and such effects may increase as we increase the proportion of alumina sales under long-term contracts. We have entered into three-year alumina sales contracts with third parties since January 1, 2004 and we expect to sell approximately 1.1 million tonnes of alumina under these contracts.

Primary Aluminum Prices

Like most primary aluminum producers in China, we price our primary aluminum products by reference to Shanghai Futures Exchange spot prices. The Shanghai Futures Exchange primary aluminum spot prices generally reflect LME primary aluminum spot prices, plus an amount on account of international transportation, import tariffs, value-added tax and other import-related costs. Thus, fluctuations in the Shanghai Futures Exchange (and, by extension, the LME) spot prices affect our operating performances. Primary aluminum prices on the Shanghai Futures Exchange and LME tend to be cyclical and volatile. The following table sets out the average three-month primary aluminum futures price on LME and the Shanghai Futures Exchange in 2001, 2002 and 2003.

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	2001	2002	2003
	(U.S. Dollar per tonne)		
LME	1,454.0	1,366.9	1,433.0
Shanghai Futures Exchange	1,478.8	1,388.9	1,499.1

Global and domestic demand for primary aluminum increased in 2003, resulting in a slight increase in primary aluminum prices. However, production capacity has been increasing more rapidly than demand, which may result in over capacity in future periods.

In 2003, the growth in aluminum consumption in China remained above 10% a year as a result of the rapid growth in its economy. China consumed approximately 5.2 million tonnes of primary aluminum in 2003, representing an increase of 26.5% from 2002. China s principal consumers of primary aluminum were the construction, auto, electric power and packaging industries. Total primary aluminum production volume in China was approximately 5.7 million tonnes in 2003, representing an increase of 27.5% over 2002, which is greater than China s growth in consumption. The net export volume of domestic primary aluminum was approximately 493,000 tonnes in 2003.

Electricity Prices

The smelting of primary aluminum requires a substantial and continuous supply of electricity. Therefore, the availability and price of electricity are key considerations in our primary aluminum production operations. Interruptions of electricity supply can result in lengthy production shutdowns, increased costs associated with restarting production and waste of production in progress. In extreme cases, interruptions of electricity supply can also cause damage to or destruction of the equipment and facilities. We encountered severe shortages of electric power supply in 2003. We do not expect any significant improvement of this situation until late 2006 when a number of national power generation projects are scheduled for completion. Electricity price increased by approximately 10% between the January 2004 to April 2004.

We are currently in the process of negotiating our 2004 preferential electricity prices with the relevant PRC government authorities. In the past, our smelters enjoyed a three-year exemption from paying urban public utilities surcharges levied by various localities. However, according to a notice issued by the PRC State Development Planning Commission dated December 21, 2003, the PRC government terminated such exemption from January 1, 2004. Although the levies will be based on the preferential electricity price currently available to us, we estimate that the annual cost we incur in purchasing electricity will increase by between RMB200 million to RMB500 million as a result of such termination.

Debt and Financing Costs Reduction

Our financing costs consist predominantly of interest expenses on our borrowings. From 2001 through December 31, 2003, our financing costs decreased primarily due to interest rate reductions, debt repayments and the debt-for-equity swap. The majority of our debt has been incurred to fund our capital expenditures. Interest rates on loans related to capital expenditures and working capital are set by the People s Bank of China. The People s Bank of China reduced interest rates for commercial loans chargeable by state-owned banks in 2001, 2002 and 2003. These interest rate reductions correspondingly reduced our interest expense on our floating rate loans. In addition, our plants historically received loans from state-owned banks with reduced interest rates (and in some instances interest free) as a form of government support for our projects. In 2001, 2002 and 2003, loans from state-owned banks at reduced interest rates amounted to RMB522.1 million, RMB348.0 million and RMB258.0 million, respectively. We expect that such preferential interest loans will continue to be available to us in the future.

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Consolidated Operating Performances

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

	Year Ended December 31,		
	2001[(1)]	2002	2003
	(percent)		
Sales of goods	100.0%	100.0%	100.0%
Cost of goods sold	73.0	79.5	70.7
Gross profit	27.0	20.5	