China’s Aluminum Industry---February 2008

Primary Aluminum

Chalco’s Guizhou branch reports that as of 2/20/08 its primary aluminum smelter had only re-started less than 2% of its production capacity (16 pots out of a total of 842 have been re-started). The Yangguang Asset Insurance Joint Stock Co., Ltd. has provided Guizhou Aluminum with 5 million Yuan to begin the process of re-starting its potline. Chalco’s Guizhou branch and Zunyi Aluminum Industry Co., Ltd. began reducing output as power became restricted starting in late December 2007, then on January 23, 2008 the Chalco Guizhou companies started to shut down production.

With the easing of the snow emergency, the gradual restoration of near-normal power output and distribution and a return to normalcy for transportation networks in China, production at non-ferrous metals companies in China has been restored to near normal in Hunan, Jiangxi and Anwei Provinces. There also will continue to be some restrictions on power for a period of time that will affect non-ferrous metals output, but in the longer term the need to rehab power plants damaged by the snow emergency will mean greater demand for non-ferrous metals. The effect of the disruption on the Chinese primary aluminum industry has been substantial; it is estimated that approximately 1.7 million tpy of primary aluminum capacity was affected by the snow emergency and power shortages and that for all of 2008 there will be an estimated 500,000 MT reduction in output of primary aluminum. Similarly, zinc output is expected to decline by 200,000 MT as a result of the disruptions. Yunnan Province not only avoided the worst of the snow-related disruptions of its non-ferrous metals industry, but because rainfall has been higher than normal, its hydropower output has increased over last year.

One forecast of China’s 2008 output of primary aluminum now estimates that total output will be 14.5 million MT, down 350,000 MT from a previous (pre-snow emergency) estimate of 14.85 million MT.

The following chart shows CNIA’s understanding of the state of reduced production and closures of primary aluminum capacity in China due to the snow emergency:

<table>
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<tr>
<th>Smelter</th>
<th>Capacity</th>
<th>Province</th>
<th>Present Situation</th>
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<tr>
<td>Chalco</td>
<td>400,000 tpy</td>
<td>Guizhou</td>
<td>Closed since 1/23</td>
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<tr>
<td>Zunyi Aluminum</td>
<td>110,000 tpy</td>
<td>Guizhou</td>
<td>Closed since 1/23</td>
</tr>
<tr>
<td>Qimingxing Al.</td>
<td>250,000 tpy</td>
<td>Sichuan</td>
<td>Operating at 83% since mid-January</td>
</tr>
</tbody>
</table>
Chuangyuan Al. 300,000 tpy Hunan Partial shutdown

In addition to the above, other primary aluminum smelters in Yunnan and Sichuan Provinces have been required to reduce output by between 10% and 30%.

An analysis of China’s primary aluminum industry released by Norsk Hydro estimates that China’s apparent consumption of primary aluminum in 2008 will grow at a rate of 24%, which while strong, will be less than the 38% rate of growth of apparent consumption of aluminum in China recorded in 2007. The Norsk Hydro report estimates that output of primary aluminum in 2008 will increase by 24%, lower than the 35% rate of growth of output in 2007 and that gradually China will become a net importer of primary aluminum.

**Alumina and Bauxite**

The Guizhou Wuchuan Zijin Mine Resources Co., Ltd., of which 80% is owned by the Zijin Mining Industry Group Joint Stock Co., Ltd. and 20% is owned by the Guizhou Province Non-Ferrous Geological Prospecting Bureau, has discovered a large, high quality bauxite deposit. The company now is developing a feasibility study for the development of a bauxite mine and an alumina refinery. According to the State Land and Natural Resources Office of Guizhou Province the bauxite reserves in Wachangping, Wuchuan county total 43.97 million MT of bauxite, which have an average specification of A1203 64.74% and an aluminum/silicon ratio of 7.3.

The Guizhou Province State Lands and Natural Resources Office recently conducted auctions on prospecting rights to three bauxite mines. Eighteen bidders from throughout China participated in the auction of prospecting rights for the following three bauxite mines: Qingzheng City’s Heitutian Bauxite Mine; Zhijin County’s Luocazhong Bauxite Mine and Xiwen County’s Tianmashan Bauxite Mine. With a starting price of 2: million Yuan, the prospecting rights for the Heitutian Bauxite Mine eventually was auctioned off for 120 million Yuan to the Sichuan Qiya Aluminum Industry Group Co., Ltd. The final prices for Luocazhong Bauxite Mine and the Tianmashan Bauxite Mine were, respectively, 8.4 million Yuan and 18 million Yuan and the winning bidders were, respectively, the Sichuan Qiya Aluminum Industry Group Co., Ltd. and the Guizhou Huafe Chemical Industry Company.

The Shanxi Province State-Owned Lands and Natural Resources Department has announced that in 2008 it will step up exploration for bauxite and other non-ferrous metals and minerals.

A 50,000 tpy aluminum hydroxide expansion project at Chalco’s Zhongzhou branch is now complete.

Output of alumina in January 2008 by Chalco companies decreased 1.4% to 863,000 MT.

According to 2/18/08 reports from international traders based in Beijing, in the next several weeks Chinese alumina prices are expected to fall below the 4200 Yuan/MT level because of weak demand in the spot market and because Chinese smelters’ stocks of alumina are sufficient.

The first phase of the Guangxi Huayin Alumina Refinery went into operation in mid-February 2008. The opening of the Huayin Alumina Refinery follows the opening of several other aluminum industry
projects in the Baise region of Guangxi Province; in 2007 the Guangxi Huamei Aluminum Industry Co., Ltd. went into production with its aluminum sheet, strip and foil production line and the Guangxi Nanhai Anshi Aluminum Alloy Auto Wheel Co., Ltd. began operations at its aluminum wheel production line. According to statistics released by the Geological Resources and Mining Conditions report issued by the government of the Baise region, the bauxite reserves in Baise amount to 800 million to 1 billion MT; these bauxite reserves account for approximately ½ of China’s total bauxite reserves (the four major bauxite regions in China are Guangxi, Shanxi, Guizhou and Henan Provinces). In addition to being plentiful the bauxite reserves in the Baise region are high quality, the deposits are thick and they are easily extracted. In addition to the 1.6 million tpy Huayin Alumina Refinery the Baise region hosts the 900,000 tpy Pingguo Alumina Refinery. Other projects include the Pingguo Copper/Alumium Sheet Mill and the Pingguo Asia Aluminum project. At present there is 3.4 million tpy of alumina refining capacity operating in Baise. As well ther is 200,000 tpy of aluminum fabrication. The eventual goal for the Baise region is to have 5 million tpy of alumina refining capacity and 1.2 million tpy of aluminum fabrication capacity operating; this level of output would produce approximately 100 billion Yuan in industrial output value.

Some analysts see the rapid increase in imports of alumina (660,000 MT, up 13.3%) as a sign that primary aluminum production in China will continue to grow, though others see the increase in alumina imports as a result of the shutdown of alumina refining in China due to the January-February 2008 snow emergency.

Alumina prices have declined ~11% in the month beginning January 21, 2008; as of February 21 the domestic price of alumina was ~3950 Yuan/MT. The decline in alumina prices is attributed to the decrease in primary aluminum production, which resulted from forced shutdowns of capacity to conserve power lost as a result of the snow emergency that China experienced just before and during the Chinese New Year holiday.

Chalco and other Integrated Chinese Aluminum Companies

In 2007 Nanshan Aluminum had income of 6.374 billion Yuan in its core businesses, a 184.09% increase y-o-y. Nanshan Aluminum’s gross profits from its core businesses in 2007 totaled 1.811 billion Yuan, a 359.07% increase y-o-y and net profits totaled 1.149 billion Yuan, a 543.59% increase y-o-y. Nanshan Aluminum is a vertically integrated company that combines power generation—alumina refining---primary aluminum smelting---casting---hot rolling---cold rolling---aluminum foil rolling in a 45 square kilometer area. Nanshan Aluminum also revealed that in 2008 it would issue 2.8 billion Yuan worth of convertible debt the proceeds of which will be used to build a 100,000 tpy new alloy materials production line and a 520,000 tpy aluminum alloy ingot casting line and for working capital. Nanshan Aluminum expects that profits from its rolling mills, especially its foil rolling operations, will steadily increase.

On February 18, 2008 Xiao Yaqing, the chairman of Chinalco said that the company not only doesn’t have plans to increase the amount of shares of Rio Tinto PLC that it owns through the special purpose company formed by Chinalco and Alcoa to purchase shares in Rio Tinto, it is also giving consideration to selling those shares to Rio Tinto’s announced purchaser, BHP Billiton, Ltd. In late January 2008 Alcoa and Chinalco announced that they had paid the equivalent of $117.97 U.S./share to purchase a 12% interest (of the shares of the company listed in London; if the shares of Rio Tinto listed in Australia are included, the interest that Alcoa and Chinalco purchased is 9%); the total consideration was $14.1 billion U.S. (Alcoa’s contribution is said to be only $1.2 billion of the total) and Chinalco’s investment makes it the largest foreign investment ever by a Chinese company. There have been reports that Chinalco has applied to the Australian Foreign Investment Review Board (FIRB) to increase its investment in Rio Tinto to 19.9%. BHP Billiton previously had offered to purchase Rio Tinto for $130.03 billion U.S., but Rio Tinto
expressed that that undervalued the company and has rejected BHP Billiton’s offer. The purchase of shares in Rio Tinto complicates the purchase of Rio Tinto by BHP Billiton and leaves open the possibility that Chinalco’s motive may be to try to purchase Rio Tinto (though that seems less likely given that Chinalco itself is valued at $50 billion U.S.), to obstruct the purchase of Rio Tinto by BHP Billiton and/or to acquire Rio Tinto’s aluminum assets. The purchase of shares in Rio Tinto by Chinalco seems curious to some because the greatest value of obstructing BHP Billiton’s purchase of Rio Tinto would be primarily in influencing the future price of iron ore, a raw material that is used in steel making, not aluminum smelting (though Rio Tinto does have bauxite and alumina assets); the iron ore connection leads some observers to conclude that Chinalco is acting on behalf of the Chinese government, which has learned several lessons from CNOOC’s failed bid for Unocal in 2005. One lesson is not to directly attempt an acquisition, but to do so indirectly. Another lesson is to have a Western partner (e.g., Alcoa) to provide some cover for the acquisition. And a third lesson is to buy shares in a less politically sensitive place (London) rather than a potentially more politically sensitive location (the U.S. or in the case of Rio Tinto, Australia); the purchase of Rio Tinto shares in Australia would have required approval of the FIRB and the purchase of more than 15% of the shares of Rio Tinto also would have triggered review and an approval requirement by the FIRB (hence the 12% purchase).

On February 5, 2008 the Yunnan Province State-Owned Assets Commission transferred 4% of the 51% of shares in Yunnan Copper Group that it owns to the Yunnan State-Owned Assets Operating Co., Ltd., a wholly owned subsidiary of the Yunnan Province State-Owned Assets Commission. Though there exists a parent-subsidiary relationship between the two, they have separate financial and operational systems. By transferring a 4% interest in Yunnan Copper Group, the Yunnan Province State-Owned Assets Commission is fulfilling a commitment to Chinalco for the latter to control the operations of Yunnan Copper Group, which Chinalco now does with its controlling 49% interest in Yunnan Copper.

In 2007, Chinalco’s Luoyang Copper Industry Co., Ltd. conducted import/export trade totaling $220 million U.S., a 44.46% increase y-o-y; in 2007 Luoyang Copper exported more than 17,400 MT of copper products, a 6.77% increase y-o-y. Luoyang Copper’s foreign exchange earnings exceeded $100 million U.S. for the first time, totaling $121 million U.S., a 22.25% increase y-o-y. In 2007 Luoyang Copper increased its use of hedging strategies to reduce its primary metal risk; the average price of its imported copper was $40 U.S. or more lower than the average LME spot market price in 2007.

**China’s Aluminum Fabrication Industry**

In January 2008 Chalco’s Southwest Aluminum Industry (Group) Co., Ltd. produced a total of 41,839 MT of products (including 10,928 M to cast ingot that supplied Southwest Aluminum’s sheet and strip company), an 11.07% increase y-o-y. In 2007 Southwest Aluminum produced 630,000 MT of aluminum products, a 16.15% increase y-o-y and had operating income of 15.9 billion Yuan, a 24.22% increase y-o-y; in 2006 Southwest Aluminum became China’s largest aluminum fabricator with operating income in excess of 10 billion Yuan for the first time. Now Chongqing city and Southwest Aluminum officials want Southwest Aluminum to continue to grow to become the world’s largest aluminum fabrication company; Southwest Aluminum plans to add an additional two production lines---one cold and one hot rolling line. At present Alcoa and Alcan are the world’s largest aluminum fabricators with output of fabricated aluminum products of, respectively, 1.1 million and 1 million tpy; at 630,000 tpy Southwest Aluminum’s output is now the third largest in the world. With the anticipated expansion Southwest Aluminum’s total output is expected
to increase to 1.2 million tpy by 2012.

Heilongjiang Province has announced plans to build an aluminum/magnesium alloy science and technology production base in the Pingfang district of Harbin. The aluminum/magnesium alloy production base is expected to reach 10 billion Yuan/year in output value by 2010 and be built upon two existing companies: the Dongan Engine Group and Northeast Light Alloy Co., Ltd. The Dongan Engine Group is the only company in China’s aeronautics industry that has mastered casting technology for the production of large scale, modern aluminum/magnesium alloy spacecraft shell. Northeast Light Alloy Co., Ltd. supplied its aluminum alloy materials for the “Shendan” spacecraft.

**International Aluminum Trade and Investment**

According to Chinese Customs statistics, aluminum exports (including primary metal and aluminum alloy) in January 2008 declined to 52,326 MT, a 2.6% decrease compared with December 2007 and a 6.6% decline compared with January 2007. The decrease in exports is attributed to the bad weather conditions in China that forced a slowdown or closure of a number of aluminum smelters in China.

In 2007, imports of bauxite through the ports of Shandong totaled 23.07 million MT and had a value of $1.03 billion U.S., increases, respectively, of 160% and 230%; imports of bauxite through the ports of Shandong account for more than 95% of all imports of bauxite into China. Bauxite imports principally came from Indonesia and India, which respectively accounted for 15.24 million and 5.25 million MT, increases, respectively of 90% and 140%; the imports from these two countries accounted for 88% of all bauxite imports into China. In 2007 the average price of imported bauxite increased 29.2% to $44.7 U.S./MT. China’s output of alumina in 2007 reached 28 million MT.

According to the CEO of Minmetals Group Company, the company will be increasing its investment in Latin America in the next several years. Minmetals is China’s largest state-owned metals trading company; it recently organized a joint venture with Codelco, the world’s largest copper producer to invest $550 million U.S. in Chile, which Minmetals says might eventually increase to $2 billion U.S.

According to a recent analysis of the effects on China’s aluminum industry of the disruption of power supply, it is being estimated that China’s primary aluminum imports may double in 2008 to 700,000 MT.

**Energy Conservation, Environmental Protection and the Aluminum Industry**

The snow emergency that disrupted power output and distribution in many parts of China and caused the slowdown or closure of heavy industry illustrates again the enormous energy use of heavy industry in China. An example of this reality is Chalco’s Guizhou Aluminum Industry, which completely shut down its operations to conserve power for residential users while the January 2008 snow emergency persisted. It is estimated that Guizhou Aluminum’s power consumption equals the total power consumption by residents and businesses in a mid-sized Chinese city.

As of February 18, 2008 the State Council reported that, with respect to the snow emergency,
70% or more of the damaged power transmission lines have been restored and ~74% of damaged transformers are operating again. Of the 170 counties where power was disrupted, 164 have now had service restored; and 87% of the villages and townships affected have had their power restored. The delivery of coal to power plants has increased considerably and the stockpiles of coal at power plants are gradually being replaced; as of February 18th there were 22 power plants whose stockpiles of coal were less than a three-day supply.

**Aluminum Industry Related Law and Policy**

The South African International Trade Administration issued a negative initial decision with respect to the anti-dumping case initiated against certain Chinese extrusion companies by South African extruders, and recommended that the anti-dumping investigation be terminated as to those companies; the South African International Trade Administration did however conclude that the extent of dumping by the other Chinese companies was 10.38%. The South African Customs Administration’s initial mediation concluded with a determination that Guangya Aluminum’s extrusion trade did not constitute substantive dumping and it imposed a 0% duty. This marks the first successful anti-dumping case for the aluminum extrusion industry of Foshan, Guangdong Province. Of the 16 Foshan extruders who exported to the Southern Africa Customs Union (comprised of South Africa, Lesotho, Swaziland, Botswana and Namibia) in 2006, there were five companies from Foshan that responded to the anti-dumping investigation inquiries. The South African International Trade Administration concluded that those five companies from Foshan---Yongxing, Jianmei, Guangcheng, Guangya and Zhaoqing Classic Emas---did not dump products. The South African International Trade Administration did conclude that there was injury to the South African extruders but it found that the Chinese extruders were not the source of the injury, as 74% of the Chinese extrusions exported to South Africa were not dumped. An official with Guangya Aluminum Industry summed up the lesson for Chinese extruders as they continue to face the threat of anti-dumping actions from various jurisdictions around the world: “neither should companies be afraid of, nor should they ignore” anti-dumping investigations. He went on to say that if Chinese enterprises are not able to respond to the investigation in a timely manner, they will likely be considered to have acquiesced to the anti-dumping accusations and they could lose foreign markets. Consequently, Chinese companies must put in the effort and accept the expense of responding to the anti-dumping investigation in a timely manner under the guidance of experts; additionally, where risk of anti-dumping investigation exists, Chinese companies must further strengthen financial bookkeeping and create a financial system that is as transparent as transnational companies’ financial systems. At the same time Chinese companies must build a linguistic, financial and legal cadre of talent within the company so that the company, when it is hit with an anti-dumping investigation, can respond quickly.

**Related Industries and the Chinese Economy**

In 2007 the Jiangxi Province non-ferrous metals industry produced a total of 1.340 trillion Yuan in output value and 1.29951 trillion Yuan in sales, increases over the year before period of respectively, 85.95% and 81.79%. In all Jiangxi Province’s non-ferrous metals industry produced a total of 694,600 MT of ten different non-ferrous metals, a 29.58% increase y-o-y. Of that total Jiangxi Province copper output totaled 640,800 MT, a 33.91% increase y-o-y and aluminum output totaled 5403 MT, a
160.28% increase y-o-y.

According to the State Statistical Bureau in January 2008 prices of industrial products increased 6.1% while prices of raw materials increased 8.9%. By category, prices of smelted and rolled ferrous metal products increased 17.3%, while prices of smelted and rolled non-ferrous metals increased 4.7%; within the non-ferrous metals category copper prices increased 2%, lead prices increased 27.9%, aluminum prices declined 2.9% and zinc prices declined 26.1%.

The 2008 Asia Non-Ferrous Metals Summit will be held on June 26-27, 2008 at the Shanghai International Convention Center. The conference anticipates that more than 200 persons from 20+ countries will participate, including representatives of BHP Billiton, Rio Tinto, Hindalco, Royalco Resources, Ltd., Sims Group, Nikkei MC Aluminum Industry Co., Minmetals, Shanghai Sigma and Chinalco. One of the major focuses of the conference will be the development of Asia’s secondary aluminum industry.

Compared with January 2007, in January 2008 China’s CPI increased 7.1%. The CPI rose in cities by 6.8%; in the countryside by 7.7%; prices of food products increased 18.2%; prices of non-food products rose 1.5%; consumer products increased 8.5% and the cost of services rose 2.6% in January. Compared with December 2007, the January 2008 CPI increased 1.2%. Viewed from the perspective of categories of products, in January 2008 prices of food products increased 18.2%, including an increase of 5.7% in the price of grains, 37.1% in the price of oils, 41.2% in the price of meat and meat products, 58.8% in the price of pork, 4.6% in the price of fresh eggs, 8.7% in the price of fish and seafood, 13.7% in the price of vegetables and 10.3% in the price of fresh fruits. The price of tobacco, alcohol and related products increased 2.1% in January 2008, including an increase of 0.4% in tobacco and 5.3% in the price of alcoholic products. The price of clothing declined 1.9% in January 2008. Prices of health and medical products rose 3.2% in January 2008, including an 0.5% increase in Western medicines, an 11.4% increase in Chinese medicine and an 0.9% increase in health and medical services. Transportation and communications costs declined 1.1% in January 2008, including a 2.9% decline in transportation equipment, a 6.8% increase in fuel and parts, a 1.9% increase in the cost of repairs and use of cars. Within cities the cost of inter-city transportation increased 6% and the price of communications devices decreased 19.6%. Housing costs increased 6.1% in January 2008, including a 5.5% increase in the cost of water, electric and fuel; a 5.7% increase in the cost of materials for home construction and renovation and a 4.7% increase in the cost of rentals.

In January 2008 the total value of China’s foreign trade was $199.83 billion U.S., including $109.66 billion U.S. in exports from China and 90.17 billion U.S. in imports into China, resulting in a trade surplus in January 2008 totaling $1949 billion U.S.