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# 2007 Minerals Yearbook

## ALUMINUM [ADVANCE RELEASE]

U.S. Department of the Interior
U.S. Geological Survey

February 2009

# ALUMINUM

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Domestic primary smelters produced 2.55 million metric tons (Mt) of aluminum metal valued at $6.88 billion during 2007. At yearend, 6 companies were operating 14 domestic primary aluminum smelters in 11 States. Smelters east of the Mississippi River accounted for about 67% of the production. Four smelters remained temporarily idled at yearend, and one smelter that had been idle was being dismantled. At yearend, about 22% [810,000 metric tons per year (t/yr)] of domestic primary aluminum smelting capacity, including idled potlines at operating smelters, was not being utilized.

Aluminum recovered from purchased scrap increased to 3.85 Mt. Of this recovered metal, 58% came from new (manufacturing) scrap, and 42% came from old (discarded aluminum products) scrap. Aluminum used beverage cans (UBCs) accounted for 40% of the reported old scrap consumed in 2007. According to the Aluminum Association Inc. (2008b), the U.S. recycling rate for aluminum UBCs was 53.8%. Although this represents an increase in the UBC recycling rate of 2.2%, the largest increase since 2003 when the rate fell to 50.0%, it remained well below the peak rate of 66.5% in 1997.

The transportation industry remained the leading market for aluminum products in Canada and the United States in 2007, accounting for 36.8% of metal shipments. Containers and packaging accounted for 22.9%; building and construction, 14.4%; electrical, 7.7%; machinery and equipment, 7.6%; consumer durables, 6.9%; and other uses, 3.7%.

The 2007 annual average U.S. market price of primary aluminum ingot increased slightly to $1.222 per pound from $1.214 per pound in 2006. The monthly average price remained above $1.00 per pound throughout the year.

At yearend 2007, total world inventories of aluminum, as reported by the International Aluminium Institute (IAI) (2008), were 3% lower than those at yearend 2006. Combined inventories of aluminum metal and alloys held by the London Metal Exchange Ltd. (LME), however, increased by 16%.

Primary aluminum was produced in 40 countries in 2007. China, Russia, Canada, and the United States, in decreasing order of metal produced, accounted for more than one-half of total world production. World primary metal production increased by 12% compared with that of 2006, primarily owing to a 35% increase in production in China.

## Production

***Domestic Primary Production.***—Northwest Aluminum Corp. began demolition of its 82,000-t/yr smelter at The Dalles, OR, which was closed in 2000. The site was to be made available for other industrial uses when the demolition was completed in 2009 (Lerner, 2007c).

In September, Noranda Aluminum Inc. and the United Steelworkers signed a 5-year labor agreement covering employees at its 250,000-t/yr smelter at New Madrid, MO. Production was not interrupted during negotiations after the previous contract expired August 31 (Noranda Aluminum Inc., 2007). Noranda settled a contract dispute with power provider Ameren Inc. and Missouri regulators concerning a 15-year electricity contract at the smelter (Collins, 2007).

Ormet Corp. completed the restart of all potlines at its 265,000-t/yr smelter in Hannibal, OH, during the fourth quarter. The restart, which began in December 2006 following a 2-year shutdown, had been slowed by interruptions in alumina shipments from Jamaica after Hurricane Dean damaged production and shipping facilities (Ormet Corp., 2007).

At Alcoa's smelter in Alcoa, TN, a power outage caused by a lightning strike in the middle of April resulted in a 7-week shutdown of one of two potlines. The affected potline has a capacity of 107,000 t/yr of aluminum. Alcoa also reduced production at its smelter in Rockdale, TX, owing to a shortage of anodes while upgrades were made to anode baking facilities (Alcoa Inc., 2007f, l).

Production started in February at an idle potline at Alcoa's smelter in Ferndale, WA. The restart was made possible after a long-term electricity supply contract with the Bonneville Power Administration (BPA) was negotiated in 2006. One of the smelter's three potlines remained idle (Alcoa Inc., 2007m).

Alcoa and the Public Utility District Number One of Chelan County, WA, reached terms for a 17-year contract for power to be supplied to the Wenatchee smelter. The new contract was to start in November 2011 when the current contract expires and will enable Alcoa to expand production by putting a third potline into operation. The output was expected to be increased by 42,000 t/yr for a total of 142,000 t/yr (Alcoa Inc., 2007n).

Alcoa also reached an agreement with the State of New York and the New York Power Authority for electricity to supply two smelters at Massena, NY. The contract was to start in 2013 when the current contract expires and was to last for 30 years, with the potential for a 10-year extension. Alcoa would make improvements to the smelters to reduce emissions and increase combined capacity to 274,000 t/yr from 255,000 t/yr. The improvements were expected to be completed in 2012 (Alcoa Inc., 2007i).

Alcoa's Eastalco smelter in Frederick, MD, remained closed, but the company was still searching for ways to obtain electricity at favorable rates in order to restart the smelter. The smelter, with a capacity of 195,000 t/yr, was closed in December 2005 when its previous power contract expired (Lerner, 2007a).

One potline that had been idle at Glencore International AG's (Baar, Switzerland) Columbia Falls Aluminum Co. smelter in Montana was restarted in January. The restart was enabled by

a long-term electricity supply contract negotiated with BPA in 2006. Three of the smelter's five potlines remain idle (Mining Journal, 2007).

***Domestic Secondary Production.***—Aleris International Inc. closed a secondary smelter located in Dickson, TN, as well as two others in Monterrey, Mexico, and Guelph, Ontario, Canada, during the fourth quarter of 2007 (Aleris International Inc., 2007a, c).

Alcoa broke ground on an expansion project at its UBC facility in Alcoa, TN. The project was aimed at increasing capacity by 50% while increasing energy efficiency and reducing emissions. Completion of the project was projected for mid-2009 (Alcoa Inc., 2007d).

Logan Aluminum Inc. (a joint venture of ARCO Aluminum Inc. and Novelis Inc.) announced plans to add a UBC recycling center and furnace at its Russellville, KY, rolling mill. The furnace was expected to be operational by January 2008 and would reduce the amount of molten aluminum and remelt scrap ingots needed from furnaces at other locations (McBeth and Peterson, 2007).

Spectro Alloys Inc. announced it would reduce output at its Rosemount, MN, smelter by 30% owing to slowing orders from U.S. automobile manufacturers. Increased demand from Toyota Motor Corp., however, prompted Missouri Smelting Technologies Inc. to expand production by adding a third furnace at its Jackson, TN, smelter and to announce plans to add another furnace in 2008 (McBeth, 2007).

A secondary smelter was reopened in Scottsboro, AL, by its new owner, Aluminum One Inc. The reverberatory furnace had been closed after only 3 years of operation in the 1990s. Addition of a rotary furnace was planned (Schaffer, 2007a).

Jupiter Aluminum Inc. was making repairs to a furnace that exploded in November 2006. Completion of the project was projected for early 2008. Repairs on two rolling mills were completed in the summer, and the third rolling mill was expected to be operational by early 2008 (Platts Metals Week, 2007e).

Arkansas Aluminum Alloys Inc. reopened its smelter in Hot Springs, AR, in March after replacing equipment destroyed by an explosion in October 2006 that killed two employees. The smelter had operated at reduced capacity with undamaged equipment for 2 months before stopping all production to install new equipment (Schaffer, 2007b).

**Mergers, Acquisitions, and Restructuring**

In March, Russian Aluminum Inc., Siberian Aluminum Inc., and the alumina assets owned by Glencore were merged into a single company known as United Company Rusal (UC Rusal). The proposed merger had been announced in October 2006. The new company had 4 bauxite mines, 10 alumina refineries, 14 aluminum smelters, and 3 foil mills located in 17 nations. UC Rusal became the leading producer of alumina and aluminum in the world (UC Rusal, 2007b). In December, in an effort to diversify as it expands, UC Rusal announced plans to purchase a 25% share of MMC Norilsk Nickel (Moscow, Russia), a major producer of nickel as well as cobalt, copper, and platinum-group metals (UC Rusal, 2007i).

In October, Rio Tinto plc acquired Alcan Inc. The combined company, known as Rio Tinto Alcan Inc., will be headquartered in London, United Kingdom. However, the administrative office for all of the company's aluminum operations will be maintained in Montreal, Quebec, Canada, as required by Canadian regulators and the terms of low-cost power contracts with the Canadian Government. Rio Tinto Alcan became the world's leading producer of aluminum, surpassing the newly formed UC Rusal (Rio Tinto Alcan Inc., 2007a).

Apollo Management LP acquired Noranda Aluminum Inc. (Franklin, TN) from Xstrata plc (Zug, Switzerland). Assets included a 250,000-t/yr smelter in New Madrid, MO, and three rolling mills located in Arkansas, North Carolina, and Tennessee. Other assets included a 50% share of the 1.25-million-metric-ton-per-year (Mt/yr) alumina refinery at Gramercy, LA, and a 50% share of the St. Ann bauxite mine in Jamaica. Xstrata had obtained the aluminum assets as a result of its acquisition of Falconbridge Ltd. in 2006, which had acquired Noranda earlier in 2006 (Xstrata plc, 2007).

Alcoa divested its holdings in Aluminum Corp. of China Ltd. (Chinalco). Alcoa had held 7% of the stock in Chinalco since the initial public offering of shares on the Hong Kong Stock Exchange in 2001. Alcoa said it would continue to maintain its presence in China through investments in production facilities (Alcoa Inc., 2007g).

Hindalco Industries Ltd. (Mumbai, India) acquired Novelis Inc. (Cleveland, OH), which owned rolling mills and UBC recycling facilities in the United States (Hindalco Industries Ltd., 2007b).

Alcoa and Orkla ASA (Olso, Norway) organized soft-alloy extrusion assets of both companies into a separate company named Sapa AB (Stockholm, Sweden). Sapa had a leading position in soft-alloy extruded aluminum products, with plants in Europe and North America. Plans called for Alcoa and Orkla to divest their stock in Sapa by yearend 2008. Alcoa also announced a deal to sell two soft-alloy extrusion plants in Warren, OH, and Plant City, FL, to Golden Aluminum Inc. A third soft-alloy extrusion plant in Tifton, GA, was to be closed in October (Alcoa Inc., 2007c, h).

In the fourth quarter, Alcoa completed a deal to sell its automotive castings business to Compass Automotive Group, LLC (Franklin, IN). The casting operations involved are located in Fruitport, MI, and Farsund, Norway (Alcoa Inc., 2007b). Alcoa also announced plans to sell its packaging and consumer business to Rank Group Ltd. (Christchurch, New Zealand). The sale was to be completed in the first quarter of 2008 (Alcoa Inc., 2007a).

In September, Aleris International acquired Wabash Alloys Inc., which was the leading producer of casting alloys made from recycled aluminum and had eight secondary aluminum smelters located in Canada, Mexico, and the United States (Aleris International Inc., 2007b; Wabash Alloys Inc., 2007).

In August, Joseph Behr & Sons Inc. closed it secondary aluminum smelter in Rockford, IL, in order to focus on its core business of scrap processing. Furnace equipment was sold to Spectro Alloys (Schaffer, 2007c).

## Consumption

Apparent consumption of aluminum in the United States declined by 5% in 2007 compared with that in 2006. Combined United States and Canadian shipments of aluminum declined by 8% in 2007 compared with the amounts shipped in 2006. Shipments of aluminum for transportation in 2007 declined by 10%, and for building and construction, by 17% compared with the amounts shipped in 2006.

Demand for extruded aluminum products used in the construction industry declined as a result of reduced home construction related to stricter credit standards (Lerner, 2007b).

The Boeing Co. forecast that 28,600 new aircraft would be constructed for the world's airlines and cargo companies by 2026. Boeing projected that 17,650 new planes will be single-aisle midsized aircraft with capacity ranges of 90 to 240 passengers, such as the Boeing 737 and Airbus A320. Boeing projected that construction of large aircraft with capacity ranges of 200 to 400 passengers, such as the new Boeing 787 Dreamliner, Boeing 777, and the Airbus A350, would account for 6,290 new aircraft by 2026. Very large aircraft capable of carrying more than 400 passengers, such as the Boeing 747 and the Airbus A380, would account for 960 new aircraft by 2026. Regional jets, which carry fewer than 90 passengers, would account for 3,700 new aircraft by 2026 (Boeing Co., 2007b). Boeing planned to focus efforts on reducing weight in order to maximize fuel efficiency, including substituting composite materials for aluminum, such as on the 787 Dreamliner, which is constructed with a composite fuselage and wings. Although the 787 Dreamliner contains 50% composite material by weight, it contains 20% to 30% aluminum and also 15% titanium. The 787 Dreamliner was unveiled in July, and the first deliveries were projected in 2009. The 787 Dreamliner was designed to replace the Boeing 767 and Boeing 757. The success of Boeing's 787 Dreamliner may lead to the company developing aircraft in future years in other size ranges in which composite materials replace aluminum (Boeing, 2007a). Because of the current aircraft construction, Boeing reported that all of the heat-treated aluminum plate capacity was being used, and more capacity was needed (Schmidt, 2007).

Alcoa increased its marketing of aluminum products for use on offshore oil platforms and drilling ships. Substituting lightweight and corrosion-resistant aluminum alloys for steel in drill pipes could reduce the weight of an offshore petroleum operation by more than 1,000 metric tons (t). Benefits of aluminum pipe include reduced cost for transportation, faster work speeds, greater safety, and the ability to drill to greater depths while in depths of water unreachable by platforms using steel pipe (Alcoa, 2007e).

The average aluminum content of Japanese automobiles rose to 130 kilograms (kg) per vehicle in 2006 from 96 kg per vehicle in 2000. The Japanese Aluminium Association projected that, by 2025, automobiles produced by Japanese companies will have an average of 250 kg of aluminum per vehicle (Watanabe, 2007). U.S. aluminum manufactures were working to increase the aluminum content in automobiles to 218 kg per vehicle by 2017 from an average of 148 kg per vehicle in 2007 (Burgert, 2007).

California increased the deposit on aluminum cans by 1 cent for cans less than 24 ounces and by 2 cents for cans 24 ounces or larger. The increased deposit was cited as the reason for the State's UBC recycling rate increasing to 83% in the first half of 2007, compared with 77% in the first half of 2006 (Marley, 2007).

## Stocks

According to data reported by the Aluminum Association, the combined United States and Canadian producers' inventories of aluminum ingot, mill products, and scrap declined slightly to 1.40 Mt at yearend 2007 from 1.41 Mt in 2006 (Aluminum Association Inc., 2008a). The LME reported that primary aluminum metal ingot stocks at its U.S. warehouses increased to 354,000 t at yearend 2007 from 92,700 t at yearend 2006. At yearend 2007, LME warehouses in the United States also held about 108,000 t of North American special aluminum alloy contract (NASAAC) metal ingot, a decrease from the 136,000 t held at yearend 2006 (London Metal Exchange Ltd., 2007).

## Prices

The monthly average U.S. market price of primary aluminum metal, as reported by Platts Metals Week, remained steady through the end of May, averaging $1.296 per pound first 5 months of the year. The monthly average price generally declined over the next several months, and finished the year at $1.107 per pound. The annual average price in 2007 increased to $1.222 per pound from $1.214 per pound in 2006.

The LME average monthly cash price for high-grade primary aluminum ingot followed the same general trend as the U.S. market price. The 2007 average annual LME cash price increased to $1.194 per pound from $1.163 per pound in 2006. The average monthly COMEX [Commodities Exchange division of the New York Mercantile Exchange, Inc.] spot settlement price for primary aluminum ingot decreased to $1.079 in December 2007 from $1.255 per pound in December 2006 and averaged $1.176 per pound for the year compared with $1.189 per pound in 2006.

The purchase prices for aluminum scrap, as quoted by American Metal Market, rose sharply through April, then declined sharply through July. From the end of July, prices gradually rose to finish the year slightly higher than the yearend price for 2006. The 2007 yearend price ranges for selected types of aluminum scrap were mixed low-copper-content aluminum clips, 80 to 82 cents per pound; old sheet and cast aluminum, 78 to 79 cents per pound; and clean, dry aluminum turnings, 77 to 78 cents per pound.

The aluminum producers' buying price range for processed and delivered UBCs, as quoted by American Metal Market, closed lower at yearend, but followed similar trends observed in the price of other scrap categories. The price range began the year at 87 to 89 cents per pound and closed the year at 78 to 80 cents per pound, averaging 85.6 cents per pound in 2007 compared with 85.1 cents per pound in 2006.

The yearend indicator prices for selected secondary aluminum ingots, as published in American Metal Market, increased

compared with those at the beginning of the year. The closing prices for 2007 were alloy A380 (3% zinc content), $1.09 per pound; alloy B380 (1% zinc content), $1.235 per pound; alloy A360 (0.6% copper content), $1.264 per pound; alloy A413 (0.6% copper content), $1.27 per pound; and alloy 319, $1.145 per pound. Platts Metals Week published an annual average U.S. price of $1.07 per pound for A380 alloy (3% zinc content). The average annual LME cash price for a similar A380 alloy was $0.99 per pound, and the annual average LME NASAAC spot price was $0.99 per pound.

**Foreign Trade**

In 2007, total net imports of aluminum-based materials declined by 30% compared with the net amount imported in 2006. Net exports of scrap increased by 13% compared with the amount in 2006, while net imports of crude metal decreased by 16%, and the net amount of semifabricated aluminum products imported decreased by 46% compared with those of 2006.

Exports of crude and semifabricated aluminum materials from the United States in 2007 were 3% lower than those of 2006. About 72% of total U.S. exports (crude, semifabricated, and scrap) in 2007 were shipped to China, Canada, and Mexico. Almost 97% of the aluminum shipments to China were scrap (table 8).

Imports for consumption of crude aluminum decreased by 14%, and imports of semifabricated aluminum materials decreased by 12% compared with those of 2006. Canada remained the leading source country accounting for 60% of the total imports in 2007, and Russia continued to be the second ranked supplier, accounting for 11% of total imports of aluminum (table 11).

**World Industry Structure**

***Production.***—China, Russia, Canada, and the United States, in decreasing order of metal produced, accounted for 59% of total world production. Primary aluminum production increased by 12% in 2007 compared with that of 2006 as a result of increased smelter capacity and demand (table 12). However, owing to greater demand, particularly in China, global inventories of crude aluminum decreased by 3% from the yearend 2006 level.

***Stocks.***—Unwrought aluminum inventories held by member producers of the IAI decreased by 5% to 1.55 Mt at yearend 2007 from 1.62 Mt at yearend 2006. Unwrought aluminum is defined by the IAI as aluminum in its basic form made from primary metal or from scrap that is unworked in the metallurgical sense. Total IAI aluminum inventories decreased by 3% to 2.85 Mt at yearend 2007 from 2.94 Mt at yearend 2006. Total aluminum includes unwrought aluminum plus unprocessed scrap, metal in process, and finished semifabricated (mill) products (International Aluminium Institute, 2008).

Yearend 2007 inventories of primary aluminum metal held by the LME increased by 33% to 929,000 t from 698,000 t at yearend 2006. Aluminum alloy inventories decreased by 54% to 45,800 t at yearend 2007 from 99,300 t at yearend 2006, and NASAAC ingot inventories decreased by 20% to 108,000 t at yearend 2007 from 136,000 t at yearend 2006 (London Metal Exchange Ltd., 2007).

**World Review**

The European Union (EU) reduced tariffs on aluminum produced in nonmember countries to 3% from 6% and was considering removing the tariff completely in 2009. Manufacturers in Eastern European nations recently admitted to the EU lobbied for removal of the tariff on aluminum imported from Russia and other sources (Miller, 2007).

***Algeria.***—Dubai Aluminium Co. Ltd. (Dubal), Mubadala Development Corp., and two Algerian companies, Sonatrach Ltd. and Sonelgaz Ltd., signed an agreement to build a 700,000-t/yr smelter with a 2,000-megawatt (MW) powerplant and adjacent port facilities in Beni Saf. A construction schedule was not announced (Dubai Aluminium Co. Ltd., 2007e).

***Argentina.***—Aluminio Argentino S.A.I.C. completed an expansion project on its smelter at Puerto Madryn in June. The project increased the smelting capacity to 410,000 t/yr from 275,000 t/yr. An additional expansion project was started that would add 105,000 t/yr of capacity, to be completed in 2010 (Aluminio Argentino S.A.I.C., 2007).

***Bosnia and Herzegovina.***—Aluminij Mostar Ltd. was modernizing its smelter and increasing capacity to 135,000 t/yr from 120,000 t/yr. The project was expected to be completed in 2008 (CRU Aluminum Monitor, 2007c).

***Brazil.***—In February, Companhia Brasileria de Aluminio Ltd. completed an expansion of the Aluminio smelter that increased capacity to 475,000 t/yr from 405,000 t/yr. Further expansions were planned that would increase capacity to 615,000 t/yr by 2011 (CRU Aluminum Monitor, 2007a).

In 2006, Brazil recycled 94.4% of all aluminum beverage cans sold during the year. Brazil collected and recycled more than 139,000 t of UBCs, the equivalent of more than 10.3 billion aluminum cans. Although the recycling rate was slightly lower than the record of 96.2% set in 2005, Brazil remained the world leader in aluminum can recycling rates for the sixth consecutive year among countries that do not have mandatory recycling laws (Associacao Brasileira do Aluminio, 2007).

***Cameroon.***—Rio Tinto Alcan and the Government of Cameroon signed agreements for studies on construction of two new hydroelectric powerplants to power a new smelter and increase power available at the existing Edea smelter. Capacity at the Edea smelter would increase to 300,000 t/yr from 90,000 t/yr, and the new smelter would have a capacity of up to 400,000 t/yr. The studies were expected to be completed by yearend 2009 (Rio Tinto Alcan Inc., 2007b).

***Canada.***—Alcan reached an agreement to sell surplus electricity from the Kitimat, British Columbia, smelter to BC Hydro Inc. Earlier in the year, Alcan and workers at the Kitimat smelter represented by the Canadian Auto Workers reached a labor agreement. Alcan was still seeking environmental permits to expand capacity at the smelter to 400,000 t/yr from 245,000 t/yr (Alcan Inc., 2007a).

***China.***—China announced a policy to close smelters and stop construction on smelters in progress that do not meet strict environmental and financing rules or that use obsolete

technology. Similar rules also would apply to alumina refineries under the policy (Xiaowei, 2007). However, many Provincial governments were ignoring the national Government's efforts to control growth in the aluminum industry. New projects were being allowed to move forward, and those operating in violation of the national Government's rules were still producing because the Provincial governments desired to increase employment and local economic growth (Pasek, 2007). In August, in an effort to increase aluminum supply in the Nation and reduce electricity use, China imposed a 15% export tax on aluminum bars and rods, while eliminating a 5% tariff on imports of primary aluminum in an effort to reduce exports of products that are energy intensive (Xiao, 2007).

Chinalco completed the acquisitions of Lanzhou Aluminum Co. Ltd. and Shandong Aluminum Industry Co. Ltd. in April. In July, Chinalco reached an agreement to acquire Baotou Aluminum Co. Ltd., subject to regulatory approval (Aluminum Corp. of China Ltd., 2008, p. 11, 13, 43).

Chinalco continued construction of improvements to smelting pots and a powerplant at the Lanzhou smelter. The projects would increase aluminum capacity to 430,000 t/yr from 260,000 t/yr and would be completed by early 2008 (Aluminum Corp. of China Ltd., 2008, p. 64). In June, Chinalco started construction on a 350,000-t/yr smelter in Fuzhou. The smelter was projected for completion in 2010. Chinalco also started construction on an aluminum complex located in Ganzou Province in April (China Daily, 2007).

Panshi Jialian Aluminum Co. started production from its 60,000-t/yr smelter and also announced plans to make improvements to the potline that would increase capacity to 75,000 t/yr. Construction on a second 75,000-t/yr potline was also planned, bringing total capacity to 150,000 t/yr by 2009 (CRU Aluminum Monitor, 2007b). Zouping Aluminum started production from an expansion project in March. The smelter capacity increased to 141,000 t/yr from 66,000 t/yr (CRU Aluminum Monitor, 2007d).

Baotou Aluminium Co. Ltd. was planning to increase capacity to 500,000 t/yr from 310,000 t/yr. Shanxi Huaze Aluminum and Power Co. Ltd. was expanding smelting capacity to 540,000 t/yr from 400,000 t/yr with a project to be completed by 2009 (CRU Aluminum Monitor, 2007a). Shanxi Guanlu Aluminum Co. started an expansion project in February at its smelter. Capacity would increase to 440,000 t/yr from 340,000 t/yr. A completion date was not announced (CRU Aluminum Monitor, 2007b). Hunan Changyuan Aluminum Co. was expanding capacity of its smelter to 420,000 t/yr from 210,000 t/yr (CRU Aluminum Monitor, 2007e).

Datun Aluminium Ltd. was seeking approval to expand capacity at its smelter to 260,000 t/yr from 110,000 t/yr. If approved, the project would be completed by the end of 2008 (Platts Metals Week, 2007d). The Qingzhen city government was engaged in talks with Chinalco and other potential investors to develop an aluminum complex to include a bauxite mine, an 800,000-t/yr-alumina refinery, and a 200,000-t/yr aluminum smelter. The refinery could be in production by 2010, and the smelter could be producing by 2011 (CRU Aluminum Monitor, 2007d). Alcoa and Yongquan Coal Industry Co. signed an agreement to develop an aluminum smelter and powerplant project in Shanxi Province. No schedule for the project was released (Interfax, 2007). Century Aluminum Co. signed a memorandum of understanding (MOU) with Guangxi Investment Group Co. to study the development of a high-purity aluminum smelter and alumina refinery at Laibin that was to be supplied with bauxite from Guangxi Autonomous Region. The proposed smelter would have a production capacity of 500,000 t/yr of aluminum (Century Aluminum Co., 2007b).

***Congo (Brazzaville).***—Century signed an MOU with the Government of Congo (Brazzaville) to build a smelter and alumina refinery at Pointe Noire that was to be supplied with domestic bauxite (Century Aluminum Co., 2007c).

***Congo (Kinshasa).***—BHP Billiton Ltd. and the Government of Congo (Kinshasa) signed an agreement to study the feasibility of building a smelter and expanding power generation capacity at the Inga hydroelectric powerplant. The smelter capacity would be 800,000 t/yr of aluminum. No completion date was given (BHP Billiton Ltd., 2007).

***Cuba.***—Venezuela's state-owned Alcasa Ltd. was studying opportunities to develop aluminium fabrication facilities in Cuba using aluminum from the Puerto Ordaz smelter (Beltran, 2007).

***Germany.***—Trimet Aluminium AG resumed production at the 133,000-t/yr smelter in Hamburg in May. The smelter had been closed since 2005 (Trimet Aluminium AG, 2007).

***Ghana.***—Volta Aluminum Ltd. closed the 200,000-t/yr smelter at Tema owing to power shortages in the country. The smelter had only operated at about 30% capacity prior to the shutdown because low rainfall had led to shortages of power from a hydroelectric dam that supplied one-half of the Nation's electricity (Platts Metals Week, 2007g).

***Greenland.***—Alcoa signed an MOU to conduct a feasibility study on the potential development of a 340,000-t/yr smelter and hydroelectric power generation plant. If the study proves favorable, construction on the hydroelectric powerplant could begin in 2010. Construction on the smelter could start in 2012 with completion in 2014 (Alcoa Inc., 2007j).

***Guyana.***—Bosai Minerals Group Co. Ltd. announced plans to build an 800,000-t/yr alumina refinery and a 400,000-t/yr smelter and an accompanying 1,000-MW hydroelectric powerplant. Bosai was also making improvements to the bauxite mine that would increase capacity to 2 Mt/yr (American Metal Market, 2007a).

***Iceland.***—Alcoa opened the Fjardaal smelter in April. When fully operational in early 2008, it would have a capacity of 346,000 t/yr. Full operation of the smelter was delayed as a result of problems at the powerplant that supplies electricity to the smelter (Alcoa Inc., 2007k; American Metal Market, 2007b).

Century completed an expansion of the Grudartangi smelter that increased its capacity to 260,000 t/yr from 220,000 t/yr (Century Aluminum Co., 2007a). Century received a positive report from regulators evaluating the environmental impact statement for a new smelter proposed near Helguvik. The proposed smelter capacity would be 250,000 t/yr with initial production in 2010 (Century Aluminum Co., 2007d).

Voters rejected a proposal that would have allowed expansion of Alcan's ISAL smelter in Hafnarfjordur. The company had proposed to expand the smelter capacity to 460,000 t/yr from

180,000 t/yr. Alcan officials said they were continuing to consider options for the future of the smelter (Barry, 2007).

***India.***—National Aluminum Co. of India Ltd. (Nalco) was expanding capacity of the Angul smelter to 460,000 t/yr from 345,000 t/yr. The expansion project was expected to be completed in December 2008 (National Aluminum Co. of India Ltd., 2006).

Hindalco was progressing on the Aditya aluminum complex, which would include a smelter with a capacity of 325,000 t/yr, an alumina refinery with a capacity of 1 to 1.5 Mt/yr, and a 750-MW powerplant. Environmental permits and long-term supply contracts for coal and water had been obtained. Commissioning of the smelter was planned by March 2011, and the refinery commissioning was expected by May 2011. Hindalco also was progressing on the phase 2 expansion project at the Hirakud smelter. The project would increase smelting capacity on the potline to 143,000 t/yr from 100,000 t/yr, with completion expected by mid-2008. Environmental permits and long-term supply contracts for coal and water were obtained for the 325,000-t/yr Mahan smelter project and a 750-MW captive powerplant. Commissioning of the smelter was projected for September 2012. The Latehar smelter project was progressing with preliminary environmental permits granted, and a coal supply agreement reached. Land acquisition for the proposed 325,000-t/yr smelter and a 750-MW powerplant was in progress. Completion of the project was projected for September 2013 (Hindalco Industries Ltd., 2007a).

Progress by Vedanta Resources plc on the Jharsuguda smelter was about 1 year ahead of schedule. The initial 250,000-t/yr capacity would be operational by mid-2008, with an additional 250,000 t/yr to be completed at a later date (Vedanta Resources plc, 2007, p. 7). Vedanta was evaluating the potential for a smelter in Chattisgarh. The proposed smelter would have a capacity of 250,000 t/yr (CRU Aluminum Monitor, 2007c).

Ashapura Minechem Ltd. was seeking approval to build an aluminum complex with a smelter, an alumina refinery, and a bauxite mine in the Koraput District of Orrisa (Metal Bulletin, 2006). Dubal and Larsen & Toubro were in negotiations with the local government to build a 250,000-t/yr smelter, a 3-Mt/yr refinery, and an accompanying bauxite mine in Orissa (Dubai Aluminium Co. Ltd., 2007d). Bharat Aluminium Co. and the State government of Chatttisgarh signed an MOU for the construction of a 650,000-t/yr smelter adjacent to its 345,000-t/yr smelter. No construction schedule was announced (Platts Metals Week, 2007c).

***Iran.***—Iralco Ltd. started production from the first phase of an expansion project at the Arak smelter. The smelting capacity was reported to have increased to 155,000 t/yr from 120,000 t/yr, and capacity when the full expansion is completed would be 230,000 t/yr (CRU Aluminum Monitor, 2007f).

Dubal entered an agreement to supply smelting technology to the Al-Mahdi aluminum smelter in Iran. In the first phase of the project, 156 pots would be constructed, with completion expected by the end of 2008. A second potline with an additional 228 pots was planned for construction after the first potline was completed, but a projected completion date for the second potline was not announced (Dubai Aluminium Co. Ltd., 2007b). Iran Mining Industries Organization, Ghadir Investment Co., and a consortium of Chinese companies signed an agreement to construct a smelter in Lamerd. The 276,000-t/yr smelter would be completed in 2011 (CRU Aluminum Monitor, 2007h).

***Kazakhstan.***—Eurasian Natural Resource Corp. started production from the first potline at the Pavlodar smelter in December. Initial capacity of the smelter was 62,500 t/yr, and further expansion was underway that would bring capacity to 125,000 t/yr in 2008 and 250,000 t/yr in 2011 (Eurasian Natural Resource Corp., 2007).

***Kyrgyzstan.***—Rinco Holdings Ltd., Vimetco Ltd., and Yulian Ltd. planned to construct an aluminum complex that included a 250,000-t/yr smelter, a 500,000-t/yr refinery, and a 500-MW powerplant. A construction schedule was not released (CRU Aluminum Monitor, 2007g).

***Malaysia.***—Rio Tinto plc signed an agreement with Cahya Mata Sarawak Berhad to conduct a feasibility study for a proposed 550,000-t/yr smelter in Sarawak. The smelter would be powered by the Bakun Dam that was under construction and expected to be completed in 2010 (Rio Tinto plc, 2007).

***Mozambique.***—Power outages disrupted production from the Mozal smelter, a joint venture between BHP Billiton and the Government. The extent of production declines was not reported (CRU Aluminum Monitor, 2007e).

***New Zealand.***—Rio Tinto Alcan signed an 18-year power supply contract with Meridian Energy for its smelter in Bluff, New Zealand (Television New Zealand, 2007).

***Nicaragua.***—The Government of Nicaragua and Venezuela's Ministry of Basic Industries and Mining signed an agreement to build an aluminum smelter. Capacity and construction schedules were not announced (TMCnet, 2007).

***Nigeria.***—UC Rusal moved forward with plans to reopen the 193,000-t/yr Alscon smelter in early 2008, which had been acquired from the Government of Nigeria in 2004 (Helmar, 2007).

***Norway.***—Norsk Hydro ASA closed the Soderberg potline at the Ardal smelter in June. The potline had a capacity of 48,000 t/yr, and the remaining prebake potlines had a capacity of 172,000 t/yr (Norsk Hydro ASA, 2007b). Norsk Hydro received approval to extend the operation of the 120,000-t/yr Soderburg potline at the Karmoy smelter until the end of 2009. The potline was to be closed because the Government deemed that this method emitted excessive pollutants and consumed too much electricity. The company was exploring the option of building new potlines with prebake technology that would operate within emission regulations if a contract for long-term power at favorable rates could be secured (Norsk Hydro ASA, 2007c). Norsk Hydro was making improvements to the power supply infrastructure at the Ardal smelter. The project would increase efficiency and production capacity (Norsk Hydro ASA, 2007d).

***Oman.***—Construction on the Sohar smelter continued with completion projected for the third quarter of 2008. The 350,000-t/yr smelter project is a partnership between Oman Oil Co. SAOC (40%), the Abu Dhabi Water and Electricity Authority (40%), and Alcan (20%) and was to use Alcan's AP35 potline technology. In addition to the smelter, the project would include carbon facilities and a gas-fired powerplant (Alcan, 2007c).

***Qatar.***—Norsk Hydro and Qatar Petroleum Co. Ltd. started construction of the Qatalum smelter at Mesaieed. The smelter

would have an initial capacity of 600,000 t/yr, with an additional 600,000 t/yr possible. Initial production would be by the end of 2009 (Norsk Hydro ASA, 2007a).

***Russia.***— Russia removed its tariff on primary aluminum imports and cut the tariff on aluminum alloys to 10% from 20% of the declared value (Moscow Times, The, 2007).

In October, production at UC Rusal's Khakas smelter reached full capacity of 300,000 t/yr (UC Rusal, 2007g). UC Rusal completed a modernization project at the Krasnoyarsk smelter that would reduce fluoride compound and hydrocarbon emissions. A similar project was started at the Bratsk smelter that would increase capacity to 1.09 Mt/yr from 990,000 t/yr. The smelters at Sayanogorsk and Irkutsk were also scheduled to be modernized to reduce emissions of (UC Rusal, 2007e, h).

UC Rusal started construction on a 750,000-t/yr smelter at Taishet. The four potlines of the smelter were to use RA-400 cells that were developed by the company. Initial production was expected in November 2009, with completion of the smelter projected by the end of 2011 (UC Rusal, 2007f).

UC Rusal signed an agreement in April with the Federal Highway, Railroad, and Energy Agencies on financing for construction of infrastructure needed for the Boguchanskaya smelter and hydroelectric powerplant on the Angara River. Construction on the 600,000-t/yr smelter started in May and was projected for completion in December 2009, with full capacity production anticipated in 2011 (UC Rusal, 2007c, d). UC Rusal signed an agreement with the Saratov regional government to study the construction of a 1.05-Mt/yr smelter. The smelter would be powered by two new reactors at the Balakovsky nuclear powerplant, which UC Rusal would pay to construct. The feasibility study was expected to be completed by yearend 2008 (UC Rusal, 2007j). UC Rusal and Rosatom, the Federal Nuclear Power Agency, reached an agreement on investment in a nuclear powerplant to power a new smelter in the Russian Far East. A feasibility study was projected to be completed by yearend 2007, with construction to be planned later if approved (UC Rusal, 2007a).

***Saudi Arabia.***—Alcan and Saudi Arabian Mining Co. signed an agreement to jointly develop an aluminum complex including an aluminum smelter, an alumina refinery, and a bauxite mine. The 720,000-t/yr smelter would receive alumina from a 1.6-Mt/yr refinery that would use bauxite from a 3-Mt/yr mine. The mine would be in the South Zone of the Az Zabirah bauxite deposit in the north central part of the Kingdom. The smelter capacity could be expanded to 1.2 Mt/yr. A completion date was not released (Saudi Arabian Mining Co., 2006; Alcan Inc., 2007b).

Western Way for Industrial Development Co. signed an agreement with China Nonferrous Metal Industry Foreign Engineering and Construction Co. and China National Machinery Industry Corp. to construct an aluminum complex in Jizan. The proposed complex would produce 700,000 t/yr of aluminum and 1.6 Mt/yr of alumina using bauxite imported from Greece. The projected completion date of the complex was not available (Ghafour, 2007).

Chinalco signed an agreement with Malaysia Mining Corp. and Saudi Bin Laden Group to build a 1-Mt/yr smelter in Saudi Arabia. The Saudi Government promised favorable rates on the power needed for the smelter. Construction was to begin in mid-2008 (China Mining, 2007).

***South Africa.***—Power outages disrupted production from BHP Billiton's smelters at Hillside and Bayside. The extent of production declines was not reported (CRU Aluminum Monitor, 2007e). Alcan made progress towards construction of the Coega smelter. Smelting capacity of the two-phase project would be 720,000 t/yr when completed. The first phase of construction was projected to start in 2008 and to be completed in 2010. A 25-year power agreement was secured in November 2006 with ESKOM Holdings Ltd. (Alcan Inc., 2006; 2007d).

***Tajikistan.***—Norsk Hydro agreed to a contract to provide assistance in modernizing the TadAZ smelter in Tursunzade. The project would increase production capacity to approximately 575,000 t/yr from 517,000 t/yr. In exchange, Norsk Hydro would get rights to supply 150,000 t/yr of alumina and to purchase up to 200,000 t/yr of aluminum (Norsk Hydro ASA, 2006). The Government canceled a deal with UC Rusal for constructing a 3,600-MW hydroelectric powerplant at Roghun and announced that it would construct the project without corporate investment (Platts Metals Week, 2007f).

***Trinidad and Tobago.***—Alutrint Ltd. received environmental permits for construction of a 125,000-t/yr smelter in La Brea. A construction schedule was not announced (Ramjohn, 2007). Plans for a smelter to be built by Alcoa in Chathem were on hold after the Government announced in December 2006 that the company could not construct the proposed 341,000-t/yr smelter. Alcoa said that it would seek approval for a smelter at another location in the country (Platts Metals Week, 2007b).

***United Arab Emirates.***—Dubal continued progress on a project to raise capacity of its smelter to 945,000 t/yr from 890,000 t/yr by the end of March 2008. Dubal stated that it intended to increase capacity to 2.5 Mt/yr by 2015 (Dubai Aluminium Co. Ltd., 2007a). In May, construction began on the 1.4-Mt/yr Emirates Aluminium (EMAL) smelter, a joint venture between Dubal and Government-owned Mubadala Development Co. The first phase of the smelter would be completed in 2010, with the second phase to be constructed at a later date. The project would include a 2,250-MW powerplant and was expected to be built at the Khalifa Port and Industrial Zone in Taweelah, Abu Dhabi (Dubai Aluminium Co. Ltd., 2007c).

***Venezuela.***—Alcasa shut down production from two of its potlines in Cuidad, with a combined capacity of 50,000 t/yr. The pots and related machinery were determined to be obsolete and unsafe to operate (Platts Metals Week, 2007a). UC Rusal signed an agreement with state-owned Corporacion Venezolana de Guayana to study opportunities in the aluminum industry in Venezuela. The joint venture would include all aspects of the upstream segment of the aluminum industry from bauxite mining through smelting of aluminum. No projections of completion of the study were given, nor was the scope of the projects involved (UC Rusal, 2007k).

## Outlook

World demand for aluminum was expected to continue to increase, although at a slightly slower pace than in recent years. Demand from China and other developing nations was

expected to remain strong, offsetting reduced demand from the housing and automotive sectors in the United States. Expansions of primary smelters in locations with low-cost, low-polluting sources of electricity were expected to offset idled older smelters in regions with constrained power supplies and high labor costs, and capacity was expected to keep pace with global demand. Temporary power outages at smelters are likely to result in short-term shortages as a result of the tight stock levels in warehouses. A relatively weak dollar, low labor costs, and low-cost shipping rates in containers being returned to China were expected to result in a continued high level of scrap exports from the United States and Western Europe as has been observed in recent years.

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TABLE 1
SALIENT ALUMINUM STATISTICS[1]

| | | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|
| United States: | | | | | | |
| Primary production: | | | | | | |
| Quantity | thousand metric tons | 2,703 | 2,516 | 2,481 | 2,284 | 2,554 |
| Value | millions | $4,060 | $4,660 | $4,980 | $6,110 | $6,880 |
| Price, average, U.S. market, spot | cents per pound | 68.1 | 84.0 | 91.0 | 121.4 | 122.2 |
| Inventories (December 31): | | | | | | |
| Aluminum industry[2] | thousand metric tons | 1,400 | 1,470 | 1,430 | 1,410 | 1,400 |
| LME stocks in U.S. warehouses[3] | do. | 207 | 116 | 209 | 228 r | 463 |
| Secondary recovery:[4] | | | | | | |
| New scrap | do. | 1,750 | 1,870 | 1,950 | 2,300 r | 2,250 |
| Old scrap | do. | 1,070 | 1,160 | 1,080 | 1,260 r | 1,600 |
| Total | do. | 2,820 | 3,030 | 3,030 | 3,560 r | 3,850 |
| Exports, crude and semicrude | do. | 1,540 | 1,820 | 2,370 | 2,820 | 2,840 |
| Imports for consumption, crude and semicrude | do. | 4,130 | 4,720 | 5,330 | 5,180 | 4,490 |
| Supply, apparent[5] | do. | 8,870 r | 9,080 r | 9,220 r | 9,010 r | 8,660 |
| Consumption, apparent[6] | do. | 7,120 r | 7,210 r | 7,270 r | 6,710 r | 6,410 |
| World, production | do. | 28,000 | 29,900 | 31,900 | 33,900 r | 37,900 |

r Revised. do. Ditto.
[1] Data are rounded to no more than three significant digits except "Primary production."
[2] Data from the Aluminum Association Inc.; includes ingot, semifabricated material, and scrap. Beginning in 2003, data series revised to include inventory levels for both United States and Canadian producers.
[3] Includes aluminum alloyed material.
[4] Metallic recovery from purchased, tolled, or imported new and old scrap expanded for full industry coverage.
[5] Defined as domestic primary metal production plus secondary recovery plus imports (excluding scrap) minus exports plus adjustments for Government and industry stock changes.
[6] Apparent supply less recovery from purchased new scrap.

TABLE 2
PRIMARY ANNUAL ALUMINUM PRODUCTION CAPACITY IN THE UNITED STATES, BY COMPANY[1]

| Company and location | Yearend capacity (thousand metric tons) 2006 | 2007 | Ownership in 2007 |
|---|---|---|---|
| Alcoa Inc.: | | | |
| Alcoa, TN | 215 | 215 | Alcoa Inc., 100%. |
| Badin, NC | 120 | 120 | Do. |
| Evansville, IN (Warrick) | 309 | 309 | Do. |
| Ferndale, WA (Intalco) | 278 | 278 | Do. |
| Frederick, MD (Eastalco) | 195 | 195 | Do. |
| Massena, NY (St. Lawrence) | 125 | 125 | Do. |
| Massena, NY | 130 | 130 | Do. |
| Mount Holly, SC | 224 | 224 | Alcoa Inc., 50.3%; Century Aluminum Co., 49.7%. |
| Rockdale, TX | 267 | 267 | Alcoa Inc., 100%. |
| Wenatchee, WA | 184 | 184 | Do. |
| Total | 2,050 | 2,050 | |
| Century Aluminum Co.: | | | |
| Hawesville, KY | 244 | 244 | Century Aluminum Co., 100%. |
| Ravenswood, WV | 170 | 170 | Do. |
| Total | 414 | 414 | |
| Columbia Falls Aluminum Co., Columbia Falls, MT | 168 | 168 | Glencore International AG, 100%. |
| Goldendale Aluminum Co., Goldendale, WA | 160 | 160 | Private interest, 60%; employees, 40%. |
| Noranda Aluminum Inc., New Madrid, MO | 250 | 250 | Apollo Management LP, 100%. |
| Northwest Aluminum Corp., The Dalles, OR | 82 | -- | Private interest, 100%. |
| Ormet Primary Aluminum Corp., Hannibal, OH | 265 | 265 | Ormet Corp., 100%. |
| Rio Tinto Alcan Inc., Sebree, KY | 196 | 196 | Rio Tinto Alcan Inc., 100%. |
| Vanalco Inc., Vancouver, WA | 116 | 116 | Glencore International AG, 100%. |
| Grand total | 3,700 | 3,620 | |

Do. Ditto. -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 3
U.S. CONSUMPTION OF AND RECOVERY FROM PURCHASED NEW AND OLD ALUMINUM SCRAP, BY CLASS[1, 2]

(Metric tons)

| Class | Consumption | Calculated recovery Aluminum | Metallic |
|---|---|---|---|
| 2006: | | | |
| Secondary smelters[r] | 2,080,000 | 1,410,000 | 1,500,000 |
| Independent mill fabricators[r, 3] | 1,880,000 | 1,620,000 | 1,730,000 |
| Foundries | 78,700 | 64,600 | 69,100 |
| Other consumers | 8,700 | 7,700 | 7,730 |
| Total[r] | 4,050,000 | 3,100,000 | 3,310,000 |
| Estimated full industry coverage[r] | 4,360,000 | 3,330,000 | 3,560,000 |
| 2007: | | | |
| Secondary smelters | 1,840,000 | 1,270,000 | 1,360,000 |
| Independent mill fabricators[3] | 2,400,000 | 2,020,000 | 2,150,000 |
| Foundries | 79,000 | 64,900 | 69,400 |
| Other consumers | 7,950 | 6,890 | 6,920 |
| Total | 4,330,000 | 3,370,000 | 3,580,000 |
| Estimated full industry coverage | 4,660,000 | 3,620,000 | 3,850,000 |

[r]Revised.
[1]Excludes recovery from other than aluminum-base scrap.
[2]Data are rounded to no more than three significant digits; may not add to totals shown.
[3]Includes plants previously categorized as "Integrated aluminum companies."

TABLE 4
U.S. STOCKS, RECEIPTS, AND CONSUMPTION OF PURCHASED NEW AND OLD ALUMINUM SCRAP AND SWEATED PIG IN 2007[1, 2]

(Metric tons)

| Class of consumer and type of scrap | Stocks, January 1 | Net receipts[3] | Consumption | Stocks, December 31 |
|---|---|---|---|---|
| Secondary smelters: | | | | |
| New scrap: | | | | |
| Extrusions | 18,400 r | 389,000 | 389,000 | 18,300 |
| Can stock clippings | 1,640 r | 96,700 | 96,000 | 2,340 |
| Other wrought sheet and clippings | 1,150 r | 139,000 | 139,000 | 977 |
| Castings | 2,490 r | 73,500 | 74,700 | 1,290 |
| Borings and turnings | 2,970 r | 150,000 | 151,000 | 2,060 |
| Dross and skimmings | 774 r | 495,000 | 494,000 | 1,290 |
| Other | -- | 7,380 | 7,380 | -- |
| Total | 27,400 r | 1,350,000 | 1,350,000 | 26,300 |
| Old scrap: | | | | |
| Castings | 3,440 r | 85,900 | 86,500 | 2,800 |
| Extrusions | 1,650 r | 53,100 | 53,100 | 1,690 |
| Aluminum cans[4] | 23 r | 43,300 | 43,300 | 14 |
| Other wrought products | 1,870 r | 78,800 | 78,700 | 2,010 |
| Auto shredder scrap | 7,830 r | 225,000 | 225,000 | 7,530 |
| Other | -- | 1,700 | 1,700 | -- |
| Total | 14,800 r | 487,000 | 488,000 | 14,000 |
| Sweated pig | 82 | 2,970 | 2,960 | 96 |
| Grand total secondary smelters | 42,300 r | 1,840,000 | 1,840,000 | 40,400 |
| Integrated aluminum companies, foundries, independent mill fabricators, other consumers: | | | | |
| New scrap: | | | | |
| Extrusions | 13,800 r | 638,000 | 645,000 | 6,740 |
| Can stock clippings | 1,520 r | 237,000 | 236,000 | 2,920 |
| Other wrought sheet and clippings | 3,070 r | 206,000 | 205,000 | 3,690 |
| Castings | 413 r | 43,400 | 42,800 | 965 |
| Borings and turnings | 3,240 r | 34,400 | 36,400 | 1,200 |
| Dross and skimmings | 3,100 r | 81,600 | 81,200 | 3,570 |
| Total | 25,100 r | 1,240,000 | 1,250,000 | 19,100 |
| Old scrap: | | | | |
| Castings | 4,190 r | 58,800 | 59,200 | 3,750 |
| Extrusions | 1,660 r | 34,100 | 34,300 | 1,520 |
| Aluminum cans[4] | 7,290 r | 649,000 | 653,000 | 3,860 |
| Other wrought products | 7,560 r | 291,000 | 293,000 | 6,100 |
| Auto shredder scrap | 2,540 r | 24,400 | 24,600 | 2,280 |
| Other | -- | 176,000 | 176,000 | -- |
| Total | 23,200 r | 1,230,000 | 1,240,000 | 17,500 |
| Sweated pig | -- | -- | -- | -- |
| Grand total integrated aluminum companies, etc. | 48,300 r | 2,470,000 | 2,490,000 | 36,600 |
| All scrap consumed: | | | | |
| New scrap: | | | | |
| Extrusions | 32,100 r | 1,030,000 | 1,030,000 | 25,000 |
| Can stock clippings | 3,160 r | 334,000 | 331,000 | 5,260 |
| Other wrought sheet and clippings | 4,230 r | 345,000 | 344,000 | 4,670 |
| Castings | 2,900 r | 117,000 | 117,000 | 2,250 |
| Borings and turnings | 6,210 r | 185,000 | 188,000 | 3,260 |
| Dross and skimmings | 3,870 r | 576,000 | 575,000 | 4,850 |
| Other | -- | 7,380 | 7,380 | -- |
| Total | 52,500 r | 2,590,000 | 2,600,000 | 45,300 |

See footnotes at end of table.

TABLE 4—Continued
U.S. STOCKS, RECEIPTS, AND CONSUMPTION OF PURCHASED NEW AND OLD ALUMINUM SCRAP AND SWEATED PIG IN 2007[1, 2]

(Metric tons)

| Class of consumer and type of scrap | Stocks, January 1 | Net receipts[3] | Consumption | Stocks, December 31 |
|---|---|---|---|---|
| All scrap consumed—Continued: | | | | |
| Old scrap: | | | | |
| Castings | 7,630 r | 145,000 | 146,000 | 6,550 |
| Extrusion | 3,320 r | 87,200 | 87,300 | 3,210 |
| Aluminum cans | 7,310 r | 693,000 | 696,000 | 3,880 |
| Other wrought products | 9,430 r | 370,000 | 371,000 | 8,110 |
| Auto shredder scrap | 10,400 r | 249,000 | 250,000 | 9,810 |
| Other | -- | 178,000 | 178,000 | -- |
| Total | 38,000 r | 1,720,000 | 1,730,000 | 31,600 |
| Sweated pig | 82 | 2,970 | 2,960 | 96 |
| Grand total of all scrap consumed | 90,600 r | 4,310,000 | 4,330,000 | 77,000 |

rRevised. -- Zero.

[1]Includes imported scrap. According to reporting companies, 5.77% of total receipts of aluminum-base scrap, or 250,000 metric tons, was received on toll arrangements.

[2]Data are rounded to no more than three significant digits; may not add to totals shown.

[3]Includes inventory adjustment.

[4]Used beverage cans toll treated for primary producers are included in secondary smelter tabulation.

TABLE 5
PRODUCTION AND SHIPMENTS OF SECONDARY ALUMINUM ALLOYS BY INDEPENDENT SMELTERS IN THE UNITED STATES[1]

(Metric tons)

| | 2006 | | 2007 | |
|---|---|---|---|---|
| | Production | Net shipments[2] | Production | Net shipments[2] |
| Diecast alloys: | | | | |
| 13% Si, 360, etc. (0.6% Cu, maximum) | 26,000 r | 27,300 r | 26,000 | 26,400 |
| 380 and variations | 357,000 r | 358,000 r | 313,000 | 313,000 |
| Sand and permanent mold: | | | | |
| 95/5 Al-Si, 356, etc. (0.6% Cu, maximum) | 33,800 r | 33,900 r | 32,900 | 33,100 |
| No. 12 and variations | 3,870 r | 3,950 r | 2,270 | 2,270 |
| No. 319 and variations | 90,500 r | 90,000 r | 74,900 | 75,700 |
| F-132 alloy and variations | 21,500 r | 21,800 r | 20,000 | 20,200 |
| Al-Mg alloys | 6,850 r | 6,720 r | 9,940 | 9,700 |
| Al-Zn alloys | 2,710 | 2,740 r | 1,720 | 1,770 |
| Al-Si alloys (0.6% to 2.0% Cu) | 19,700 r | 19,600 r | 20,000 | 20,000 |
| Al-Cu alloys (1.5% Si, maximum) | 3,810 r | 4,020 r | 399 | 456 |
| Al-Si-Cu-Ni alloys | 3,660 r | 3,070 r | 9,680 | 9,940 |
| Other | 442 | 414 r | 401 | 401 |
| Wrought alloys, extrusion billets | 730,000 r | 728,000 r | 703,000 | 702,000 |
| Miscellaneous: | | | | |
| Steel deoxidation | 51,200 r | 51,100 r | 42,900 | 42,900 |
| Pure (97.0% Al) | W | W | W | W |
| Aluminum-base hardeners | W | W | W | W |
| Other[3] | 58,200 r | 56,800 r | 60,000 | 59,300 |
| Total | 1,410,000 r | 1,410,000 r | 1,320,000 | 1,320,000 |
| Less consumption of materials other than scrap: | | | | |
| Primary aluminum | 321,000 r | XX | 307,000 | XX |
| Primary silicon | 39,600 r | XX | 34,300 | XX |
| Other | 16,800 r | XX | 15,100 | XX |
| Net metallic recovery from aluminum scrap and sweated pig consumed in production of secondary aluminum ingot[4] | 1,030,000 r | XX | 961,000 | XX |

rRevised. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous, other." XX Not applicable.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes inventory adjustment.

[3]Includes other diecast alloys.

[4]No allowance made for melt loss of primary aluminum and alloying ingredients.

TABLE 6
DISTRIBUTION OF END-USE SHIPMENTS OF ALUMINUM PRODUCTS
IN THE UNITED STATES AND CANADA, BY INDUSTRY[1]

| Industry | 2006 Quantity (thousand metric tons) | 2006 Percentage of grand total | 2007[p] Quantity (thousand metric tons) | 2007[p] Percentage of grand total |
|---|---|---|---|---|
| Containers and packaging | 2,320 [r] | 19.7 [r] | 2,220 | 19.9 |
| Building and construction | 1,650 [r] | 14.0 [r] | 1,410 | 12.6 |
| Transportation | 3,930 [r] | 33.4 | 3,580 | 32.0 |
| Electrical | 774 [r] | 6.6 [r] | 745 | 6.7 |
| Consumer durables | 746 | 6.3 | 669 | 6.0 |
| Machinery and equipment | 762 [r] | 6.5 [r] | 736 | 6.6 |
| Other markets | 330 | 2.8 | 359 | 3.2 |
| Total | 10,500 [r] | 89.3 [r] | 9,710 | 87.0 |
| Exports[e] | 1,270 [r] | 10.8 [r] | 1,450 | 13.0 |
| Grand total | 11,800 [r] | 100.0 | 11,200 | 100.0 |

[e]Estimated. [p]Preliminary. [r]Revised.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.

Source: The Aluminum Association Inc.

TABLE 7
U.S. NET SHIPMENTS OF ALUMINUM WROUGHT AND CAST PRODUCTS,
BY PRODUCERS[1, 2, 3]

(Thousand metric tons)

| | 2005 | 2006 | 2007[p] |
|---|---|---|---|
| Wrought products: | | | |
| Sheet, plate, foil | 5,330 [r] | 5,330 [r] | 5,040 |
| Pipe, tube, extruded shapes | 2,090 [r] | 2,070 [r] | 1,790 |
| Rod, bar, wire, cable | 896 [r] | 959 [r] | 890 |
| Forgings (including impacts) | 129 | 134 | 126 |
| Powder, flake, paste | 55 | 48 [r] | 50 |
| Total | 10,500 [r] | 10,500 [r] | 9,910 |
| Castings: | | | |
| Sand | 289 | 335 | 315 |
| Permanent and semipermanent mold | 785 | 754 | 615 |
| Die | 1,110 | 1,170 | 1,260 |
| Other | 108 | 53 | 35 |
| Total | 2,290 | 2,310 | 2,230 |
| Grand total | 12,800 [r] | 12,900 [r] | 12,100 |

[p]Preliminary. [r]Revised.
[1]Net shipments derived by subtracting the sum of producers' domestic receipts of each mill shape from the domestic industry's gross shipments of that shape.
[2]Data are rounded to no more than three significant digits; may not add to totals shown.
[3]Wrought products data series includes net shipments in both the United States and Canada.

Source: The Aluminum Association Inc.

TABLE 8
U.S. EXPORTS OF ALUMINUM, BY COUNTRY[1]

| Country | Metals and alloys, crude | | Plates, sheets, bars, etc.[2] | | Scrap | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) |
| 2006: | | | | | | | | |
| Azerbaijan | -- | -- | (3) | $9 | -- | -- | (3) | $9 |
| Brazil | 129 | $667 | 7,720 | 42,900 | 682 | $1,500 | 8,530 | 45,000 |
| Canada | 119,000 | 310,000 | 475,000 | 1,760,000 | 146,000 | 252,000 | 740,000 | 2,320,000 |
| China | 2,510 | 10,000 | 38,600 | 190,000 | 895,000 | 1,480,000 | 936,000 | 1,680,000 |
| France | 83 | 210 | 13,800 | 91,400 | 22 | 199 | 13,900 | 91,800 |
| Germany | 558 | 2,970 | 10,100 | 62,600 | 268 | 978 | 10,900 | 66,500 |
| Hong Kong | 1,100 | 3,930 | 11,500 | 60,200 | 26,100 | 66,800 | 38,700 | 131,000 |
| Italy | 809 | 2,950 | 4,710 | 35,900 | 728 | 2,640 | 6,250 | 41,500 |
| Japan | 10,000 | 34,600 | 19,300 | 174,000 | 43,500 | 88,600 | 72,800 | 297,000 |
| Kazakhstan | -- | -- | 3 | 169 | -- | -- | 3 | 169 |
| Korea, Republic of | 747 | 2,930 | 14,200 | 80,800 | 153,000 | 258,000 | 168,000 | 342,000 |
| Mexico | 194,000 | 477,000 | 261,000 | 940,000 | 98,800 | 197,000 | 554,000 | 1,610,000 |
| Netherlands | 141 | 1,120 | 765 | 8,280 | 312 | 766 | 1,220 | 10,200 |
| Philippines | 3 | 25 | 239 | 4,170 | 233 | 197 | 475 | 4,390 |
| Russia | 1,140 | 4,040 | 207 | 1,370 | 24 | 149 | 1,370 | 5,550 |
| Saudi Arabia | 29 | 110 | 31,600 | 102,000 | (3) | 8 | 31,600 | 102,000 |
| Singapore | 167 | 765 | 1,990 | 18,000 | 241 | 1,330 | 2,400 | 20,100 |
| South Africa | 26 | 141 | 544 | 5,770 | -- | -- | 570 | 5,910 |
| Taiwan | 349 | 876 | 9,160 | 45,800 | 55,700 | 102,000 | 65,200 | 148,000 |
| Thailand | 1,450 | 4,910 | 7,150 | 27,200 | 13,400 | 23,800 | 22,000 | 55,900 |
| Ukraine | 6 | 37 | 18 | 157 | -- | -- | 24 | 193 |
| United Kingdom | 455 | 2,390 | 18,300 | 125,000 | 644 | 1,270 | 19,400 | 129,000 |
| Venezuela | 24 | 31 | 2,550 | 12,700 | 1 | 14 | 2,570 | 12,700 |
| Other | 13,900 | 46,700 | 62,000 | 317,000 | 46,600 | 64,200 | 123,000 | 428,000 |
| Total | 346,000 | 906,000 | 990,000 | 4,100,000 | 1,480,000 | 2,540,000 | 2,820,000 | 7,550,000 |
| 2007: | | | | | | | | |
| Azerbaijan | -- | -- | 9 | 241 | -- | -- | 9 | 241 |
| Brazil | 1,930 | 4,270 | 12,200 | 70,800 | 4,690 | 19,100 | 18,800 | 94,100 |
| Canada | 116,000 | 315,000 | 422,000 | 1,660,000 | 158,000 | 327,000 | 696,000 | 2,310,000 |
| China | 1,310 | 3,660 | 23,900 | 157,000 | 803,000 | 1,590,000 | 828,000 | 1,750,000 |
| France | 869 | 3,590 | 10,800 | 85,600 | 203 | 563 | 11,800 | 89,800 |
| Germany | 2,810 | 10,900 | 9,820 | 73,300 | 1,200 | 3,060 | 13,800 | 87,200 |
| Hong Kong | 668 | 1,560 | 20,400 | 101,000 | 39,900 | 92,500 | 61,000 | 195,000 |
| Italy | 5,800 | 5,890 | 3,850 | 39,400 | 3,570 | 18,500 | 13,200 | 63,800 |
| Japan | 15,000 | 37,600 | 19,100 | 191,000 | 45,900 | 111,000 | 80,000 | 340,000 |
| Kazakhstan | -- | -- | 7 | 324 | -- | -- | 7 | 324 |
| Korea, Republic of | 565 | 2,470 | 18,400 | 111,000 | 198,000 | 384,000 | 217,000 | 497,000 |
| Mexico | 190,000 | 516,000 | 247,000 | 988,000 | 82,400 | 166,000 | 519,000 | 1,670,000 |
| Netherlands | 1,680 | 5,650 | 1,730 | 12,700 | 1,390 | 2,750 | 4,800 | 21,100 |
| Philippines | 5 | 26 | 310 | 4,170 | 105 | 208 | 420 | 4,400 |
| Russia | 516 | 2,350 | 1,790 | 6,720 | 139 | 254 | 2,450 | 9,330 |
| Saudi Arabia | 18 | 136 | 29,900 | 108,000 | -- | -- | 29,900 | 108,000 |
| Singapore | 352 | 1,260 | 2,760 | 22,900 | 329 | 592 | 3,440 | 24,800 |
| South Africa | 82 | 513 | 407 | 4,780 | -- | -- | 489 | 5,300 |
| Taiwan | 356 | 1,630 | 6,310 | 33,600 | 134,000 | 212,000 | 141,000 | 247,000 |
| Thailand | 526 | 514 | 12,200 | 47,700 | 24,800 | 38,900 | 37,600 | 87,100 |
| Ukraine | 573 | 4,830 | 322 | 1,310 | -- | -- | 895 | 6,140 |
| United Kingdom | 234 | 2,240 | 21,000 | 147,000 | 1,820 | 4,100 | 23,000 | 153,000 |
| Venezuela | 113 | 350 | 3,050 | 14,400 | 80 | 127 | 3,250 | 14,900 |
| Other | 9,460 | 32,700 | 79,900 | 395,000 | 45,800 | 76,700 | 135,000 | 504,000 |
| Total | 349,000 | 953,000 | 947,000 | 4,280,000 | 1,550,000 | 3,050,000 | 2,840,000 | 8,280,000 |

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes castings, forgings, and unclassified semifabricated forms.

[3]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 9
U.S. EXPORTS OF ALUMINUM, BY CLASS[1]

| Class | 2006 Quantity (metric tons) | 2006 Value (thousands) | 2007 Quantity (metric tons) | 2007 Value (thousands) |
|---|---|---|---|---|
| Crude and semicrude: | | | | |
| Metals and alloys, crude | 346,000 | $906,000 | 349,000 | $953,000 |
| Scrap | 1,480,000 | 2,550,000 | 1,550,000 | 3,050,000 |
| Plates, sheets, bars, strip, etc. | 923,000 | 3,580,000 | 887,000 | 3,730,000 |
| Castings and forgings | 24,200 | 237,000 | 21,100 | 263,000 |
| Semifabricated forms, n.e.c. | 42,600 | 287,000 | 39,200 | 287,000 |
| Total | 2,820,000 | 7,550,000 | 2,840,000 | 8,280,000 |
| Manufactures: | | | | |
| Foil and leaf | 95,100 | 401,000 | 88,700 | 408,000 |
| Powders and flakes | 7,410 | 41,300 | 6,600 | 36,600 |
| Wire and cable | 40,500 | 148,000 | 45,700 | 179,000 |
| Total | 143,000 | 591,000 | 141,000 | 624,000 |
| Grand total | 2,960,000 | 8,140,000 | 2,980,000 | 8,910,000 |

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 10
U.S. IMPORTS FOR CONSUMPTION OF ALUMINUM, BY CLASS[1]

| Class | 2006 Quantity (metric tons) | 2006 Value (thousands) | 2007 Quantity (metric tons) | 2007 Value (thousands) |
|---|---|---|---|---|
| Crude and semicrude: | | | | |
| Metals and alloys, crude | 3,440,000 | $9,040,000 | 2,950,000 | $8,290,000 |
| Plates, sheets, strip, etc., n.e.c.[2] | 914,000 | 3,230,000 | 801,000 | 3,070,000 |
| Pipes, tubes, etc. | 34,000 | 216,000 | 34,300 | 254,000 |
| Rods and bars | 269,000 | 1,050,000 | 235,000 | 985,000 |
| Scrap | 527,000 | 930,000 | 471,000 | 803,000 |
| Total | 5,180,000 | 14,500,000 | 4,490,000 | 13,400,000 |
| Manufactures: | | | | |
| Foil and leaf[3] | 141,000 | 600,000 | 127,000 | 586,000 |
| Powders and flakes | 6,320 | 31,200 | 9,480 | 42,600 |
| Wire | 197,000 | 571,000 | 194,000 | 598,000 |
| Total | 344,000 | 1,200,000 | 330,000 | 1,230,000 |
| Grand total | 5,530,000 | 15,700,000 | 4,820,000 | 14,600,000 |

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes circles, disks, plates, and sheets.
[3]Excludes etched capacitor foil.

Source: U.S. Census Bureau.

TABLE 11
U.S. IMPORTS FOR CONSUMPTION OF ALUMINUM, BY COUNTRY[1]

| Country | Metals and alloys, crude | | Plates, sheets, bars, etc.[2] | | Scrap | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) |
| 2006: | | | | | | | | |
| Argentina | 59,400 | $155,000 | 129 | $1,480 | -- | -- | 59,500 | $156,000 |
| Australia | 58,200 | 152,000 | 186 | 1,130 | 2,760 | $6,560 | 61,100 | 160,000 |
| Bahrain | 76,000 | 208,000 | 15,100 | 46,400 | -- | -- | 91,100 | 254,000 |
| Belgium | 216 | 727 | 7,860 | 36,400 | 122 | 242 | 8,200 | 37,400 |
| Brazil | 128,000 | 332,000 | 33,400 | 109,000 | 639 | 1,220 | 162,000 | 442,000 |
| Canada | 1,960,000 | 5,270,000 | 517,000 | 1,860,000 | 349,000 | 596,000 | 2,830,000 | 7,720,000 |
| China | 62,600 | 157,000 | 162,000 | 545,000 | 5 | 27 | 225,000 | 703,000 |
| France | 711 | 8,450 | 4,840 | 30,700 | 76 | 330 | 5,630 | 39,500 |
| Germany | 5,320 | 15,300 | 126,000 | 519,000 | 429 | 931 | 132,000 | 536,000 |
| Italy | 203 | 972 | 3,530 | 20,400 | (3) | 7 | 3,730 | 21,400 |
| Japan | 624 | 2,450 | 15,400 | 83,100 | 797 | 2,780 | 16,800 | 88,300 |
| Korea, Republic of | 872 | 2,780 | 2,880 | 12,500 | 195 | 383 | 3,950 | 15,700 |
| Mexico | 3,940 | 14,200 | 21,100 | 90,100 | 115,000 | 217,000 | 140,000 | 321,000 |
| Netherlands | 721 | 2,590 | 2,240 | 14,000 | 112 | 173 | 3,070 | 16,800 |
| Norway | 312 | 985 | 295 | 1,230 | -- | -- | 607 | 2,220 |
| Panama | 93 | 194 | 298 | 1,100 | 3,130 | 6,430 | 3,520 | 7,720 |
| Russia | 660,000 | 1,670,000 | 51,500 | 192,000 | 8,360 | 19,000 | 720,000 | 1,880,000 |
| Slovenia | -- | -- | 4,170 | 16,000 | -- | -- | 4,170 | 16,000 |
| South Africa | 80,000 | 201,000 | 54,300 | 169,000 | -- | -- | 134,000 | 370,000 |
| Spain | 147 | 581 | 1,300 | 5,310 | -- | -- | 1,450 | 5,890 |
| Tajikstan | 25,700 | 60,300 | -- | -- | -- | -- | 25,700 | 60,300 |
| United Arab Emirates | 99,600 | 266,000 | 54 | 165 | 1,670 | 3,290 | 101,000 | 270,000 |
| United Kingdom | 32,600 | 81,400 | 6,220 | 45,500 | 1,750 | 2,930 | 40,500 | 130,000 |
| Venezuela | 133,000 | 314,000 | 17,200 | 49,700 | 2,850 | 6,170 | 153,000 | 370,000 |
| Other | 48,400 | 128,000 | 170,000 | 643,000 | 40,100 | 67,200 | 258,000 | 838,000 |
| Total | 3,440,000 | 9,040,000 | 1,220,000 | 4,490,000 | 527,000 | 931,000 | 5,180,000 | 14,500,000 |
| 2007: | | | | | | | | |
| Argentina | 55,300 | 158,000 | 56 | 638 | -- | -- | 55,400 | 159,000 |
| Australia | 55,700 | 159,000 | 98 | 903 | 2,730 | 7,380 | 58,500 | 167,000 |
| Bahrain | 36,100 | 106,000 | 18,100 | 62,800 | -- | -- | 54,200 | 169,000 |
| Belgium | 94 | 370 | 11,700 | 63,700 | 14 | 25 | 11,800 | 64,100 |
| Brazil | 80,100 | 225,000 | 26,500 | 89,900 | 1 | 4 | 107,000 | 314,000 |
| Canada | 1,930,000 | 5,390,000 | 443,000 | 1,650,000 | 320,000 | 541,000 | 2,690,000 | 7,580,000 |
| China | 37,700 | 107,000 | 166,000 | 605,000 | 58 | 205 | 204,000 | 712,000 |
| France | 435 | 7,470 | 3,580 | 28,800 | 44 | 96 | 4,060 | 36,300 |
| Germany | 2,620 | 8,060 | 98,700 | 485,000 | 465 | 727 | 102,000 | 493,000 |
| Italy | 513 | 2,360 | 7,250 | 44,700 | 77 | 119 | 7,840 | 47,200 |
| Japan | 239 | 894 | 14,400 | 79,800 | 703 | 3,800 | 15,300 | 84,500 |
| Korea, Republic of | 2,510 | 7,910 | 2,940 | 14,200 | 69 | 182 | 5,510 | 22,300 |
| Mexico | 22,100 | 105,000 | 19,600 | 95,300 | 105,000 | 174,000 | 146,000 | 375,000 |
| Netherlands | 841 | 3,140 | 2,930 | 18,300 | 143 | 306 | 3,920 | 21,700 |
| Norway | 4,940 | 16,600 | 140 | 725 | -- | -- | 5,080 | 17,300 |
| Panama | 20 | 38 | 10 | 42 | 3,450 | 6,850 | 3,480 | 6,930 |
| Russia | 434,000 | 1,200,000 | 55,900 | 241,000 | 1,660 | 3,900 | 492,000 | 1,440,000 |
| Slovenia | -- | -- | 3,940 | 18,700 | -- | -- | 3,940 | 18,700 |
| South Africa | 62,500 | 164,000 | 47,800 | 176,000 | -- | -- | 110,000 | 339,000 |
| Spain | 107 | 466 | 502 | 3,300 | 19 | 39 | 628 | 3,810 |
| Tajikstan | -- | -- | -- | -- | -- | -- | -- | -- |
| United Arab Emirates | 108,000 | 317,000 | -- | -- | 18 | 90 | 108,000 | 317,000 |
| United Kingdom | 3,990 | 11,300 | 5,870 | 43,700 | 1,110 | 1,970 | 11,000 | 57,000 |
| Venezuela | 63,800 | 162,000 | 8,770 | 26,500 | 486 | 1,270 | 73,000 | 189,000 |
| Other | 48,600 | 140,000 | 132,000 | 569,000 | 34,800 | 60,700 | 215,000 | 770,000 |
| Total | 2,950,000 | 8,290,000 | 1,070,000 | 4,320,000 | 471,000 | 803,000 | 4,490,000 | 13,400,000 |

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes circles, disks, pipes, rods, tubes, etc.

[3]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 12
ALUMINUM, PRIMARY: WORLD PRODUCTION, BY COUNTRY[1, 2]

(Thousand metric tons)

| Country | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Argentina | 272 | 272 | 271 r | 273 r | 273 e |
| Australia | 1,857 | 1,894 | 1,903 | 1,932 | 1,960 |
| Azerbaijan | 19 | 30 | 32 r | 32 r | 39 |
| Bahrain | 532 | 532 | 751 | 872 | 873 e |
| Bosnia and Herzegovina[3] | 113 | 121 | 131 | 136 r | 144 |
| Brazil | 1,381 | 1,457 | 1,499 | 1,604 r | 1,610 p |
| Cameroon | 77 | 86 | 90 | 87 e | 89 |
| Canada | 2,792 | 2,592 | 2,894 | 3,051 | 3,083 p |
| China[e] | 5,450 | 6,670 | 7,800 | 9,360 r | 12,600 |
| Egypt | 195 | 216 | 244 | 252 | 258 |
| France | 443 | 451 | 442 | 442 r | 428 |
| Germany | 661 | 668 | 648 | 516 r | 551 e |
| Ghana | 16 | -- e | 13 | 36 e | 40 e |
| Greece | 165 | 167 | 165 | 163 | 166 |
| Hungary[e] | 34 r, 4 | 34 r | 31 r | 34 r | -- |
| Iceland[5] | 286 | 271 | 272 | 320 | 398 |
| India[6] | 799 | 862 | 942 | 1,104 | 1,223 |
| Indonesia[6] | 200 e | 247 e | 252 | 250 | 242 |
| Iran | 182 | 213 | 220 e | 205 r, e | 204 e |
| Italy | 191 | 195 | 193 r | 194 | 183 |
| Japan[7] | 6 | 6 | 7 | 7 | 6 e |
| Montenegro | 117 8 | 115 8 | 117 8 | 122 | 120 e |
| Mozambique | 409 | 549 | 555 | 564 | 564 e |
| Netherlands | 283 | 326 | 325 | 312 r | 301 |
| New Zealand | 340 | 350 | 351 | 337 | 340 e |
| Norway | 1,192 | 1,322 | 1,372 | 1,331 | 1,304 |
| Poland[9] | 45 | 46 | 55 r | 58 r | 51 |
| Romania[10] | 197 | 222 r | 244 | 258 | 286 |
| Russia | 3,478 | 3,592 | 3,647 | 3,718 | 3,955 |
| Serbia and Montenegro[3] | -- r | -- r | -- r | -- r | -- |
| Slovakia[6] | 165 r | 175 r | 158 | 180 r | 161 |
| Slovenia[3] | 110 | 121 | 139 | 140 | 125 |
| South Africa | 738 | 866 | 846 | 895 | 899 |
| Spain | 389 | 398 | 394 r | 394 r | 350 p |
| Sweden | 101 | 101 | 102 | 101 | 98 |
| Switzerland | 44 | 45 | 45 | 12 r | -- 4 |
| Tajikistan | 319 | 358 | 380 | 414 | 419 |
| Turkey[e] | 63 | 60 | 60 | 60 | 60 e |
| Ukraine[10] | 114 | 113 | 114 | 113 | 113 |
| United Arab Emirates | 560 | 683 | 722 e | 789 r | 890 |
| United Kingdom | 343 | 360 | 369 | 360 r | 365 |
| United States | 2,703 | 2,516 | 2,481 | 2,284 | 2,554 p |
| Venezuela | 601 | 624 | 615 | 610 e | 610 e |
| Total | 28,000 | 29,900 | 31,900 | 33,900 r | 37,900 |

[e]Estimated. [p]Preliminary. [r]Revised. -- Zero.

[1]World totals and estimated data are rounded to no more than three significant digits; may not add to totals shown.

[2]Primary aluminum is defined as "The weight of liquid aluminum as tapped from pots, excluding the weight of any alloying materials as well that of any metal produced from either returned scrap or remelted materials." International reporting practices vary from country to country, some nations conforming to the foregoing definition and others using different definitions. For those countries for which a different definition is given specifically in the source publication, that definition is provided in this table by footnote. Table includes data available through May 5, 2008.

[3]Primary ingot plus secondary ingot.

[4]Reported figure.

[5]Ingot and rolling billet production.

[6]Primary ingot.

TABLE 12—Continued
ALUMINUM, PRIMARY: WORLD PRODUCTION, BY COUNTRY[1, 2]

[7]Excludes high purity aluminum containing 99.995% or more as follows, in metric tons: 2003—43,697; 2004—55,402; 2005—45,413; 2006—49,667; and 2007—55,000 (estimated).

[8]In June 2006, Montenegro and Serbia formally declared independence from each other and dissolved their union.

[9]Primary unalloyed ingot plus secondary unalloyed ingot.

[10]Primary unalloyed metal plus primary alloyed metal, thus including weight of alloying material.