

ALUMINUM¹

(Data in thousand metric tons of metal unless otherwise noted)

Domestic Production and Use: In 2012, 5 companies operated 10 primary aluminum smelters; 4 smelters were closed temporarily for the entire year. Based on published market prices, the value of primary metal production was \$4.32 billion. Aluminum consumption was centered in the East Central United States. Transportation accounted for an estimated 34% of domestic consumption; the remainder was used in packaging, 26%; building, 12%; electrical, 9%; machinery, 8%; consumer durables, 7%; and other, 4%.

Salient Statistics—United States:	2008	2009	2010	2011	2012^e
Production:					
Primary	2,658	1,727	1,726	1,986	2,000
Secondary (from old scrap)	1,500	1,260	1,250	1,450	1,600
Imports for consumption	3,710	3,680	3,610	3,710	4,500
Exports	3,280	2,710	3,040	3,420	3,600
Consumption, apparent ²	3,940	3,320	3,460	3,550	4,520
Price, ingot, average U.S. market (spot), cents per pound	120.5	79.4	104.4	116.1	98.0
Stocks:					
Aluminum industry, yearend	1,220	937	1,010	1,060	1,100
LME, U.S. warehouses, yearend ³	1,290	2,200	2,230	2,360	2,300
Employment, number ⁴	38,000	33,800	29,200	30,300	35,000
Net import reliance ⁵ as a percentage of apparent consumption	E	10	14	3	20

Recycling: In 2012, aluminum recovered from purchased scrap in the United States was about 3.4 million tons, of which about 53% came from new (manufacturing) scrap and 47% from old scrap (discarded aluminum products). Aluminum recovered from old scrap was equivalent to about 35% of apparent consumption.

Import Sources (2008–11): Canada, 62%; Russia, 7%; China, 5%; Mexico, 4%; and other, 22%.

Tariff:	Item	Number	Normal Trade Relations 12–31–12
	Unwrought (in coils)	7601.10.3000	2.6% ad val.
	Unwrought (other than aluminum alloys)	7601.10.6000	Free.
	Unwrought (billet)	7601.20.9045	Free.
	Waste and scrap	7602.00.0000	Free.

Depletion Allowance: Not applicable.¹

Government Stockpile: None.

Events, Trends, and Issues: During the first quarter of 2012, the leading U.S. aluminum producer announced that its smelter in Alcoa, TN, which had been closed temporarily in 2009, would be closed permanently. The same company also announced that two potlines at its Rockdale, TX, smelter also would be permanently closed. Failure to obtain favorable power supply contracts was cited as the reason for the permanent closures. Throughout the year, the owners of smelters in Hannibal, OH, Hawesville, KY, and Mt. Holly, SC, were negotiating power supply contracts to reduce costs. If power costs were not reduced, closures of these smelters would likely take place. During the third quarter of 2012, two potlines were closed temporarily at the Hannibal, OH, smelter. The owners of smelters in Columbia Falls, MT, and Ravenswood, WV, were negotiating power supply contracts to reopen those smelters, which had been temporarily shut down in 2009. Work on an expansion project continued at a smelter in New Madrid, MO, that would increase primary aluminum capacity to 279,000 tons per year from 263,000 tons per year by yearend 2012. An expansion of the smelter in Sebree, KY, also was expected to be completed by yearend 2012, increasing the aluminum smelting capacity to 210,000 tons per year from 196,000 tons per year. By the beginning of the fourth quarter of 2012, domestic smelters operated at about 70% of rated or engineered capacity.

Reliance upon imports of aluminum increased in 2012 as primary production remained near the level in 2011, and net imports increased to supply domestic manufacturers. Canada, Russia, and the United Arab Emirates accounted for about 72% of total U.S. imports. Total aluminum exports from the United States increased by 5% in 2012 compared

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with the amount exported in 2011, and imports of crude and semifabricated aluminum in 2012 were 21% higher than the amount imported in 2011. China, Canada, Mexico, and the Republic of Korea, in descending order, received approximately 85% of total United States exports. Scrap to China accounted for 40% of total aluminum exports.

The monthly average U.S. market price for primary ingot quoted by Platts Metals Week started the year at \$1.034 per pound and reached a peak of \$1.079 per pound in March. The monthly average price began a downward trend, reaching \$0.939 per pound in August. The monthly average price increased to \$1.033 per pound in September. Prices on the London Metal Exchange (LME) followed the trend of U.S. market prices.

World primary aluminum production increased slightly in 2012 compared with production in 2011. New capacity in China, India, and Qatar, and restarting smelters that had been shut down in 2008 and early in 2009, accounted for most of the increased production. The increased production from these smelters was partially offset by shutdowns primarily in the second half of the year as aluminum prices declined. Other factors cited for the shutdowns included currency valuations, labor disputes, power price increases, and power shortages, in Australia, Canada, the Netherlands, South Africa, the United Kingdom, the United States, and Venezuela. World inventories of metal held by producers, as reported by the International Aluminium Institute, remained in a narrow range through August at about 2.4 million tons since yearend 2011. Inventories of primary aluminum metal held by the LME worldwide increased slightly during the year to 5.1 million tons in mid-October from 5.0 million tons at yearend 2011.

World Smelter Production and Capacity:

	Production		Yearend capacity	
	2011	2012 ^e	2011	2012 ^e
United States	1,986	2,000	3,160	2,900
Argentina	440	455	455	455
Australia	1,950	1,900	1,980	1,980
Bahrain	881	900	900	970
Brazil	1,440	1,450	1,700	1,700
Canada	2,980	2,700	3,020	3,020
China	18,100	19,000	25,000	25,000
Germany	433	405	620	620
Iceland	800	800	800	800
India	1,670	1,700	2,310	3,150
Mozambique	562	550	570	570
Norway	1,070	1,000	1,230	1,230
Qatar	390	585	585	585
Russia	3,990	4,200	4,450	4,450
South Africa	809	600	900	900
United Arab Emirates	1,800	1,850	1,800	1,850
Other countries	<u>5,100</u>	<u>4,760</u>	<u>6,540</u>	<u>6,250</u>
World total (rounded)	44,400	44,900	56,000	56,400

World Resources: Domestic aluminum requirements cannot be met by domestic bauxite resources. Domestic nonbauxitic aluminum resources are abundant and could meet domestic aluminum demand. A process for recovering alumina from clay was being tested in Canada to prove if it would be economically competitive with the processes now used for recovering alumina from bauxite. Processes for using other aluminum-bearing resources have not been proven to be economically competitive with those now used for bauxite. The world reserves for bauxite are sufficient to meet world demand for metal well into the future.

Substitutes: Composites can substitute for aluminum in aircraft fuselages and wings. Glass, paper, plastics, and steel can substitute for aluminum in packaging. Magnesium, steel, and titanium can substitute for aluminum in ground transportation and structural uses. Composites, steel, vinyl, and wood can substitute for aluminum in construction. Copper can replace aluminum in electrical applications.

^eEstimated. E Net exporter.

¹See also Bauxite and Alumina.

²Domestic primary metal production + recovery from old aluminum scrap + net import reliance; excludes imported scrap.

³Includes aluminum alloy.

⁴Alumina and aluminum production workers (North American Industry Classification System—3313). Source: U.S. Department of Labor, Bureau of Labor Statistics.

⁵Defined as imports – exports + adjustments for Government and industry stock changes.