

ALUMINUM¹

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

Domestic Production and Use: In 2016, three companies operated eight primary aluminum smelters in six States, at the beginning of the year; however, one smelter was permanently shut down and two smelters were temporarily idled later in the year. Three smelters operated at reduced capacity throughout the year. One smelter remained on standby throughout the year. Based on published market prices, the value of primary aluminum production was \$1.48 billion, one-half of the value in 2015. Aluminum consumption was centered in the Midwest United States. Transportation applications accounted for an estimated 41% of domestic consumption; in descending order of consumption, the remainder was used in packaging, 20%; building, 15%; electrical, 8%; machinery, 7%; consumer durables, 6%; and other, 3%.

<u>Salient Statistics—United States:</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016^e</u>
Production:					
Primary	2,070	1,946	1,710	1,587	840
Secondary (from old scrap)	1,630	1,630	1,700	1,470	1,490
Imports for consumption					
Crude and semimanufactures	3,760	4,160	4,290	4,560	5,370
Scrap	589	565	559	521	610
Exports, total	3,480	3,390	3,230	3,010	3,000
Consumption, apparent ²	4,130	4,530	5,070	5,220	4,840
Price, ingot, average U.S. market (spot), cents per pound	101.0	94.2	104.5	88.2	80.0
Stocks, yearend:					
Aluminum industry, stocks	1,140	1,130	1,280	1,350	1,350
London Metal Exchange U.S. warehouses ³	2,120	1,950	1,190	507	370
Employment, number ⁴	31,500	30,100	30,900	31,000	27,000
Net import reliance ⁵ as a percentage of apparent consumption	11	21	33	41	52

Recycling: In 2016, aluminum recovered from purchased scrap in the United States was about 3.54 million tons, of which about 58% came from new (manufacturing) scrap and 42% from old scrap (discarded aluminum products). Aluminum recovered from old scrap was equivalent to about 31% of apparent consumption.

Import Sources (2012–15): Canada, 59%; Russia and United Arab Emirates, 6% each; China, 5%; and other, 24%.

<u>Tariff:</u>	<u>Item</u>	<u>Number</u>	<u>Normal Trade Relations</u>
			<u>12–31–16</u>
Aluminum, not alloyed:			
	Unwrought (in coils)	7601.10.3000	2.6% ad val.
	Unwrought (other than aluminum alloys)	7601.10.6000	Free.
Aluminum alloys:			
	Unwrought (billet)	7601.20.9045	Free.
Aluminum waste and scrap:			
	Used beverage container scrap	7602.00.0030	Free.
	Other	7602.00.0090	Free.

Depletion Allowance: Not applicable.¹

Government Stockpile: None.

Events, Trends, and Issues: U.S. production of primary aluminum decreased for the fourth consecutive year, declining by about 47% in 2016 to the lowest level since 1951. During the year, three primary smelters were shut down. High power prices, low aluminum prices, and technical issues were cited for shutdowns. In January, a 263,000-ton-per-year smelter in New Madrid, MO, shut down two-thirds of its capacity following an electrical supply circuit failure. In February, the owner filed for bankruptcy protection, citing low prices for aluminum and bauxite from its mine in Jamaica, which was sold to a third party. In March, the remaining capacity was shut down and in October, the owner agreed to sell the smelter. In March, a 269,000-ton-per-year smelter in Evansville, IN, was permanently shut down. Also in March, the same company temporarily shut down the 184,000-ton-per-year smelter in Wenatchee, WA. In May, the company signed a power supply agreement that would last through February 2018 for its 279,000-ton-per-year smelter in Ferndale, WA, forestalling a scheduled shutdown. In October, domestic smelters were operating at about 44% of capacity of 1.73 million tons per year, down from 2 million tons per year in October 2015.

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U.S. import reliance increased in 2016 because primary production decreased and U.S. manufacturers were increasingly supplied by imports. U.S. imports of aluminum (crude and semimanufactures) increased by 18% in 2016 compared with those in 2015. Canada was the leading supplier of imported aluminum. Imports of crude aluminum (metal and alloys) and scrap in 2016 were 22% and 13% higher, respectively, than the quantities imported in 2015, but imports of semimanufactures were 5% lower. Imports of semimanufactures from China decreased by 18% in 2016 compared with those in 2015; China accounted for 31% of semimanufactures imported in 2016 compared with 54% in 2015. Total aluminum exports (crude, semimanufactures, and scrap) from the United States decreased by 6% in 2016 compared with those in 2015.

At the request of the U.S. House of Representatives Committee on Ways and Means, the U.S. International Trade Commission (USITC) launched an investigation to examine the global aluminum industry and impact on U.S. producers. The USITC investigation is to examine industry characteristics, factors related to increased capacity, competitive strengths and weaknesses, recent trade trends, and the effect of government policies on production and trade of aluminum. The USITC also is to assess the impact of foreign government policies in select countries on their domestic production, consumption, exports, and prices of aluminum. The USITC held a public hearing concerning this investigation on September 29.

Despite low prices, world primary aluminum production increased slightly in 2016 compared with production in 2015. The U.S. market price for primary ingot quoted by Platts Metals Week averaged \$0.67 per pound in January and gradually increased through August when it averaged \$0.74 per pound. In September, the average price decreased to \$0.72 per pound. U.S. market prices generally followed the trend of prices on the London Metal Exchange (LME). Prices decreased despite a drawdown in global LME warehouse inventories of primary aluminum metal to 2.11 million tons in mid-October 2016 from 2.89 million tons at yearend 2015. Inventories at LME-bonded warehouses in the United States decreased to 287,000 tons in mid-October 2016 from 460,000 tons at yearend 2015.

World Smelter Production and Capacity:

	Production		Yearend capacity	
	2015	2016 ^e	2015	2016 ^e
United States	1,587	840	2,000	1,730
Australia	1,650	1,680	1,720	1,720
Bahrain	961	970	970	970
Brazil	772	790	1,400	1,400
Canada	2,880	3,250	3,270	3,270
China	31,400	31,000	38,600	40,100
Iceland	800	800	840	840
India	2,360	2,750	3,850	3,850
Norway	1,230	1,230	1,550	1,550
Qatar	610	640	640	640
Russia	3,530	3,580	4,180	4,180
Saudi Arabia	682	740	740	740
South Africa	695	690	715	715
United Arab Emirates	2,400	2,400	2,400	2,400
Other countries	5,900	6,240	8,350	8,370
World total (rounded)	57,500	57,600	71,200	72,500

World Resources: Global resources of bauxite are estimated to be between 55 to 75 billion tons and are sufficient to meet world demand for metal well into the future.¹

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

^eEstimated.

¹See also Bauxite and Alumina.

²Defined as domestic 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 industry stock changes.