

Aluminum

Aluminum - 2011 Annual Review and Outlook

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Aluminum - 2011 Annual Review and Outlook

HIGHLIGHTS

- Canadian smelters produced 3.0 million tonnes (Mt) of primary aluminum in 2011, representing approximately 6.6% of world production. Canada again ranked third in the world for primary aluminum production after China and Russia.
- Canadian industry has continued to make significant investments in modernizing smelters and improving efficiency. The efficiency gains and reduced emissions are expected to contribute to enhanced competitiveness.
- Following steady increases in the first quarter of 2011, aluminum prices on the London Metal Exchange (LME) declined from a high of US\$2772 per tonne (t) (US\$1.2574 per pound [lb]) on April 26, 2011, to a low of US\$1945/t (US\$0.8822/lb) on December 21, 2011.
- Depressed prices are expected to continue through 2012.

CANADIAN PRODUCTION

Bauxite/Alumina

Canada has no bauxite mines and ranked eleventh in the world for alumina production in 2011. Over the year, Canada imported 3.2 Mt of bauxite, primarily from Guinea (51%) and Brazil (43%), and 4.16 Mt of alumina, primarily from Brazil (52%), the United States (21%), and Jamaica (15%).

Rio Tinto Alcan's 1.5-million-tonnes-per-year (Mt/y) Vaudreuil alumina plant in Jonquière, Quebec, is the only facility in Canada that produces alumina from bauxite; it produced 1.47 Mt in 2011.

Quebec-based Orbite Aluminae announced that it plans to bring two commercial-scale alumina plants on line: one in 2012 and the second in 2014. The plants will use the company's own hydrometallurgical process to extract alumina from sources, including aluminous clay.

Primary Aluminum

Canada ranked third in the world for primary aluminum production after China (18.1 Mt) and Russia (4.0 Mt). Canada's 10 operating smelters produced 3.0 Mt in 2011, a 1.0% increase from 2010. Refer to Table 1 for a summary of Canada's aluminum production value over the period 2009-11.

The production increase was related to the return to production of Rio Tinto Alcan's Laterrière smelter potlines that had been out of service due to a July 2010 explosion and power outage. Increases in production were also seen at the Sept-Îles, Deschambault, and Grande-Baie smelters, which more than offset the production decline from the 2010 closure of two potlines at Kitimat.

At the end of December 2011, Canada had an installed capacity of approximately 3.1 Mt/y of primary aluminum. The following is a summary of Canadian aluminum smelters in operation during 2011. Refer to Table 2 for additional information.

Quebec

Nine of the ten operating Canadian smelters are located in Quebec. The largest, the 590 000-tonnes-per-year (t/y) Sept-Îles smelter, is operated by Aluminerie Alouette Inc., which is a joint venture owned by Rio Tinto Alcan (40%), Austria Metall AG (20%), Hydro Aluminium (20%), Investissement Québec (13.3%), and Marubeni (6.7%). Alouette aims to significantly expand capacity by adding another potline within the next 10-15 years.

Alcoa owns and operates the 400 000-t/y Baie-Comeau and 260 000-t/y Deschambault smelters. A new prebake line at Baie-Comeau is projected to commence production by 2015. A planned amperage increase at Deschambault is expected to raise capacity to 285 000 t/y by 2016.

The 420 000-t/y Bécancour smelter is owned by Aluminerie de Bécancour Inc. (A.B.I.), a joint venture in which Alcoa has a 75% stake and Rio Tinto Alcan has 25%.

Rio Tinto Alcan fully owns and operates five smelters in Quebec (Alma, Arvida [Jonquière], Grande-Baie, Laterrière, and Shawinigan) with a combined capacity estimated at 1 170 000 t/y. Over the past three years, an increase in operating amperage at the Grande-Baie smelter has increased capacity to around 218 000 t/y from 211 000 t/y. Rio Tinto Alcan stated that it is on schedule to close the 100 000-t/y Shawinigan and 176 000-t/y Arvida (Jonquière) smelters by December 2014. The company's new Jonquière AP60 facility is expected to be commissioned in 2014.

British Columbia

Rio Tinto Alcan's Kitimat smelter in British Columbia is the only Canadian aluminum smelter outside of Quebec. The company has made significant investments to build a new AP40 potline since the Kitimat modernization and expansion project was first announced in 2006. To make room for the new line, two Söderberg lines were closed in 2010. This reduced the smelter's capacity to 215 000 t/y from 282 000 t/y. First production from the new AP40 potline is expected in 2014.

CANADIAN DEVELOPMENTS

Bauxite/Alumina

In July, Rio Tinto Alcan announced that it had signed a long-term steam supply agreement with Elkem Metal Canada for its Vaudreuil alumina plant in Jonquière. This is intended to reduce the plant's energy supply costs and is also expected to reduce greenhouse gas (GHG) emissions by approximately 40 000 t/y.

In February, Exploration Orbite V.S.P.A. Inc., now Orbite Aluminae, announced the production of the first tonne of alumina from its Cap-Chat pilot facility in Quebec's Gaspésie region. The company has developed new technologies for extracting smelter-grade and high-purity alumina from aluminous clay and bauxite. Orbite also owns the mining rights to a significant aluminous clay deposit in the Gaspésie. In June, the company signed a deal with Mackie Research Capital Corporation to raise the \$50 million in capital needed for the conversion of its pilot facility into a commercial plant. Orbite announced that it plans to bring two alumina plants on line (one by mid-2012 and the second by early 2014) and expects to produce smelter-grade alumina at well below the standard industry cost curve.

Primary Aluminum

In Quebec, potlines using the older Söderberg technology are to be phased out by the end of December 2014 to comply with the provincial government's environmental regulations. Rio Tinto Alcan has stated that it is on schedule to close the Shawinigan and Arvida (Jonquière) smelters.

In April, Alcoa released details of its planned capital investments in Canada, including \$25 million towards a more ergonomic and safe work environment, \$12 million to replace the Deschambault smelter's No. 1 transformer, and an unspecified amount for the implementation of a computer-based cell control system in all three of its Quebec smelters. Alcoa also announced a \$75 million investment to upgrade its harbour facilities at Baie-Comeau, which is expected to be completed in 2012.

In May, Rio Tinto Alcan announced a \$36 million investment over two years at its Laterrière smelter to improve the electrolytic cell control system, which is expected to increase production and reduce costs and GHG emissions.

On May 31, 2012, Alcoa and the members of the Syndicat National des Employés de l'Aluminium de Baie-Comeau agreed upon a new eight-year collective agreement at the Baie-Comeau smelter.

In November, Alcoa announced that it had approved the next phase of a five-year, \$2.1 billion investment plan for its Quebec smelters, which includes replacing the Söderberg potlines at the Baie-Comeau smelter with an all-new Alcoa-developed electrolysis potline with a production capacity of 160 000 t/y by 2015. Also included is a project to increase the amperage of the Deschambault smelter to 405 000 amperes by 2016, which is expected to increase the plant's capacity by 25 000 t/y by 2016.

Also in November, Marubeni announced that it would increase its share in Aluminerie Alouette to 13.33% by purchasing half of Investissement Québec's share. In the same month, an agreement was announced between Hydro-Québec and Alouette to provide the smelter with an additional 500-megawatt block of power. The increase in available power will enable Phase 3 of the

smelter's expansion to proceed. The \$2 billion expansion would take place over the next 15 years and increase the smelter's capacity to over 900 000 t/y. The completion of engineering studies and shareholder approvals are not expected before 2013.

In December, Rio Tinto Alcan announced an additional US\$2.7 billion capital investment to modernize its Kitimat smelter in British Columbia. The US\$3.3 billion modernization project, using Rio Tinto Alcan's proprietary AP40 smelting technology, is expected to be completed in 2014. The project will increase the smelter's production capacity to 420 000 t/y and reduce its CO₂ emissions intensity by approximately 50%. Significant investments are also being made to establish the first commercial-scale, energy-efficient AP60 smelter in Jonquière, Quebec. Expected to begin production in 2013, Phase 1 of the AP60 smelter would have a capacity of 60 000 t/y.

A power outage on December 29, 2011, forced the closure of two of Rio Tinto Alcan's four production lines at the Shawinigan smelter. In the same month, the labour contract at Rio Tinto Alcan's Alma smelter expired. With no new agreement in place by year-end, a labour stoppage was expected. These events will have an impact on 2012 production.

During 2011, the Aluminum Association of Canada continued its work to identify and respond to opportunities and challenges related to the uptake of aluminum-based technologies in key sectors, including transportation and infrastructure.

WORLD PRODUCTION

Bauxite/Alumina

World production of bauxite increased 8.9% to 248 Mt in 2011 from 228 Mt in 2010. Twenty-eight percent (28%) of this production was from Australia, 16% was from Indonesia, and 15% was from China. The majority of this increase was in Indonesia, where data indicate a 14-Mt increase over 2010 production. Refer to Table 3 for additional information on world bauxite production.

World production of alumina increased 2.7% to 87.3 Mt in 2011 from 85.0 Mt in 2010. The most significant year-over-year increases in alumina production were seen in India and Brazil. Data indicate that India added 1.0 Mt, bringing its 2011 production to 4.0 Mt, while Brazil added 0.7 Mt, bringing its 2011 production to 10.2 Mt. The most significant decline in alumina production for the year was in Australia where production dropped from 20.0 Mt in 2010 to 19.3 Mt in 2011. Refer to Table 4 for additional information on world alumina production.

Primary Aluminum

World production of primary aluminum increased 11.2% to 45.6 Mt in 2011 from 41.0 Mt in 2010. China accounted for 42% of total output. China also accounted for the majority of the year's production increases, adding 1.90 Mt, a 10.5% increase over 2010. Responding to the availability of abundant and low-cost natural gas, the Middle East continues to build capacity, notably in the United Arab Emirates and Qatar, where production increased by 0.4 Mt and 0.2 Mt, respectively. In the United States, restarts of production at previously idled facilities contributed to a 0.26-Mt production increase, which represents a slight recovery from the significant decrease in 2009. Refer to Table 5 for information on world production of primary aluminum from 2007 to 2011.

WORLD DEVELOPMENTS

The Chinese government has committed to a policy that would remove the least efficient smelters from production. However, the resulting 600 000-t/y loss in capacity is expected to be more than offset by numerous expansions and by restarts of idled facilities. The new Xinjiang Tianshan Aluminium facility is expected to begin production in 2012 and to build its capacity from an initial 150 000 t/y to an estimated 800 000 t/y in 2016. In addition, expansions at the Henan Shenhua and Gansu Dongxing smelters are together expected to add approximately 1 Mt of capacity.

In the Middle East, the availability of low-cost natural gas continues to attract investment in the primary aluminum industry. The 585 000-t/y Qatalum smelter reached capacity in September. The EMAL smelter in the United Arab Emirates reached full capacity at the end of 2010 and was expected to produce 750 000 t in 2011. The smelter's owners, Dubai and Mubadala Development Company, are reportedly considering doubling the smelter's capacity to 1.5 Mt by 2014.

In India, Hindalco Industries Ltd. is in the process of constructing a number of new facilities: the 359 000-t/y Aditya Al smelter is expected to be in production in 2014; the 350 000-t/y Mahan smelter is expected to start production in 2012; and the planned 359 000-t/y Jharkhand smelter, which is in the feasibility study stage, is expected to be completed in 2015. Mahan and Jharkhand are two of three facilities to be built using Rio Tinto Alcan's AP technology, as was agreed to in a 2007 Technology Transfer Agreement.

In Russia, United Company Rusal is in the process of building two new facilities; the Boguchansk and Taishet smelters, both with a capacity of 150 000 t/y, are expected to begin operation in 2013. The smelters will use Rusal's proprietary RA-300 and RA-400 technology.

In the United States, a number of companies have restarted previously idled capacity. For example, Alcoa restarted potlines at facilities that include the Massena East smelter (125 000 t/y) in New York and Wenatchee Works and Intalco in Washington.

Some production decreases are being realized in Europe and the United Kingdom, and these are expected to continue. The Netherlands' Vissingen smelter stopped production in December after the company filed for bankruptcy, which removed 230 000 t/y of capacity. In November, Rio Tinto Alcan announced plans to close the 175 000-t/y Lynemouth smelter in 2012. In December 2011, the company cut 111 000 t/y of production at Lynemouth following a power outage.

MARKETS AND PRICES

The aluminum market was not insulated from short-term impacts related to the tsunami in Japan and the longer-term impacts from the debt crisis in Europe and lower-than-expected growth in China. Both demand and prices through 2011 were lower than projected. Reflecting on depressed prices, some industry analysts have suggested that nearly a third of the world's aluminum smelters are producing at a loss. Companies are exploring options for reducing costs, including streamlining operations. For example, in October, Rio Tinto Alcan announced that, following a strategic review, it would streamline its aluminum product group by divesting 13 assets at an appropriate point in the future. None of the identified assets are in Canada.

The average annual London Metal Exchange (LME) cash settlement price for primary aluminum in 2011 was US\$2398/t (US\$1.09/lb), a 9.9% increase over the 2010 average. Following steady increases in the first quarter of 2011, aluminum prices declined from a high of US\$2772/t

(US\$1.26/lb) on April 26, 2011, to a low of US\$1945/t (US\$0.88/lb) on December 21, 2011. The average annual LME cash settlement price for aluminum alloy in 2011 was US\$2263/t (US\$1.03/lb), a 9.0% increase over the 2010 average. Annual average primary aluminum and aluminum alloy prices for the period 2002-11 and monthly average prices for 2010 and 2011 are shown in Table 7 and Table 8, respectively.

The International Aluminium Institute (IAI) reported that total inventories started the year at 2.63 Mt and then increased to end the year at 2.39 Mt. LME high-grade inventories started 2011 at approximately 4.53 Mt and increased to 4.98 Mt by year-end.

The Aluminum Association of Canada reports that global use of aluminum continues to be dominated by three sectors: transportation (27%), construction (24%), and packaging (13%). A variety of engineering applications, including cable production, accounts for around 20% of global aluminum consumption.

TRADE

Total exports of aluminum and aluminum products from Canada were valued at \$9.8 billion in 2011, compared to \$9.2 billion in 2010. Imports were valued at \$5.3 billion, compared to \$4.9 billion in 2010. This trade was overwhelmingly with the United States (78.6% of exports and 60.6% of imports by value). In 2011, total exports of unwrought aluminum (alloyed and not alloyed) were valued at \$6.4 billion and imports were valued at \$0.34 billion. Table 1 provides a detailed account of this trade.

OUTLOOK

With both the debt crisis in Europe and indications of lower-than-expected growth in China continuing, depressed prices are expected to continue through 2012.

In the short term, capacity decreases resulting from the closure of less efficient potlines and smelters are expected to be outweighed by capacity increases. In the coming years, the most significant capacity increases are expected to be seen in China, where some analysts expect a capacity increase of over 4 Mt in the next five years. A capacity increase of over 1 Mt is also expected in the Middle East, where Saudi Arabia's new Ma'aden smelter is expected to have over 700 000 t/y of capacity in place by 2016 and the United Arab Emirate's EMAL smelter is expected to add around 500 000 t/y of capacity by 2016.

Notes: (1) For definitions and valuation of mineral production, shipments and trade, please refer to the document entitled "Definitions and Valuation: Mineral Production, Shipments, and Trade." (2) Information in this review was current as of July 29, 2012. (3) This and other reviews, including previous editions, are available on the Internet at www.nrcan.gc.ca/minerals-metals/business-market/canadian-minerals-yearbook/4070.

Aluminum - Other Information

HISTORY – SMELTING AND REFINING

Aluminum is the third most abundant element in the earth's crust after oxygen and silicon. Due to its reactivity, aluminum is always found in nature in its oxidized form, known as alumina. Primary aluminum metal is produced from bauxite, from which alumina is recovered using the Bayer process. The Bayer process was discovered by Karl Bayer in 1887. Bauxite contains 30-54% alumina, along with mainly iron and silica.

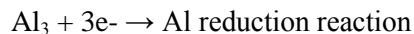
Bauxite is mined and crushed before being put into a hot caustic solution of sodium hydroxide at around 200 degrees Celsius. In a pressurized vessel, the alumina is converted to aluminum hydroxide, which dissolves into the solution. The other compounds do not dissolve. The solution is clarified by filtration; the red mud is washed and pumped to a tailings pond. The filtrate is then cooled and mixed with a small quantity of alumina, which helps to precipitate out an aluminum trihydrate as the solution cools. Once this process is complete, the aluminum trihydrate is calcined in a fluid bed calciner to produce alumina.

The industrial process for producing aluminum was discovered in 1886 almost simultaneously by Charles Martin of the United States and Paul Héroult of France who were working independently of each other. They discovered that alumina would dissolve in molten cryolite at a much lower temperature and that it could then be decomposed electrically to a molten metal using carbon anodes and cathodes.

The industrial process involves the electrolysis of alumina (Al_2O_3) in a bath of cryolite (Na_3AlF_6) with other fluorides, which reduces the melting point to permit the pots to operate at 960 degrees Celsius. Each production pot, and its sides and base, are lined with carbon (cathode) where the alumina is deposited. The carbon anode is placed in the top of the molten bath. Direct current is used to increase the efficiency of the pots (individual cells require between 4 and 5 volts), which are connected in series to form potlines of over 120 pots connected in series and operating at up to 600 000 amperes.

Once the alumina is in a molten state and the ions are free to move around, three reactions will occur:

1. The surface of the anode is where the electrons react with the aluminum ion to form metallic aluminum:



2. Oxygen is formed.

3. The oxygen then reacts with carbon from the anode to form CO_2 .

The anode has to be replaced regularly since it is consumed by the process.

The cathode is protected by the liquid aluminum, which prevents contact with oxygen. Cathodes last for long periods of time, e.g., up to about 10 years in newer smelters. Petroleum coke, along with coal pitch tar, is used to make the anodes and cathodes.

ENVIRONMENTAL ISSUES

As world production of aluminum increases, there is growing demand for the limited supply of low-sulphur petroleum coke used to manufacture anodes. Companies are therefore forced to use higher-sulphur petroleum coke for anode production. This is problematic in that the quantities of sulphur dioxide emitted by aluminum smelters could be increasing. Sulphur dioxide, when emitted into the atmosphere, contributes to acid rain, which has negative effects on the environment (leaching of heavy metals into water, lakes becoming acidic, reduction of fish stocks, slower plant growth, etc.). Work is being done to remove the sulphur from petroleum coke before making the anodes, but there are anode quality and process efficiency issues that have not been resolved. A promising new technology, called inert anode, is still years away from industrial use. The inert anode does not react with the oxygen formed around it, and the oxygen is emitted from the process instead of CO₂. This technology could eliminate two tonnes of greenhouse gas per tonne of aluminum produced.

USES

There are seven major market segments where aluminum is used:

1. **Transportation:** Aluminum is used to reduce the weight of vehicles and aircraft for increased fuel efficiency. Carbon composites may be a replacement for aluminum in aircraft.
2. **Electrical:** Aluminum is used extensively in electrical transmission and distribution cables due to its low weight, high electrical conductivity, and resistance to corrosion. It is also used in electrical substations, appliances, and motors.
3. **Containers and Packaging:** Aluminum has many qualities that make it an ideal packaging material such as its light weight (extensive use in beverage cans). It is used to keep out light, liquids, air, and microorganisms in order to preserve food, cosmetics, and pharmaceuticals. Aluminum also transmits heat very well, making it very energy efficient for preparing and serving both hot and cold food.
4. **Building and Construction:** Aluminum is used in both residential and non-residential applications such as roofing, cladding, windows and doors, gutters, door handles, ceiling partitions, etc. In commercial buildings, it is used in the fabrication of superstructures.
5. **Consumer Durables:** Aluminum is used for heat transfer in home air conditioners' refrigerators and is also used in appliances. In addition, it can be casted and extruded into different shapes and forms.
6. **Machinery and Equipment:** The main applications of aluminum in this category are for use in radiators, engines, irrigation pipes, ladders, and scaffolding. It is also used for outer cladding of machines and instruments used by industry and laboratories, etc.
7. **Metallurgical:** Aluminum is used as a deoxidizer in the steel-making, as a coating for corrosion protection, and as an alloying agent.

Aluminum's uses are forecast to steadily increase in the coming years due to its light weight, strength, corrosion resistance, durability, and recyclability.

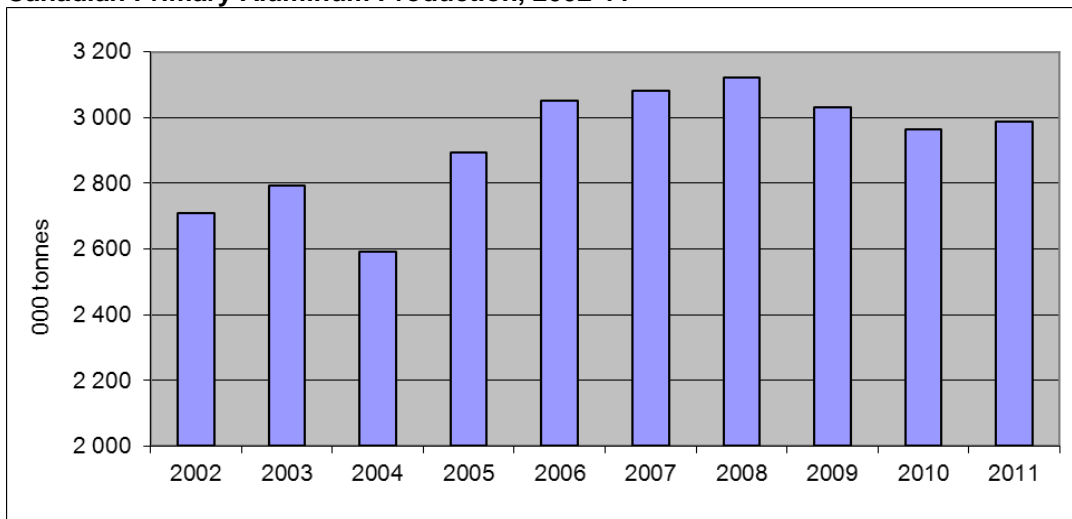
Figure 1
Aluminum Smelters in Canada, 2011



Numbers refer to locations on map above.

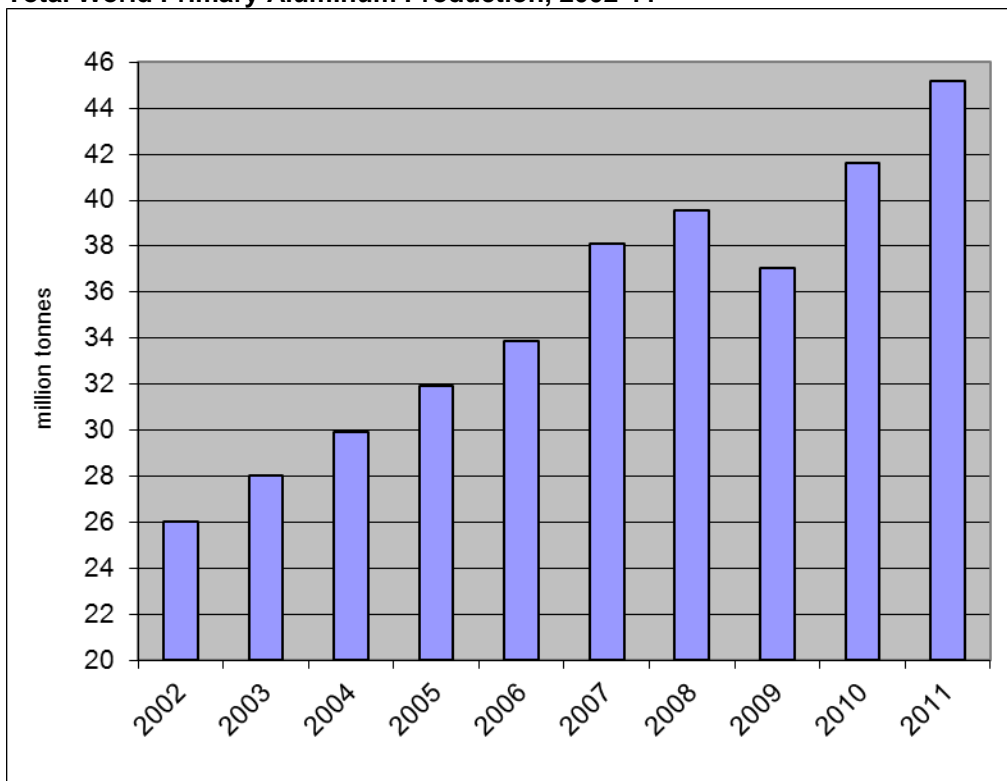
Index	Smelter	Operator/Owner
1	Sept-Îles	Rio Tinto Alcan Inc., Aluminium Austria Metall Québec, Hydro Aluminium a.s., Société générale de financement du Québec, Marubeni Québec Inc. (Alouette)
2	Baie-Comeau	Alcoa Inc.
3	Grande-Baie	Rio Tinto Alcan Inc.
4	Laterrière	Rio Tinto Alcan Inc.
5	Arvida (Jonquière)	Rio Tinto Alcan Inc.
6	Alma	Rio Tinto Alcan Inc.
7	Deschambault	Alcoa Inc.
8	Bécancour	Alcoa Inc./Rio Tinto Alcan Inc.
9	Shawinigan	Rio Tinto Alcan Inc.
10	Kitimat	Rio Tinto Alcan Inc.
11	Vaudreuil Works	Rio Tinto Alcan Inc.
12	Cap-Chat	Orbite Aluminae Inc.

Figure 2
Canadian Primary Aluminum Production, 2002-11



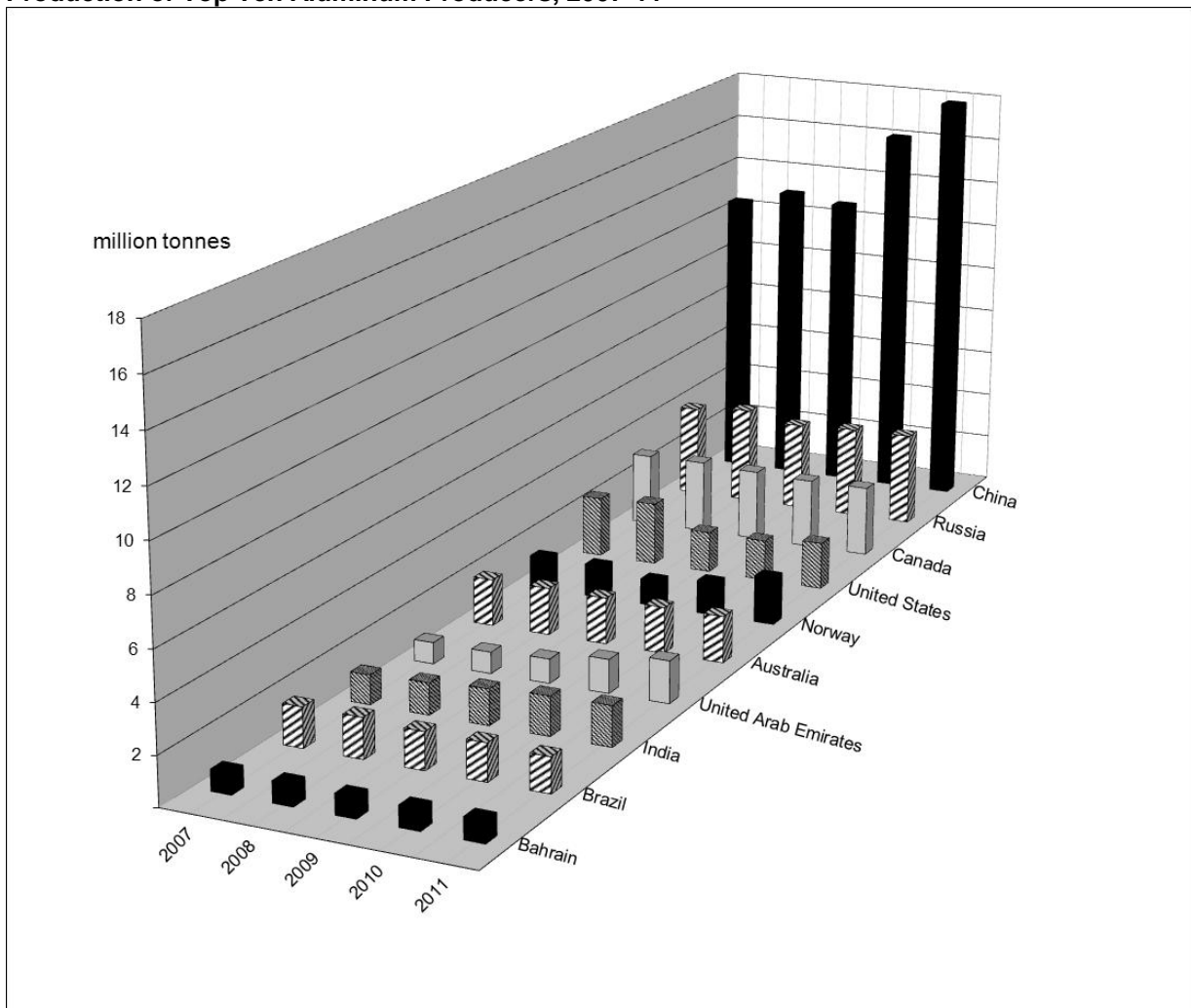
Sources: Natural Resources Canada; International Consultative Group on Nonferrous Metals Statistics.

Figure 3
Total World Primary Aluminum Production, 2002-11



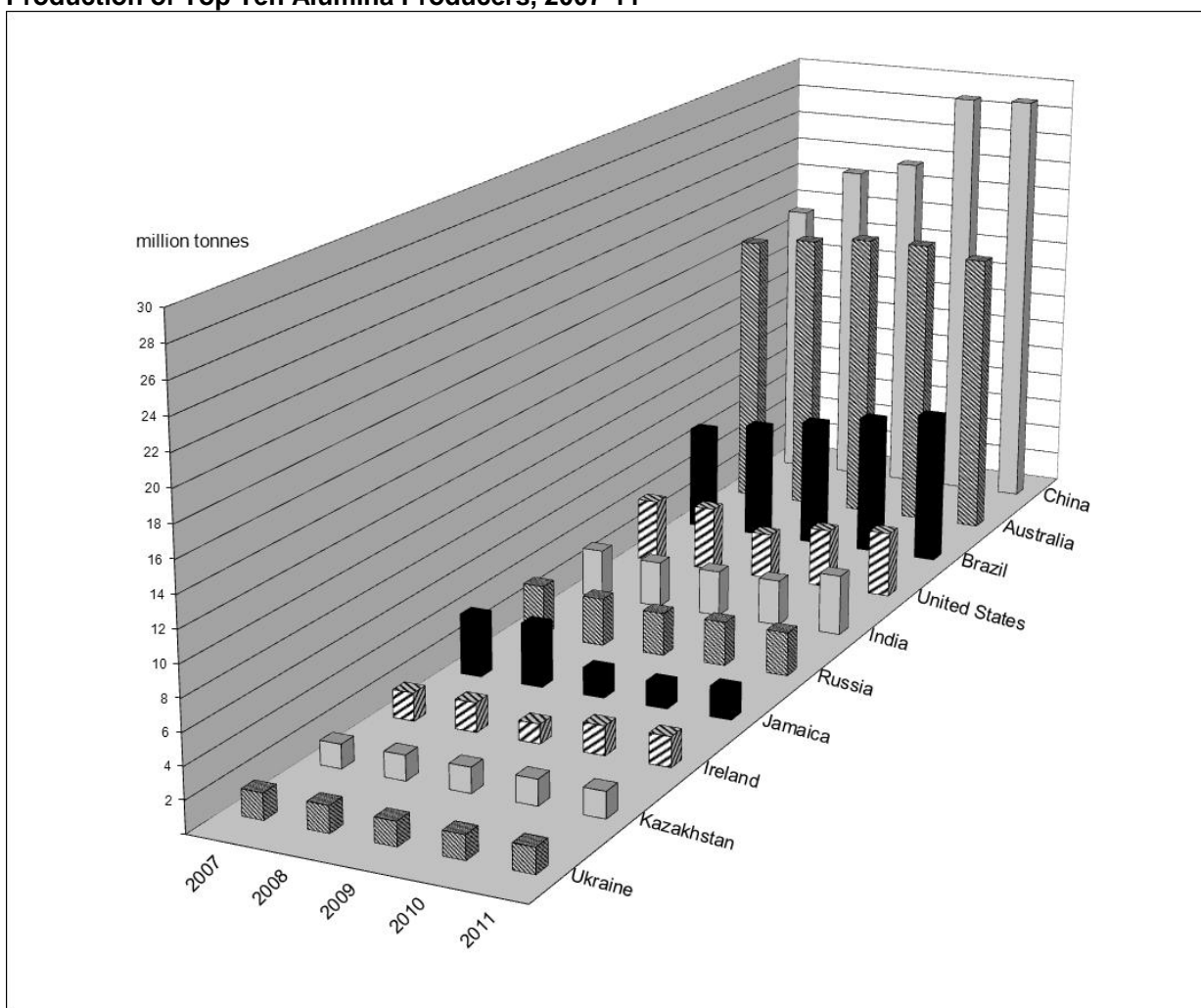
Source: International Consultative Group on Nonferrous Metals Statistics.

Figure 4
Production of Top Ten Aluminum Producers, 2007-11



Source: International Consultative Group on Nonferrous Metals Statistics.

Figure 5
Production of Top Ten Alumina Producers, 2007-11



Source: International Consultative Group on Nonferrous Metals Statistics.

TARIFFS

Item No.	Description	Canada			United States	European Union	Japan
		MFN	GPT	USA	Canada	Conventional Rate (1)	WTO (2)
26.06	Aluminum ores and concentrates	Free	Free	Free	Free	Free	Free
2620.40	Slag, ash and residues (other than from the manufacture of iron or steel) containing metals, arsenic or their compounds: containing mainly aluminum	Free	Free	Free	Free	Free	Free
28.18	Artificial corundum, whether or not chemically defined; aluminum oxide; aluminum hydroxide						
2818.20	Aluminum oxide, other than artificial corundum	Free	Free	Free	Free	4%	Free
2818.30	Aluminum hydroxide	Free	Free	Free	Free	5.5%	3.3%

2827.32	Chlorides, chloride oxides and chloride hydroxides; bromides and bromide oxides; iodides and iodide oxides: other chlorides: of aluminum	Free	Free	Free	Free	5.5%	3.3%
76.01	Unwrought aluminum						
7601.10	Aluminum, not alloyed	Free	Free	Free	Free	6% (3)	Free
7601.20	Aluminum alloys	Free	Free	Free	Free	6%	Free
76.02	Aluminum waste and scrap	Free	Free	Free	Free	Free	Free
76.03	Aluminum powders and flakes	Free	Free	Free	Free	5%	3%
76.04	Aluminum bars, rods and profiles						
7604.10	Of aluminum, not alloyed	Free	Free	Free	Free	7.5%	7.5%
7604.21	Of aluminum alloys: hollow profiles	Free	Free	Free	Free	7.5%	7.5%
7604.29	Of aluminum alloys: other	Free	Free	Free	Free	7.5%	7.5%
76.05	Aluminum wire	Free	Free	Free	Free	7.5%	7.5%
76.06	Aluminum plates, sheets and strip; of a thickness exceeding 0.2 mm	Free	Free	Free	Free	7.5%	Free-2%
76.07	Aluminum foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0.2 mm	Free-4.5%	Free-4.5%	Free	Free	7.5-10%	7.5%
76.08	Aluminum tubes and pipes	Free	Free	Free	Free	7.5%	7.5%
76.09	Aluminum tube or pipe fittings (for example, couplings, elbows, sleeves)	2%	2%	Free	Free	5.9%	3%
76.10	Aluminum structures (excluding prefabricated buildings of heading 94.06) and parts of structures (for example, bridges and bridge sections, towers, lattice masts, roofs, roofing frameworks, doors and windows and their frames and thresholds for doors, balustrades, pillars and columns); aluminum plates, rods, profiles, tubes and the like, prepared for use in structures	6.5%	5%	Free	Free	6-7%	Free-3%
76.11	Aluminum reservoirs, tanks, vats and similar containers, for any material (other than compressed or liquefied gas), of a capacity exceeding 300 litres, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment	Free	Free	Free	Free	6%	3%
76.12	Aluminum casks, drums, cans, boxes and similar containers (including rigid or collapsible tubular containers), for any material (other than compressed or liquefied gas), of a capacity not exceeding 300 litres, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment.	6.5%	2.5-5%	Free	Free	6%	3%
76.13	Aluminum containers for compressed or liquefied gas	Free	Free	Free	Free	6%	3%
76.14	Stranded wire, cables, plaited bands and the like, of aluminum, not electrically insulated	Free	Free	Free	Free	6%	3%

76.15	Table, kitchen or other household articles and parts thereof, of aluminum; pot scourers and scouring or polishing pads, gloves and the like, of aluminum; sanitary ware and parts thereof, of aluminum	6.5%	Free-5%	Free	Free	6%	Free
76.16	Other articles of aluminum	Free-6.5%	Free-5%	Free	Free	6%	3%

Sources: Canadian *Customs Tariff*, effective January 2011, Canada Border Services Agency; *Harmonized Tariff Schedule of the United States*, 2011; *Official Journal of the European Union* (Tariff Information), October 29, 2010 edition; *Customs Tariff Schedules of Japan*, 2011.

GPT General Preferential Tariff; MFN Most Favoured Nation; mm Millimetres; WTO World Trade Organization.

(1) The customs duties applicable to imported goods originating in countries that are Contracting Parties to the General Agreement on Tariffs and Trade or with which the European Community has concluded agreements containing the most-favoured-nation tariff clause shall be the conventional duties shown in column 3 of the Schedule of Duties. (2) WTO rate is shown; lower tariff rates may apply circumstantially. (3) Autonomous rate of duty: 3.

TABLE 1. CANADA, ALUMINUM PRODUCTION AND TRADE, 2009-11

		2009		2010		2011 (p)	
		(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
PRODUCTION (refined)		3 030 269	..	2 963 210	..	2 987 964	..
EXPORTS							
2606.00	Aluminum ores and concentrates						
	Australia	–	–	11	7	..	10
	United States	45	7	–	–	83	8
	Madagascar	–	–	3	2	–	–
	Total	45	7	14	9	83	18
2620.40	Ash and residues containing mainly aluminum						
	United States	51 175	22 547	34 461	14 671	35 529	16 087
	Germany	–	–	5 354	557	1 624	419
	Total	51 175	22 547	39 815	15 228	37 153	16 506
2818.20	Aluminum oxide (excluding artificial corundum)						
	India	...	...	784	952	4 547	5 609
	United States	14 506	28 979	23 420	9 666	8 877	3 499
	Nigeria	–	–	304	463	1 174	1 813
	Brazil	...	1	442	635	1 296	1 740
	South Korea	...	...	283	413	1 167	1 675
	Uzbekistan	–	–	288	493	720	1 140
	France	–	–	161	203	860	1 122
	United Kingdom	9	12	38	54	552	859
	Italy	...	...	163	243	480	726
	Japan	–	–	148	201	475	664
	Venezuela	–	–	80	114	432	627
	Taiwan	–	–	38	51	300	447
	China	17	32	150	222	252	383
	South Africa	–	–	39	51	138	328
	Germany	759	1 114	115	165	224	325
	Slovenia	–	–	23	26	162	242
	Bahrain	–	–	–	–	160	239
	Netherlands	1	2	238	344	151	229
	Dominican Republic	–	–	–	–	144	175
	Saudi Arabia	...	...	64	106	109	170
	Other countries	7	12	160	233	249	477
	Total	15 299	30 152	26 938	14 635	22 469	22 489
2827.32	Other chlorides: of aluminum						
	United States	177	96	338	194	361	436

	Other countries	24	30	16	21	...	...
	Total	201	126	354	215	361	436
7601.10	Unwrought aluminum, not alloyed						
	United States	1 391 453	2 631 078	1 115 555	2 612 642	991 052	2 516 880
	Netherlands	104 427	168 440	188 768	382 675	198 898	445 616
	Norway	–	–	35 265	71 800	97 326	190 787
	United Kingdom	51 466	87 685	32 784	69 430	54 685	128 259
	South Korea	90 260	171 591	45 292	104 706	21 962	53 816
	Japan	43 290	89 273	20 503	48 052	20 945	49 727
	United Arab Emirates	–	–	–	–	14 466	38 341
	India	–	–	–	–	9 658	31 403
	Other countries	274	631	1 497	3 948	1 590	4 586
	Total	1 681 170	3 148 698	1 439 664	3 293 253	1 410 582	3 459 415
7601.20	Unwrought aluminum alloyed						
	United States	625 801	1 348 784	820 388	2 076 282	842 062	2 294 229
	Mexico	56 382	118 629	89 919	225 137	100 544	274 375
	Japan	55 309	119 766	70 808	172 181	48 574	120 361
	South Korea	33 034	68 785	49 067	115 344	41 109	97 825
	France	1 758	7 318	14 868	45 654	14 448	69 999
	United Kingdom	4 429	10 866	5 820	16 014	6 290	18 469
	Brazil	3 965	8 486	14 786	38 328	6 058	17 995
	Netherlands	–	–	...	...	3 283	9 475
	China	3 283	7 098	7 190	17 173	3 631	9 231
	Turkey	935	2 218	1 077	2 991	1 069	3 285
	Israel	7 474	16 233	4 491	10 676	904	2 618
	Bahrain	–	–	–	–	766	2 075
	Denmark	61	147	442	1 168	504	1 488
	Germany	60	189	98	388	428	1 178
	India	105	267	296	842	369	1 138
	Other countries	1 356	3 219	1 890	4 942	849	2 221
	Total	793 952	1 712 005	1 081 140	2 727 120	1 070 888	2 925 962
7602.00	Aluminum waste and scrap						
	United States	279 406	353 082	323 570	499 434	339 467	584 290
	China	71 807	88 475	96 235	155 055	108 670	195 548
	South Korea	5 198	7 656	12 948	25 271	12 083	25 033
	France	246	491	592	1 493	1 943	5 226
	Ireland	491	1 222	2 964	7 000	1 442	3 906
	Taiwan	1 673	2 136	2 771	5 295	1 806	3 238
	Spain	–	–	–	–	936	2 544
	United Kingdom	89	133	110	214	848	2 250
	Hong Kong	1 079	1 335	588	1 002	1 037	2 062
	Brazil	193	293	281	534	922	1 730
	India	2 591	3 840	1 232	2 113	701	1 278
	Belgium	–	–	–	–	636	1 155
	Netherlands	70	137	–	–	388	995
	Thailand	226	336	74	127	542	960
	Japan	255	376	393	662	452	887
	Pakistan	370	412	1 177	1 266	620	746
	Italy	75	131	380	684	345	684
	Cocos (Keeling) Islands	–	–	–	–	81	198
	Vietnam	50	60	360	721	79	160
	Other countries	1 538	2 173	321	559	249	311
	Total	365 357	462 288	443 996	701 430	473 247	833 201
76.03	Aluminum powders and flakes						
	Germany	7	793	103	1 347	146	768
	Taiwan	16	117	–	–	10	80
	United States	58	202	5	18	9	31

	Other countries	–	–	...	3	2	14
	Total	81	1 112	108	1 368	167	893
76.04	Aluminum bars, rods and profiles						
	United States	50 775	219 849	60 121	250 028	57 505	254 871
	United Arab Emirates	...	7	1 945	5 217	21 115	56 313
	India	11	53	225	722	5 279	17 278
	Germany	725	2 704	1 059	4 284	1 191	4 984
	China	2 745	18 001	131	865	481	2 526
	Switzerland	331	1 014	405	1 366	504	1 712
	Italy	114	355	93	320	456	1 588
	Bahrain	–	–	1	6	253	686
	Norway	43	320	18 131	36 521	133	519
	France	27	51	11	57	68	456
	Peru	3	18	...	1	73	363
	Barbados	64	490	43	333	39	341
	Brazil	6	37	9	74	40	249
	Mexico	24	169	32	233	47	213
	Netherlands	12	56	31	148	40	190
	South Korea	12	79	10	61	20	124
	Thailand	5	34	20	130	16	114
	Chile	40	193	9	47	15	107
	Other countries	717	3 517	983	5 274	98	706
	Total	55 654	246 947	83 259	305 687	87 373	343 340
76.05	Aluminum wire						
	United States	140 306	323 382	137 725	370 977	157 909	458 753
	South Africa	5	28	43	114	3 296	9 522
	Ecuador	39	98	1 941	5 019	3 330	9 451
	China	1 304	3 147	3 977	11 116	2 638	8 801
	Brazil	258	748	543	1 674	1 251	4 139
	Colombia	262	719	390	1 285	843	2 692
	Mexico	501	1 412	533	1 687	548	1 853
	France	18	98	1 112	2 927	626	1 731
	Netherlands	2 926	7 325	6 625	18 116	158	959
	India	84	410	116	671	129	772
	South Korea	507	1 579	404	1 465	162	637
	Thailand	298	857	500	1 620	170	609
	Australia	18	87	129	670	73	419
	Bahrain	3	14	5	31	52	314
	United Arab Emirates	170	1 013	6	26	52	275
	Belgium	–	–	–	–	78	218
	Peru	8	38	–	–	59	197
	Turkey	12	61	10	69	35	177
	Italy	–	–	–	–	40	156
	United Kingdom	–	–	–	–	40	149
	Poland	–	–	16	107	27	115
	Other countries	363	1 895	348	1 752	148	647
	Total	147 082	342 911	154 423	419 326	171 664	502 586
76.06	Aluminum plates, sheets and strip, of a thickness exceeding 0.2 mm						
	United States	204 318	599 711	245 741	804 783	242 610	834 866
	China	271	1 595	654	3 520	808	4 594
	South Korea	18	50	31	2 237	626	2 673
	Mexico	13	58	7	29	176	1 019
	Vietnam	–	–	–	–	159	905
	Chile	239	1 307	311	1 804	149	815
	India	...	2	269	1 348	166	775
	Japan	136	953	34	2 128	101	429
	United Kingdom	3	14	...	...	37	200

	Germany	3	11	7	46	70	197
	Colombia	5	14	18	53	37	167
	Cuba	...	...	14	68	33	157
	Algeria	1	4	–	–	42	155
	Brazil	4	20	3	14	33	154
	Ireland	27	119	37	161	37	147
	Other countries	721	4 426	479	2 377	75	366
	Total	205 759	608 284	247 605	818 568	245 159	847 619
76.07	Aluminum foil not exceeding 0.2 mm						
	United States	17 361	113 886	19 494	118 842	18 084	112 305
	New Zealand	83	623	205	949	183	1 462
	Mexico	1 095	8 644	510	3 919	163	1 171
	Australia	136	1 027	156	1 121	157	1 161
	Venezuela	89	709	77	577	126	1 012
	United Kingdom	98	645	84	607	63	486
	India	2	12	27	249	38	345
	Japan	25	295	50	230	40	288
	Argentina	59	477	36	286	34	247
	Honduras	23	155	26	186	29	208
	Thailand	5	38	14	126	22	173
	Belgium	1	6	4	33	22	166
	Israel	25	122	38	166	30	113
	Germany	21	164	53	299	19	112
	Taiwan	15	110	5	36	13	101
	Other countries	119	971	127	975	87	606
	Total	19 157	127 884	20 906	128 601	19 110	119 956
76.08	Aluminum tubes and pipes						
	United States	3 562	17 008	4 438	20 806	4 653	21 614
	China	115	1 351	177	1 996	221	2 535
	Singapore	3	43	14	163	81	932
	Mexico	7	88	9	100	37	482
	Argentina	–	–	–	–	36	157
	Panama	–	–	–	–	17	149
	Australia	42	546	8	97	8	100
	Other countries	64	783	99	994	75	792
	Total	3 793	19 819	4 745	24 156	5 128	26 761
76.09	Aluminum tube or pipe fittings						
	United States	525	11 193	654	14 170	599	13 308
	Mexico	28	334	15	179	77	923
	Czech Republic	4	50	20	245	32	379
	Singapore	3	37	21	283	15	214
	Kyrgyzstan	17	207	18	211	17	208
	South Korea	2	21	5	81	12	131
	France	2	23	2	25	13	103
	Other countries	45	530	68	667	53	667
	Total	626	12 395	803	15 861	818	15 933
		(n.a.)	(\$000)	(n.a.)	(\$000)	(n.a.)	(\$000)
76.10	Aluminum structures and parts of structures, aluminum plates, rods, profiles, tubes and the like, prepared for use in structures						
	United States	..	381 444	..	269 989	..	228 242
	Sweden	..	6 422	..	7 559	..	4 800
	United Kingdom	..	1 884	..	1 346	..	2 090
	Italy	..	87	..	334	..	1 505
	Denmark	..	28	..	23	..	1 459
	Netherlands	..	847	..	1 535	..	1 223
	Australia	..	1 009	..	46	..	1 215
	Ukraine	..	489	..	88	..	1 214

	United Arab Emirates	..	871	..	2 922	..	960
	France	..	1 048	..	809	..	902
	Germany	..	166	..	288	..	873
	Mexico	..	959	..	1 802	..	735
	China	..	411	..	923	..	602
	Poland	..	192	..	198	..	552
	Qatar	..	991	..	881	..	528
	Other countries	..	16 159	..	10 360	..	7 917
	Total	..	413 007	..	299 103	..	254 817
		(number)	(\$000)	(number)	(\$000)	(number)	(\$000)
76.11	Aluminum reservoirs, tanks, vats and similar containers, for any material, etc.						
	United States	630	542	147	719	825	1 639
	United Arab Emirates	–	–	–	–	8	20
	Paraguay	–	–	–	–	3	12
	Other countries	10	147	26	182	6	15
	Total	640	689	173	901	842	1 686
76.12	Aluminum casks, drums, cans, boxes and similar containers, for any material						
	United States	392 621 024	79 401	503 077 917	77 352	453 370 285	78 921
	Belgium	122 856	6 103	128 398	6 540	163 017	8 306
	France	4 641	266	35 314	1 621	69 273	3 484
	Poland	17 715 266	1 277	32 659 194	2 086	48 776 793	3 206
	United Kingdom	89 656	4 059	72 297	3 733	258 542	2 690
	Netherlands	45 917	2 293	44 591	2 279	51 177	2 478
	Germany	73 873	871	552 835	1 092	1 706 021	1 530
	Italy	961	22	3 690	225	7 206	483
	Peru	294 697	139	–	–	6 773 768	399
	Thailand	4	1	20	4	6 103 008	386
	Czech Republic	10 217	236	4 172	351	4 867	386
	Ireland	2 428	288	1 800	234	2 389	311
	Austria	2 312	116	3 404	175	4 976	255
	India	760 184	187	162 438	65	1 023 642	227
	Denmark	1 224	24	1 300	124	1 987	171
	Other countries	29 839	526	428 657	1 235	1 010 982	375
	Total	411 775 099	95 809	537 176 027	97 116	519 327 933	103 608
76.13	Aluminum containers for compressed or liquefied gas						
	United States	6 971 754	4 723	9 834 864	7 657	10 671 832	6 321
	South Korea	337	169	1 800	897	750	369
	Japan	383	186	217	109	492	250
	Poland	35	20	237	135	372	224
	South Africa	12	8	13	9	34 144	183
	Ireland	–	–	16	8	327	160
	Brazil	–	–	5	3	275	139
	Sudan	105	52	2	...	136	102
	Other countries	2 634	1 045	693	352	431	195
	Total	6 975 260	6 203	9 837 847	9 170	10 708 759	7 943
		(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
76.14	Stranded wire, cables, plaited bands and the like, of aluminum, not electrically insulated						
	United States	8 744	30 173	10 471	34 206	15 928	53 227
	Brazil	20	46	...	1	763	3 013
	India	...	1	2	4	51	122
	Other countries	38	695	88	233	142	411
	Total	8 802	30 915	10 561	34 444	16 884	56 773
		(n.a.)	(\$000)	(n.a.)	(\$000)	(n.a.)	(\$000)
76.15	Table, kitchen or other household articles and parts thereof, of aluminum						

	United States	..	32 444	..	31 457	..	18 584
	Mexico	..	2 008	..	2 079	..	2 472
	Cuba	..	1	..	309	..	348
	Germany	..	228	..	261	..	326
	Czech Republic	..	102	..	48	..	108
	Other countries	..	992	..	263	..	236
	Total	..	35 775	..	34 417	..	22 074
76.16	Other articles of aluminum						
	United States	..	187 919	..	190 205	..	206 126
	China	..	2 234	..	2 628	..	8 778
	Poland	..	1 058	..	3 095	..	5 764
	Austria	..	2 159	..	2 687	..	3 049
	Chile	..	2 628	..	3 980	..	3 025
	Japan	..	755	..	1 269	..	2 608
	United Kingdom	..	2 833	..	5 812	..	2 049
	Germany	..	751	..	1 086	..	1 331
	France	..	841	..	1 099	..	1 069
	Hong Kong	..	496	..	523	..	1 021
	Mexico	..	1 446	..	2 335	..	930
	Singapore	..	656	..	669	..	900
	Australia	..	1 315	..	948	..	653
	South Korea	..	965	..	1 362	..	626
	Turkey	..	669	..	414	..	582
	Malaysia	..	1 292	..	992	..	559
	Finland	..	992	..	294	..	554
	Qatar	..	52	..	55	..	510
	Other countries	..	10 967	..	12 187	..	5 667
	Total	..	220 028	..	231 640	..	245 801
Total exports		..	7 537 601	..	9 172 248	..	9 807 817
IMPORTS							
2606.00	Aluminum ores and concentrates						
	Guinea	1 193 542	62 318	1 573 812	46 919	1 619 525	55 996
	Brazil	1 021 797	51 017	1 677 527	45 041	1 384 187	49 576
	China	2 273	1 472	15 460	6 893	18 468	7 317
	Guyana	28 034	1 983	21 018	1 344	152 214	6 965
	United States	13 567	2 474	23 196	2 549	22 182	2 813
	Greece	29 307	1 725	–	–	1 300	466
	Other countries	10 011	2 482	62 156	2 383	84	9
	Total	2 298 531	123 471	3 373 169	105 129	3 197 960	123 142
2620.40	Ash and residues containing mainly aluminum						
	United States	2 660	1 590	7 580	3 786	18 769	3 971
	China	22	11	–	–	–	–
	Canada	–	–	...	...	–	–
	Total	2 682	1 601	7 580	3 786	18 769	3 971
2818.20	Aluminum oxide (excluding artificial corundum)						
	Brazil	2 175 074	583 156	2 233 354	697 677	2 158 585	767 427
	United States	455 924	157 616	738 452	244 381	865 892	323 758
	Jamaica	400 704	130 624	426 625	128 059	609 390	236 257
	Australia	651 766	240 090	463 752	155 366	318 801	107 790
	Suriname	291 233	102 747	280 754	86 373	173 201	64 845
	Venezuela	133 976	59 175	200 359	60 392	24 346	8 653
	Germany	754	3 720	1 205	5 256	1 302	7 033
	China	1 387	2 332	1 605	1 767	1 288	1 987
	Japan	687	1 010	729	1 388	638	1 355
	France	1 383	1 447	1 099	995	752	1 313
	Austria	188	520	211	533	201	915
	India	345	299	421	384	1 013	700

	New Zealand	–	–	–	–	81	241
	Other countries	127	395	79	276	106	296
	Total	4 113 548	1 283 131	4 348 645	1 382 847	4 155 596	1 522 570
2818.30	Aluminum hydroxide						
	United States	5 237	5 290	6 267	5 672	10 549	7 084
	Germany	338	385	1 578	2 836	1 094	2 033
	Other countries	99	102	74	96	141	151
	Total	5 674	5 777	7 919	8 604	11 784	9 268
2827.32.00.00	Other chlorides: of aluminum						
	United States	8 809	9 087	10 526	9 909	12 006	11 856
	Indonesia	–	–	240	274	418	426
	Japan	96	118	41	51	38	52
	Other countries	22	52	20	49	49	53
	Total	8 927	9 257	10 827	10 283	12 511	12 387
7601.10	Unwrought aluminum, not alloyed						
	United States	7 857	12 685	12 390	18 487	10 391	25 940
	Canada	7 372	14 211	9 071	21 072	5 587	14 270
	New Zealand	649	1 299	4 805	8 303	1 038	2 608
	China	5	23	35	88	165	481
	Russia	102	215	100	250	155	397
	Venezuela	–	–	–	–	147	316
	France	–	–	31	126	55	200
	Other countries	324	699	98	233	13	34
	Total	16 309	29 132	26 530	48 559	17 551	44 246
7601.20	Unwrought aluminum alloyed						
	United States	76 722	152 638	102 269	230 244	103 494	264 798
	New Zealand	53	139	559	1 933	2 571	8 949
	Germany	632	1 956	1 119	3 074	1 498	4 096
	United Arab Emirates	–	–	–	–	1 470	4 047
	China	160	498	254	771	991	3 481
	Russia	1 482	2 970	1 215	3 275	1 133	3 139
	Venezuela	771	1 712	940	2 274	948	2 084
	Australia	1	9	3	40	312	1 059
	Brazil	1 551	4 067	1 147	3 501	319	924
	Netherlands	307	1 278	228	742	217	855
	Canada	1 095	2 457	893	1 803	275	779
	South Korea	–	–	2	31	240	648
	Czech Republic	811	2 471	527	1 453	218	587
	Switzerland	–	–	–	–	163	513
	Other countries	1 393	4 903	378	1 422	389	1 196
	Total	84 978	175 098	109 534	250 563	114 238	297 155
7602.00	Aluminum waste and scrap						
	United States	112 727	164 238	113 866	197 281	119 243	250 714
	France	1 513	2 883	1 048	3 268	807	2 304
	United Kingdom	1 423	2 189	267	520	505	1 074
	Cuba	2 182	2 160	942	1 346	564	962
	Canada	279	349	321	295	468	516
	Mexico	254	407	19	24	209	355
	South Korea	23	51	100	248	85	218
	Other countries	144	290	1 627	3 329	163	296
	Total	118 545	172 567	118 190	206 311	122 044	256 439
76.03	Aluminum powders and flakes						
	United States	877	3 886	1 506	4 441	902	4 478
	Germany	21	450	39	714	31	818
	China	2	21	1	5	4	212
	United Kingdom	19	86	120	542	36	150
	India	1	16	...	...	15	95

	France	46	140	19	73	19	65
	Other countries	3	68	17	177	2	53
	Total	969	4 667	1 702	5 952	1 009	5 871
7604.10	Aluminum bars, rods and profiles: of aluminum, not alloyed						
	United States	1 326	11 405	1 052	8 062	1 138	6 825
	Malaysia	591	1 973	453	1 489	388	1 406
	Spain	...	...	1	72	70	573
	China	353	2 340	155	1 480	116	561
	Germany	30	602	27	436	34	544
	Turkey	81	314	122	512	99	439
	India	144	506	233	1 069	84	407
	Other countries	177	1 207	240	1 504	240	1 596
	Total	2 702	18 347	2 283	14 624	2 169	12 351
7604.21 to 7604.29	Aluminum bars, rods and profiles: of aluminum alloys						
	United States	25 224	119 857	37 738	163 876	37 620	187 225
	China	2 382	9 772	2 832	11 992	3 457	26 234
	Malaysia	1 597	5 001	3 185	11 073	4 257	15 892
	South Korea	1 658	4 929	1 643	5 371	1 791	6 174
	Canada	555	5 152	628	6 362	428	5 373
	Germany	137	2 322	176	2 482	276	4 016
	India	396	1 349	490	1 751	624	2 414
	Thailand	458	1 489	555	1 643	647	2 272
	Taiwan	305	1 316	284	1 370	376	2 142
	Indonesia	782	1 953	237	740	581	2 132
	Italy	121	1 617	215	1 885	197	1 980
	Netherlands	26	230	8	1 753	254	1 679
	Vietnam	384	1 169	557	1 868	450	1 631
	Russia	128	655	186	960	169	922
	Austria	83	719	138	1 457	52	638
	Slovakia	...	...	-	-	79	613
	France	37	637	55	452	42	536
	Other countries	616	3 659	956	5 295	516	3 235
	Total	34 889	161 826	49 883	220 330	51 816	265 108
76.05	Aluminum wire						
	United States	14 464	48 694	8 544	35 845	4 785	19 569
	Netherlands	456	1 148	678	1 631	441	1 880
	Brazil	78	171	815	2 004	150	630
	United Kingdom	93	204	246	586	124	514
	Canada	13	64	230	744	109	438
	China	60	289	100	419	119	421
	Spain	86	250	212	593	95	411
	Switzerland	1	1	48	237	46	221
	Bahrain	50	157	60	176	63	220
	South Korea	19	86	22	102	29	115
	Other countries	35	170	62	224	36	129
	Total	15 355	51 234	11 017	42 561	5 997	24 548
76.06	Aluminum plates, sheets and strip, of a thickness exceeding 0.2 mm						
	United States	260 720	871 368	306 535	1 059 591	315 124	1 152 528
	China	5 466	18 407	19 423	60 065	24 171	82 569
	Germany	5 844	28 541	7 994	33 384	10 250	43 954
	Indonesia	1 801	5 524	6 123	19 697	5 815	20 393
	Greece	3 258	11 533	4 744	17 414	3 328	13 170
	South Africa	4 074	12 812	3 892	13 615	3 179	12 430
	Sweden	1 728	5 678	1 709	6 149	2 472	9 705
	Austria	1 159	5 501	2 182	9 162	1 924	9 091
	Brazil	1 315	3 974	1 301	4 255	1 478	5 235
	Canada	556	2 739	660	3 302	804	3 951

	Romania	486	2 136	644	2 643	873	3 587
	Turkey	1 069	2 754	1 906	6 209	990	3 496
	France	1 727	7 489	1 108	4 945	563	2 897
	Russia	1 100	4 839	642	3 091	469	2 471
	India	262	812	604	1 983	529	1 851
	Italy	181	1 088	164	1 024	338	1 818
	Egypt	637	2 066	566	1 885	466	1 643
	Thailand	503	1 742	379	1 207	440	1 477
	Poland	297	914	582	1 937	409	1 470
	Switzerland	593	3 443	478	2 211	262	1 306
	Hong Kong	441	1 702	441	1 583	331	1 238
	Spain	22	98	1 006	3 966	312	1 236
	Netherlands	197	1 195	103	674	187	1 057
	Other countries	1 178	5 362	998	4 359	1 205	5 169
	Total	294 614	1 001 717	364 184	1 264 351	375 919	1 383 742
76.07	Aluminum foil not exceeding 0.2 mm						
	United States	39 419	170 413	37 734	167 989	35 547	163 448
	China	4 102	16 141	7 606	27 587	6 100	22 840
	Germany	1 728	15 839	1 850	13 636	2 707	17 677
	Luxembourg	2 495	10 810	2 659	10 396	3 466	13 496
	Spain	1 431	5 293	1 344	5 151	1 712	6 913
	France	402	2 075	391	2 272	818	4 037
	Croatia	227	2 149	261	2 446	339	3 126
	Israel	56	1 007	86	907	102	1 126
	Switzerland	76	784	102	971	102	1 123
	United Kingdom	71	882	104	1 053	75	798
	South Africa	38	238	325	1 401	125	519
	Other countries	2 648	11 087	2 871	12 217	955	3 321
	Total	52 693	236 718	55 333	246 026	52 048	238 424
76.08	Aluminum tubes and pipes						
	United States	9 784	46 531	14 124	60 024	14 610	66 614
	China	1 100	4 476	1 657	6 293	1 145	5 068
	South Korea	784	2 459	644	2 179	766	2 718
	Malaysia	560	1 426	652	1 902	561	1 816
	Taiwan	53	878	67	1 422	107	1 239
	India	42	436	80	862	72	791
	Mexico	50	5 821	33	1 193	63	546
	Germany	21	487	36	684	23	488
	Indonesia	230	952	691	1 979	190	425
	Other countries	196	10 460	143	2 023	305	2 405
	Total	12 820	73 926	18 127	78 561	17 842	82 110
76.09	Aluminum tube or pipe fittings						
	United States	776	22 870	928	21 986	1 255	25 592
	China	332	2 319	526	4 520	764	6 937
	Mexico	11	890	6	508	19	1 378
	Taiwan	83	776	127	1 097	133	1 355
	Canada	10	654	6	338	18	562
	Other countries	310	2 194	169	2 469	100	1 887
	Total	1 522	29 703	1 762	30 918	2 289	37 711
		(n.a.)	(\$000)	(n.a.)	(\$000)	(n.a.)	(\$000)
76.10	Aluminum structures and parts of structures, aluminum plates, rods, profiles, tubes and the like, prepared for use in structures						
	United States	..	158 792	..	163 464	..	193 862
	China	..	63 058	..	70 677	..	45 576
	Netherlands	..	1 863	..	910	..	5 708
	Germany	..	2 466	..	2 878	..	3 418
	Mexico	..	907	..	2 739	..	2 049

	United Kingdom	..	610	..	636	..	1 802
	Canada	..	446	..	385	..	1 540
	Belgium	..	7	..	108	..	1 014
	India	..	555	..	757	..	854
	Italy	..	899	..	1 385	..	775
	South Korea	..	3 771	..	1 660	..	663
	Other countries	..	3 910	..	6 653	..	3 845
	Total	..	237 284	..	252 252	..	261 106
		(number)	(\$000)	(number)	(\$000)	(number)	(\$000)
76.11	Aluminum reservoirs, tanks, vats and similar containers, for any material, etc.						
	United States	2 872	1 287	2 664	954	22 314	15 074
	China	19	1	161	43	67	18
	Taiwan	1 471	17	2 433	24	550	17
	Canada	422	73	213	52	20	13
	Other countries	285	15	156	24	48	24
	Total	5 069	1 393	5 627	1 097	22 999	15 146
76.12	Aluminum casks, drums, cans, boxes and similar containers, for any material						
	United States	1 501 447 889	265 779	1 598 874 905	249 182	2 320 627 020	221 883
	France	35 546 331	6 087	54 968 348	6 683	35 256 381	6 587
	Finland	50 218 153	3 205	45 385 040	2 249	48 450 047	2 549
	Israel	10 021 162	1 365	15 676 469	2 035	18 903 145	2 449
	Switzerland	2 233 292	5 321	1 724 584	2 591	2 029 803	1 702
	China	3 436 971	4 718	2 639 259	1 507	2 489 940	1 494
	United Kingdom	1 390 736	384	7 544 053	1 179	6 781 148	1 152
	Other countries	13 172 410	3 698	15 780 002	3 524	15 767 299	4 152
	Total	1 617 466 944	290 557	1 742 592 660	268 950	2 450 304 783	241 968
76.13	Aluminum containers for compressed or liquefied gas						
	United States	311 442	17 737	187 128	18 846	268 659	21 408
	France	3 475	421	4 255	1 237	1 204	256
	Other countries	6 478	319	3 232	107	10 123	363
	Total	321 395	18 477	194 615	20 190	279 986	22 027
		(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
76.14	Stranded wire, cables, plaited bands and the like, of aluminum, not electrically insulated						
	United States	4 014	12 284	4 550	16 501	9 443	36 345
	China	2	20	9	152	159	456
	Turkey	...	...	—	—	17	76
	Other countries	5	41	17	171	10	64
	Total	4 021	12 345	4 576	16 824	9 629	36 941
		(n.a.)	(\$000)	(n.a.)	(\$000)	(n.a.)	(\$000)
76.15	Table, kitchen or other household articles and parts thereof, of aluminum						
	China	..	67 108	..	102 215	..	81 796
	United States	..	36 284	..	32 422	..	35 186
	Thailand	..	3 573	..	2 536	..	3 541
	India	..	1 852	..	2 264	..	2 561
	Italy	..	3 481	..	2 162	..	1 684
	France	..	6 718	..	3 587	..	1 627
	South Korea	..	1 202	..	1 692	..	1 321
	Indonesia	..	1 538	..	1 128	..	979
	Germany	..	1 131	..	978	..	886
	Taiwan	..	645	..	557	..	648
	Other countries	..	4 223	..	2 888	..	1 966
	Total	..	127 755	..	152 429	..	132 195
76.16	Other articles of aluminum						

United States	..	194 895	..	184 792	..	186 679
China	..	46 889	..	54 860	..	57 350
Mexico	..	10 516	..	10 262	..	11 500
Germany	..	7 339	..	6 579	..	6 814
Italy	..	2 890	..	3 751	..	4 656
Taiwan	..	2 943	..	3 559	..	4 291
Canada	..	3 483	..	3 593	..	4 173
France	..	3 022	..	3 607	..	2 975
United Kingdom	..	2 504	..	2 957	..	2 765
India	..	1 835	..	2 035	..	1 873
Vietnam	..	1 387	..	400	..	1 852
Switzerland	..	310	..	233	..	1 170
South Korea	..	852	..	1 025	..	1 050
Japan	..	1 050	..	725	..	920
Hong Kong	..	2 783	..	1 439	..	711
Malaysia	..	2 445	..	1 647	..	592
Russia	..	27	..	22	..	580
Spain	..	797	..	691	..	574
Other countries	..	5 549	..	6 436	..	4 986
Total	..	291 516	..	288 613	..	295 511
Total imports	..	4 357 499	..	4 919 760	..	5 323 937

Sources: Natural Resources Canada; Statistics Canada.

– Nil; .. Not available; ... Amount too small to be expressed; mm Millimetres; n.a. Not applicable; (p) Preliminary.

Note: Numbers may not add to totals due to rounding. Harmonized System (HS) code descriptions in this table may have been abbreviated. For detailed HS code descriptions related to this commodity, please refer to the corresponding tariffs table.

TABLE 2. CANADIAN ALUMINUM SMELTER CAPACITY, 2011

Smelter	Location	Company	Capacity
			(000 t/y)
Alma	Quebec	Rio Tinto Alcan	438
Arvida (Jonquière)	Quebec	Rio Tinto Alcan	176
Baie-Comeau	Quebec	Alcoa	400
Bécancour	Quebec	Aluminerie de Bécancour Inc. (A.B.I.)	420
Deschambault	Quebec	Alcoa	260
Grande-Baie	Quebec	Rio Tinto Alcan	218
Kitimat (1)	British Columbia	Rio Tinto Alcan	215
Laterrière	Quebec	Rio Tinto Alcan	238
Sept-Îles	Quebec	Aluminerie Alouette	590
Shawinigan	Quebec	Rio Tinto Alcan	100
Total			3 055

Sources: Natural Resources Canada; Aluminum Association of Canada; company and media reports.

(1) Rio Tinto Alcan's reported 282 000-t/y capacity, less 67 000 t/y from the two potlines closed in 2010.

TABLE 3. WORLD MINE PRODUCTION OF BAUXITE, 2007-11

Country	World Rank in 2011	2007	2008	2009	2010	2011
		(000 tonnes)				
Australia	1	62 428.0	64 038.0	(r) 66 168.0	(r) 68 353.0	69 977.0
Bosnia and Herzegovina	15	866.9	1 018.3	555.8	827.9	712.0
Brazil	4	25 460.7	28 097.5	26 074.4	(r) 32 028.0	33 694.7
China	3	20 446.0	25 176.9	29 213.1	(r) 36 837.2	(e) 37 000.0
Croatia	28	0.1	0.5	0.5	–	1.8
France	n.a.	160.9	–	–	–	–
Ghana	17	748.2	796.0	440.0	512.2	400.1
Greece	12	2 125.9	2 176.3	2 091.0	1 902.0	2 324.0
Guinea	5	18 519.0	17 682.3	(r) 15 313.1	(r) 17 633.4	17 614.8
Guyana	13	2 242.9	2 092.2	1 484.9	(r) 1 010.0	1 827.5
Hungary	19	546.4	511.0	317.0	365.0	277.8
India	6	20 343.0	19 737.0	14 246.0	(r) 12 662.0	(e) 13 000.0
Indonesia	2	16 000.0	18 000.0	15 000.0	27 000.0	41 000.0
Iran	16	520.0	520.0	(r) 520.0	(r) 681.2	(e) 700.0
Iraq	29	–	4.9	0.3	(e) –	–
Jamaica	7	14 567.7	14 636.1	7 817.5	8 539.9	10 188.9
Kazakhstan	9	4 962.6	5 160.0	5 130.0	(r) 5 310.4	5 495.3
Malaysia	20	156.8	295.2	263.4	124.3	188.1
Mexico	25	–	–	20.0	21.3	14.4
Montenegro	22	667.1	671.8	45.8	61.2	100.0
Mozambique	26	8.6	5.4	3.6	8.6	10.4
Pakistan	27	18.1	(r) 35.8	(r) 15.6	(r) 11.1	9.0
Russia	8	6 053.9	5 675.0	5 775.0	(r) 5 475.0	5 887.5
Sierra Leone	14	1 169.0	954.4	742.8	1 089.1	1 457.5
Suriname	10	5 273.2	5 333.0	3 388.4	(r) 3 096.7	3 236.1
Tanzania	21	5.0	20.6	122.9	130.0	(e) 130.0
Turkey	18	863.4	900.0	406.7	855.0	(e) 400.0
United States (1)	24	141.9	98.8	30.2	59.1	63.1
Venezuela	11	5 323.3	4 192.0	3 610.9	3 126.2	2 454.8
Vietnam	23	80.0	80.0	80.0	80.0	(e) 80.0
Total world	n.a.	209 697.7	(r) 217 909.0	(r) 198 880.0	(r) 227 981.8	248 244.8
% change from previous year	n.a.	9.0	3.9	-8.7	14.6	8.9

Source: International Consultative Group on Nonferrous Metals Statistics.

– Nil; (e) Estimated; n.a. Not applicable; (r) Revised.

(1) Data are for Alabama only.

Note: Numbers may not add to totals due to rounding.

TABLE 4. WORLD PRODUCTION OF ALUMINA (Al₂O₃ CONTENT OR CALCINED EQUIVALENT), 2007-11

Country	World Rank in 2011	2007	2008	2009	2010	2011
		(000 tonnes)				
Australia	2	18 884.0	19 446.0	19 939.0	(r) 19 991.0	19 339.0
Azerbaijan	25	184.5	164.9	9.6	–	6.2
Bosnia and Herzegovina	22	303.8	294.5	191.8	269.4	261.9
Brazil	3	7 077.6	7 822.3	8 625.1	(r) 9 433.4	10 182.0
Canada	11	1 454.4	1 491.5	1 232.6	1 416.6	1 473.3
China	1	19 453.0	22 788.1	23 793.0	28 939.0	29 064.9
France	20	600.0	630.0	348.0	481.0	470.0
Germany	15	(r) 1 000.0	(r) 1 000.0	(r) 1 000.0	(r) 1 000.0	(e) 1 000.0
Greece	16	788.9	771.8	718.8	720.0	809.7
Guinea	17	526.0	593.0	530.0	597.0	574.0
Hungary	23	301.0	299.0	185.0	214.0	250.0
India	5	3 208.0	3 000.0	3 000.0	3 000.0	3 968.0
Iran	21	194.0	200.0	200.0	300.0	398.8
Ireland	8	1 803.0	1 890.0	1 245.0	1 864.0	1 927.0
Italy	26	1 100.0	1 045.0	92.0	–	–
Jamaica	7	3 940.6	3 995.4	1 773.6	1 590.7	1 959.9
Japan	18	650.0	600.0	550.0	550.0	(e) 550.0
Kazakhstan	9	1 537.0	1 600.0	1 608.0	1 639.0	1 670.0
Montenegro	26	240.2	220.4	58.5	–	–
Romania	19	23.0	–	44.0	414.0	484.0
Russia	6	3 332.3	3 112.0	2 794.0	2 857.0	2 825.0
Spain	13	1 300.0	1 300.0	1 300.0	1 300.0	(e) 1 300.0
Suriname	12	2 178.5	2 154.0	1 536.2	(r) 1 486.4	1 421.5
Turkey	24	163.4	(r) 160.0	(r) 100.0	(r) 160.0	(e) 100.0
Ukraine	10	1 655.7	1 673.0	1 524.0	1 534.0	1 601.0
United States	4	4 236.0	4 298.0	3 064.0	3 950.0	4 360.0
Venezuela	14	1 751.0	1 591.3	1 376.0	1 244.0	1 222.2
Total world	n.a.	(r) 77 885.9	(r) 82 140.2	(r) 76 838.2	(r) 84 950.5	87 278.4
% change from previous year	n.a.	7.0	5.5	-6.5	10.6	2.7

Source: International Consultative Group on Nonferrous Metals Statistics.

– Nil; (e) Estimated; n.a. Not applicable; (r) Revised.

Note: Numbers may not add to totals due to rounding.

TABLE 5. WORLD PRODUCTION OF PRIMARY ALUMINUM, 2007-11

Country	World Rank in 2011	2007	2008	2009	2010	2011
		(000 tonnes)				
Argentina	16	287.0	399.7	412.7	416.5	416.5
Australia	6	1 957.0	1 974.0	1 943.0	1 928.0	1 945.0
Azerbaijan	42	39.2	61.6	10.1	(r) 0.3	6.8
Bahrain	10	865.9	871.7	(r) 847.7	(r) 850.7	881.3
Bosnia and Herzegovina	33	121.8	123.0	96.0	118.0	130.9
Brazil	9	1 654.8	1 661.1	1 535.9	1 536.2	1 440.4
Cameroon	37	87.0	89.7	79.4	76.0	69.0
Canada	3	3 082.6	3 120.1	3 030.3	2 963.2	2 988.0
China	1	12 558.6	13 178.2	12 890.5	(r) 16 244.1	18 061.7
Egypt	23	258.3	259.2	245.4	281.1	(e) 300.0
France	20	427.8	389.0	345.0	356.0	334.0
Germany	15	551.0	605.9	291.8	402.5	432.5
Ghana	39	12.9	9.3	–	–	35.0
Greece	30	168.0	162.3	134.7	139.8	167.5

Iceland	12	446.3	761.2	804.6	(r) 825.8	780.9
India	8	1 221.8	1 307.5	1 478.6	1 609.9	1 659.7
Indonesia	28	242.1	242.5	257.6	253.3	246.3
Iran	22	203.6	241.3	281.3	(r) 282.0	321.9
Italy	32	179.5	186.4	165.8	129.5	141.9
Japan	43	6.0	6.6	5.1	4.7	4.7
Kazakhstan	27	12.0	106.0	128.0	227.0	248.8
Montenegro	35	135.2	111.5	64.0	82.0	92.5
Mozambique	13	564.0	536.0	545.0	557.0	562.0
Netherlands	23	296.9	321.2	306.0	300.0	(e) 300.0
New Zealand	19	353.0	315.5	271.0	344.0	357.0
Nigeria	40	–	10.6	12.9	21.2	17.6
Norway	5	1 362.0	1 358.8	(r) 1 090.0	(r) 1 400.0	1 982.0
Oman	17	–	49.0	351.0	367.0	373.0
Poland	44	54.5	47.5	–	–	–
Qatar	14	–	–	10.0	190.0	480.0
Romania	26	286.3	289.7	229.0	241.0	261.0
Russia	2	3 955.4	4 190.0	3 815.0	3 947.0	3 992.0
Slovakia	31	160.5	163.0	149.6	163.0	162.8
Slovenia	36	111.0	83.3	35.0	40.2	75.3
South Africa	11	899.0	811.0	809.0	(r) 811.5	808.4
Spain	18	405.1	405.8	334.6	335.0	(e) 365.0
Sweden	34	99.8	81.9	69.7	93.0	111.0
Tajikistan	25	419.1	399.5	359.4	348.9	277.6
Turkey	38	63.4	61.1	30.0	(r) 54.1	56.4
Ukraine	41	113.4	88.8	45.9	25.0	7.2
United Arab Emirates	7	889.5	891.7	1 009.8	1 400.0	(e) 1 750.0
United Kingdom	29	364.6	326.9	252.0	186.0	213.0
United States	4	2 553.9	2 658.3	1 727.2	1 727.2	1 983.5
Venezuela	21	615.7	607.8	561.1	353.7	330.0
Total world	n.a.	38 085.5	39 565.2	(r) 37 060.7	(r) 41 631.4	45 170.1
% change from previous year	n.a.	12.3	3.9	6.3	12.3	8.5

Source: International Consultative Group on Nonferrous Metals Statistics.

– Nil; (e) Estimated; n.a. Not applicable; (r) Revised.

Note: Numbers may not add to totals due to rounding.

TABLE 6. PRIMARY ALUMINUM CASH PRICE, LME, 2009-11

Price	2009		2010		2011	
	(US\$/t)	(US\$/lb)	(US\$/t)	(US\$/lb)	(US\$/t)	(US\$/lb)
Year average	1 668	0.76	2 173	0.99	2 398	1.09
Start of year	1 492	0.68	2 226	1.01	2 472	1.12
End of year	2 208	1.00	2 461	1.12	1 971	0.89
Year high	2 266	1.03	2 461	1.12	2 772	1.26
Year low	1 254	0.57	1 828	0.83	1 945	0.88

Source: MetalPrices.com.

LME London Metal Exchange.

**TABLE 7. AVERAGE ALUMINUM PRICES,
2002-11**

2002-11

Year	Month	LME Cash Settlement (1)	
		(US\$/t)	(US\$/lb)
ANNUAL AVERAGES (2)			
2002	n. a.	1 350	0.61
2003	n. a.	1 431	0.65
2004	n. a.	1 716	0.78
2005	n. a.	1 899	0.86
2006	n. a.	2 570	1.17
2007	n. a.	2 638	1.20
2008	n. a.	2 671	1.21
2009	n. a.	1 618	0.73
2010	n. a.	2 173	0.99
2011	n. a.	2 398	1.09
MONTHLY AVERAGES			
2010	January	2 235	1.01
	February	2 049	0.93
	March	2 206	1.00
	April	2 317	1.05
	May	2 041	0.93
	June	1 931	0.88
	July	1 988	0.90
	August	2 118	0.96
	September	2 162	0.98
	October	2 347	1.06
	November	2 333	1.06
	December	2 351	1.07
2011	January	2 440	1.11
	February	2 508	1.14
	March	2 553	1.16
	April	2 663	1.21
	May	2 592	1.18
	June	2 555	1.16
	July	2 512	1.14
	August	2 393	1.09
	September	2 297	1.04
	October	2 172	0.99
	November	2 074	0.94
	December	2 022	0.92

Sources: Natural Resources Canada; *Metal Prices*.

LME London Metal Exchange; n.a. Not applicable.

(1) Highest grade sold. (2) Primary ingots, minimum 99.7% purity.

**TABLE 8. AVERAGE ALUMINUM
ALLOY PRICES, 2002-11**

Year	Month	LME Alloy Cash Settlement (1)	
		(US\$/t)	(US\$/lb)
ANNUAL AVERAGES			
2002	n. a.	1 234	0.56
2003	n. a.	1 400	0.63
2004	n. a.	1 559	0.71
2005	n. a.	1 646	0.75
2006	n. a.	2 290	1.04
2007	n. a.	2 193	0.99
2008	n. a.	2 255	1.02
2009	n. a.	1 457	0.66
2010	n. a.	2 076	0.94
2011	n. a.	2 263	1.03
MONTHLY AVERAGES			
2010	January	1 965	0.89
	February	1 893	0.86
	March	2 016	0.91
	April	2 168	0.98
	May	1 916	0.87
	June	1 842	0.84
	July	1 992	0.90
	August	2 197	1.00
	September	2 217	1.01
	October	2 214	1.00
	November	2 233	1.01
	December	2 257	1.02
2011	January	2 278	1.03
	February	2 341	1.06
	March	2 386	1.08
	April	2 405	1.09
	May	2 410	1.09
	June	2 347	1.06
	July	2 319	1.05
	August	2 290	1.04
	September	2 286	1.04
	October	2 166	0.98
	November	2 006	0.91
	December	1 921	0.87

Sources: Natural Resources Canada; *Metal Prices*.

LME London Metal Exchange; n.a. Not applicable.

(1) Alloy ingots, meeting LME specifications.