

Aluminum

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(Notes: General information on aluminum is included in
the 2003 version. It is also available on the Internet at
www.nrcan.gc.ca/mms/scho-ecol/main_e.htm#aluminum.
Abbreviations of company names used in this paper are
listed in Table 10 along with known Internet addresses of
those companies.)

Canada's rank in world production
of primary aluminum: Third
Installed capacity (December 2004): 2.8 Mt/y

2004	Amount	Value (p)
Primary aluminum production	2.59 Mt	\$5.8 billion
Exports (unwrought)	2.0 Mt	\$4.9 billion
Exports (HS Chapter 76) ^a	n.a.	\$8.8 billion

n.a. Not applicable; (p) Preliminary.

^a In the classification of export statistics, Harmonized System Chapter 76 includes codes for identifiable aluminum products, including primary metal, semi-fabricated products, and products made of aluminum. See Table 1 for a listing of the main codes. Export data can be obtained at http://strategis.gc.ca/sc_mrkti/tdst/engdoc/tr_homep.html or from Statistics Canada at www.statcan.ca/trade/scripts/trade_search.cgi.

PRIMARY ALUMINUM CASH PRICE, LME, 2002-04

	2002	2003	2004
	(US\$/t)		
Year average	1 349 (61¢/lb)	1 432 (65¢/lb)	1 717 (78¢/lb)
Start of year	1 324 (60¢/lb)	1 341 (61¢/lb)	1 601 (73¢/lb)
End of year	1 345 (61¢/lb)	1 592 (72¢/lb)	1 964 (89¢/lb)
Year high	1 438 (65¢/lb)	1 592 (72¢/lb)	1 964 (89¢/lb)
Year low	1 276 (58¢/lb)	1 315 (60¢/lb)	1 575 (71¢/lb)

World production of primary and recycled aluminum increased in 2004 to an estimated total of 37.2 Mt, compared to the past record of 35.6 Mt in 2003. Of this total, 29.6 Mt was primary metal, compared to 27.9 Mt in 2003.

Prices in the spot alumina market were strong in 2004 as smelter expansions, particularly in China, increased demand for alumina. *Metal Bulletin* has reported that spot prices for metallurgical-grade alumina started the year at US\$330-\$350/t and rose to US\$470-\$490/t in April, falling thereafter to US\$310-\$330/t in August. Prices rose to US\$390-\$420/t at the end of the year and have risen to US\$440-\$460/t in early 2005.

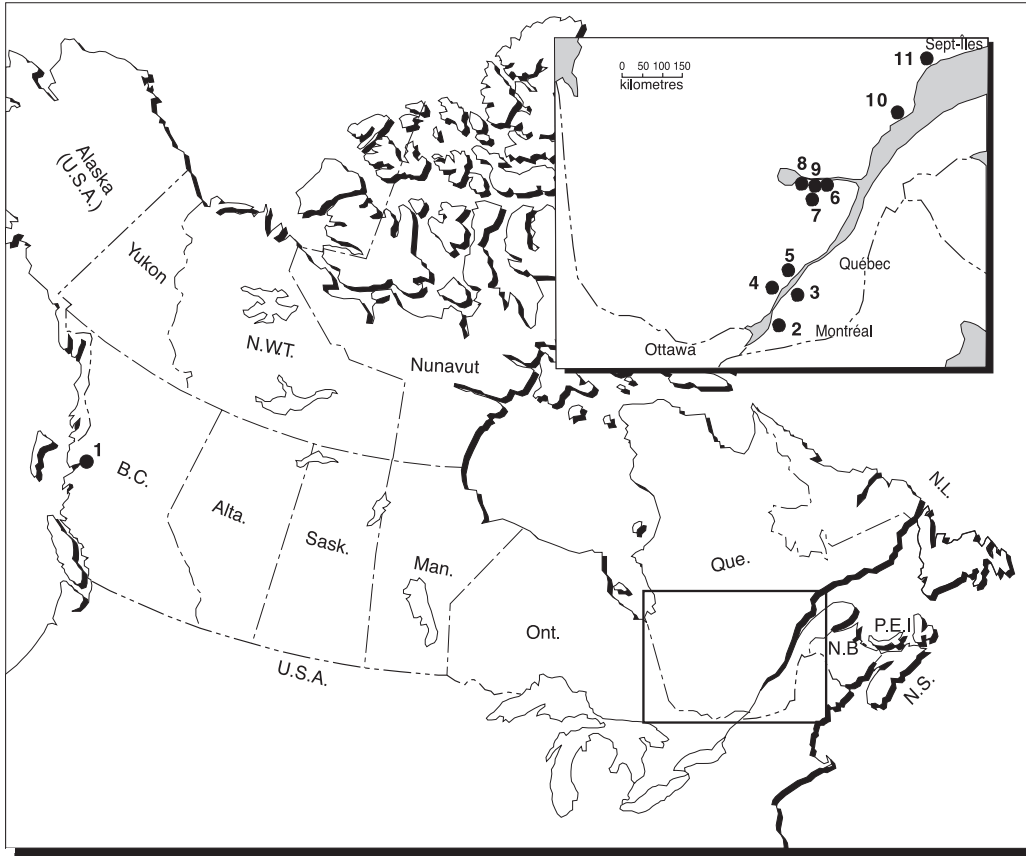
CANADIAN DEVELOPMENTS

Production of primary aluminum in Canada declined 7.2% to 2.59 Mt in 2004, compared with 2.79 Mt in 2003, ranking Canada third after China (7.7 Mt) and Russia (3.6 Mt) in terms of world primary production. The decline was due to lost production at Aluminerie Bécancour and the closure of Söderberg capacity at Alcan's Jonquière smelter. Monthly Canadian production statistics can be obtained on Natural Resources Canada's Internet site at http://mmsd1.mms.nrcan.gc.ca/mmsd/data/default_e.asp.

The value of Canadian primary aluminum production in 2004 is estimated at \$5.8 billion, up slightly (4%) from \$5.6 billion in 2003. The increase in value resulted from the increase in metal prices over the year, countering a decline in production and an increase in the value of the Canadian dollar relative to the U.S. dollar.

Canada is the second largest aluminum-exporting country in the world after Russia. Canadian exports of ingot in 2004 decreased in quantity to 1.99 Mt valued at \$4.860 billion (US\$3.73 billion), compared to 2.23 Mt valued at \$4.08 billion (US\$3.43 billion) in 2003. Of this amount, unwrought exports to the United States totaled 1.68 Mt valued at \$4.08 billion (US\$3.14 billion) (see summary above and Table 1).

Figure 1
Aluminum Smelters, 2004



SMELTER	COMPANY	CAPACITY (t/y)
1. Kitimat	Alcan	277 000
2. Beauharnois	Alcan	51 000
3. Bécancour	A.B.I.	409 000
4. Shawinigan	Alcan	93 000
5. Luralco Deschambault	Alcoa Luralco	254 000
6. Grande-Baie	Alcan	196 000
7. Laterrière	Alcan	219 000
8. Alma	Alcan	405 000
9. Arvida, Jonquière	Alcan	163 000
10. Baie-Comeau	Canadian Reynolds Metals (Alcoa)	438 000
11. Alouette	Alouette	245 000 ¹
		2 750 000

¹ Capacity increasing to 550 000 t/y in 2005. New potline started production in January 2005 with full production to be reached in mid-2005.

Reported Canadian use¹ of aluminum metal at the first processing stage, including the use of recycled aluminum, was 1 007 711 t in 2003, down slightly (1%) from 1 019 713 t in 2002 (Table 3a).

Aluminerie Alouette Inc. is nearing completion of a \$1.4 billion expansion of its smelter capacity from 245 000 t/y to 550 000 t/y. Preliminary work began in late 2002 and the company started placing the expansion into production in January 2005. Production at full capacity is to be reached later in 2005 and, at that time, this smelter will be the largest in the Americas. In addition to the 2500 construction jobs, the expansion will create 340 permanent new jobs at the smelter and 1500 indirect jobs in other areas of the province. Partners in this smelter are Alcan (40%), Aluminium Austria Metall Québec (20%), Hydro Aluminium (20%), Société générale de financement du Québec (SGF) (13.33%), and Marubeni Québec Inc. (6.66%). Further details are available on the company's web site at www.alouette.qc.ca.

Alcan announced in September the filing of a prospectus and registration statements for the spin-off of its new rolled products company, Novelis, the world's largest aluminum rolled products company with pro-forma 2003 revenue of \$6.2 billion. The company spin-off is Alcan's answer to conditions placed on it by regulatory bodies in the European Union and the United States regarding its takeover of Pechiney to divest assets in Europe and the United States. Alcan received regulatory approvals on the spin-off late in 2004 and Novelis officially started operations on January 1, 2005. Alcan has a web site at www.alcan.com and Novelis has one at www.novelis.com.

Alcan announced the closure of the four Söderberg potlines at the Jonquièrre smelter in early 2004, affecting 90 000 t/y of production capacity. The remaining 163 000 t/y of prebake capacity at the smelter remains in operation.

Alcan's 277 000-t/y smelter at Kitimat, British Columbia, continued operating at a reduced rate of 240 000 t/y. Production rates had been reduced in 2001 due to low water levels in the Nechako Reservoir and had increased to the current rate in mid-2002.

Alcoa has participated in discussions on power with the Quebec government and Hydro-Québec over the past two years to obtain power to allow it to upgrade the Baie Comeau and Lauralco Deschambault smelters. Alcoa has not yet announced its intentions regarding the doubling of the Deschambault smelter, but did announce in June that it would not implement its proposed plan to modernize its Baie Comeau smelter. Alcoa has a web site at www.alcoa.com.

At Aluminerie de Bécancour, with a capacity of 409 000 t/y (owned by Alcoa [74.95%] and Alcan [25.05%] after its takeover of Pechiney), employees represented by the Syndicat des Employées de l'Aluminerie de Bécancour, United Steelworkers' Local 9700, started a strike on July 7. Alcoa subsequently curtailed production from two of the three potlines in early July. The Union and Alcoa reached agreement in mid-November and the smelter will be restarted to reach full production by April 2005.

Both Alcan and Alcoa are included in the Dow Jones Sustainability Index. Individually, they and their regional operations organize and participate in various social, community and environmental initiatives in Canada and around the world. Refer to the company web sites for further details.

The Aluminium Association of Canada links the Canadian aluminum industry, aluminum users, the public and government. Further information and links to web sites of Canadian primary aluminum producers can be found on the Association's site at <http://aia.aluminium.qc.ca>.

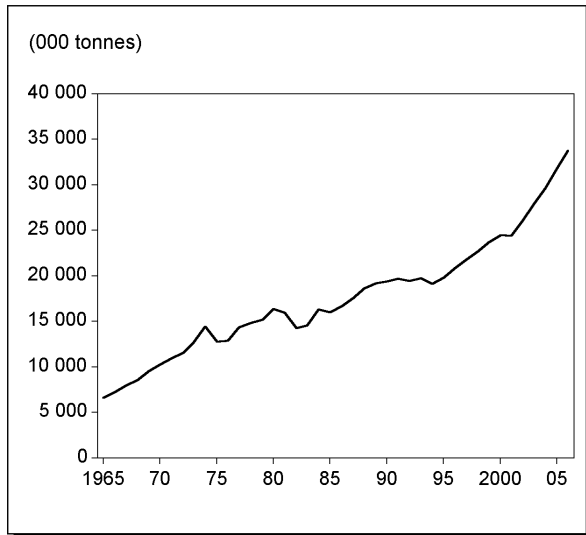
CANADIAN OUTLOOK

Canadian installed capacity for the production of primary aluminum is now 2.8 Mt/y and, with the completion and ramp-up in production from the expanded Alouette smelter at Sept-Îles, installed capacity will reach 3.06 Mt/y in early 2005. Canada is expected to produce approximately 2.9 Mt of primary aluminum in 2005 and 3.0 Mt in 2006.

On a longer-term basis, potential expansions at Alcan's Alma smelter and at Alcoa's Deschambault smelters may counter the expected closures of Canadian Söderberg technology that are expected to occur in the next decade. However, should these expansions/modernizations not occur, it is likely that Canadian production will fall over the next 5-10 years.

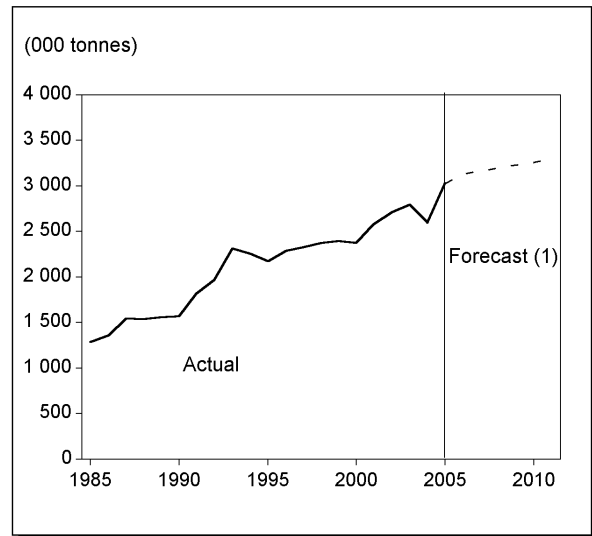
The Aluminium Association has published several informative brochures over the past year (for further details visit www.aac.aluminium.qc.ca). In one, *Aluminium and Electricity*, it references the average price of power in the Western World is C2.35¢/kWh while the "L" rate - the rate charged to large consumers of power in Quebec - is C3.60¢/kWh. In addition, in Canada at this time, there does not appear to be a surplus of electricity in sufficient quantities to support the expansion of aluminum production. As a result, it is likely that, for the short-term future, there will be no further expansions in the aluminum sector and, when metal prices fall from current levels in Canadian dollar terms, the timing for closures of older smelters may be advanced.

Figure 2
World Total Primary Aluminum Production, 1965-2006 (f)



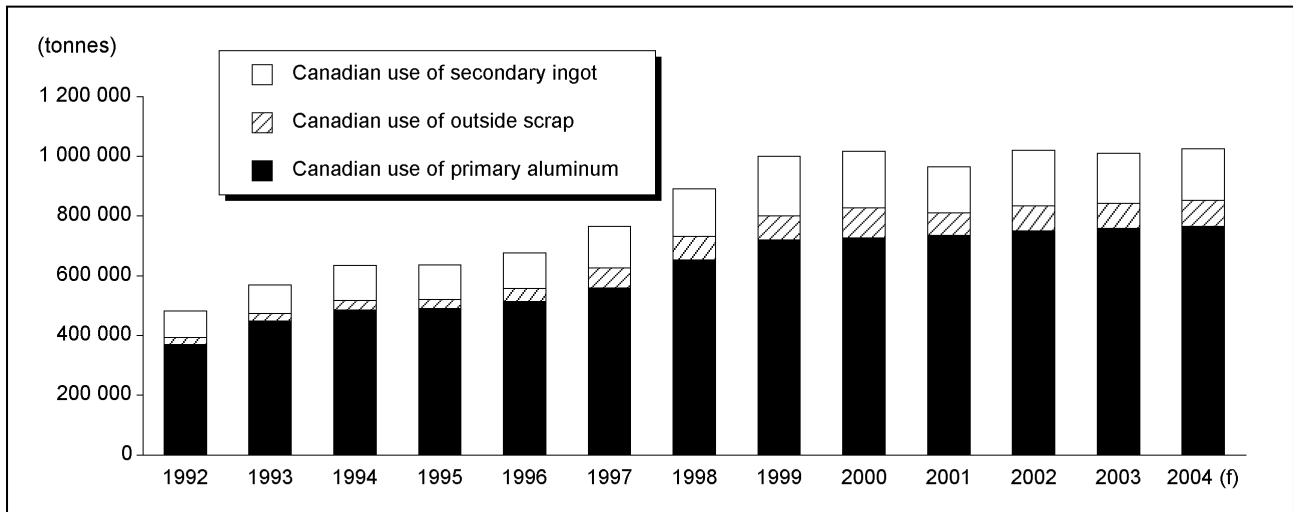
Source: International Consultative Group on Nonferrous Metals Statistics.
 (f) Author estimates and forecasts for 2004-06.

Figure 3
Canadian Primary Aluminum Production, 1985-2011



Source: Natural Resources Canada.
 (1) No Söderberg closures included.

Figure 4
Reported Canadian Use of Aluminum, 1992-2004



Source: Natural Resources Canada Annual Survey of Aluminum Metal Use in Canadian Establishments (176 aluminum-using companies in 2003).

(f) Forecast.

Notes: Export figures are obtained from Canadian government trade data. Data on metal use are obtained from responses to questionnaires sent to aluminum-using companies. Companies surveyed include primary metal producing, recycling, casting, rolling, extruding and foundry operations.

PRODUCTION, USE AND INVENTORY

On a longer-term basis, global primary aluminum production has been growing at about 2-3% per year (Figure 2); however, growth rates over the last decade have been much higher.

World production of primary aluminum increased 7.2% to 27.9 Mt in 2003 from a revised 26.0 Mt in 2002 (Table 8). World production is estimated to have risen by a further 6% to 29.6 Mt in 2004 and is expected to rise by a further 7% to 31.7 Mt in 2005.

The International Consultative Group on Nonferrous Metal Statistics reported that total world use of primary aluminum was 27.5 Mt in 2003, 8% higher than the revised figure of 25.4 Mt for 2002 (Table 9).

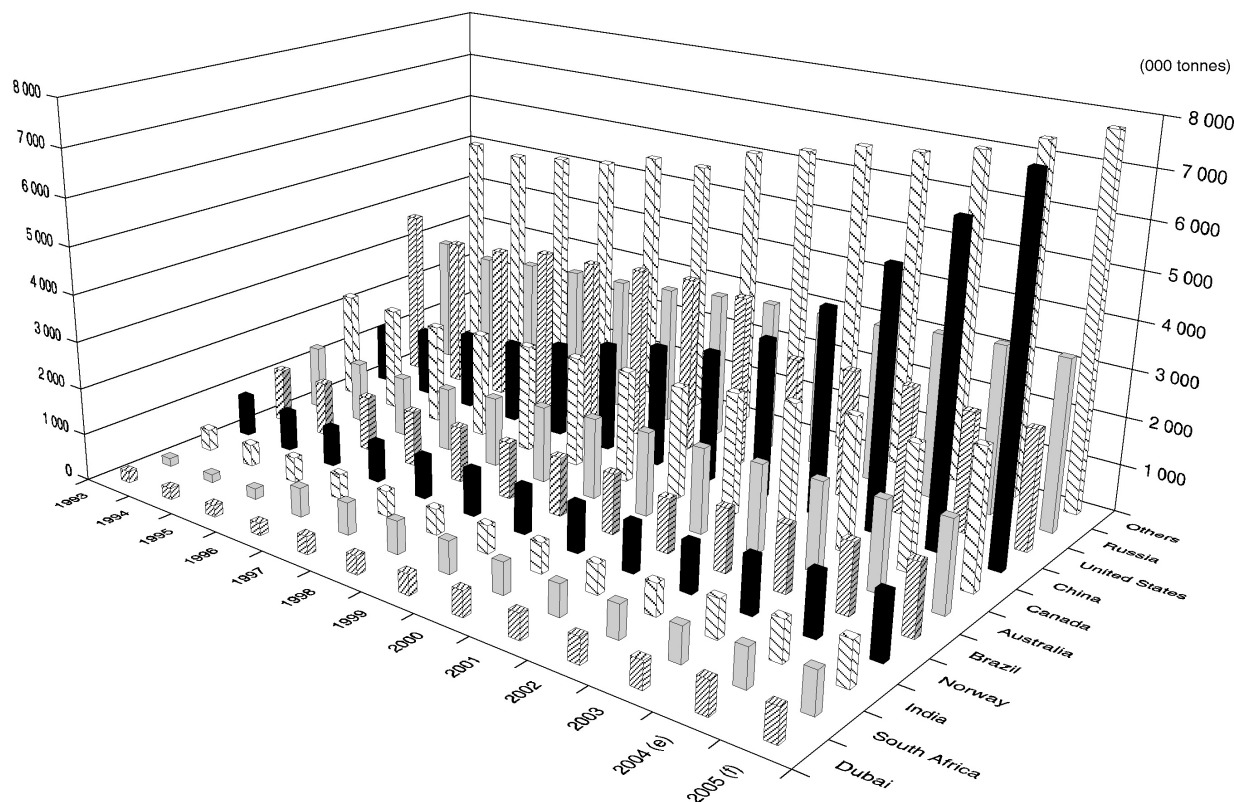
The World Bureau of Metal Statistics (WBMS) reported that, in 2004, the use of primary aluminum was 29.5 Mt.

Asia was the region in the world with the largest aluminum use, accounting for over 40% of total world refined aluminum use. Europe accounts for almost 30% and North America accounts for about 25%. (The WBMS has an Internet site at www.world-bureau.com.)

Production by International Aluminium Institute (IAI) members reached 22.6 Mt in 2004 (about 75% of world primary production). Members' primary aluminum production rate increased marginally during the year to 61 900 t/d in December 2004 from 61 700 t/d in December 2003. The average production rate for all of 2004 was 61 700 t/d, compared with an average of 60 100 t/d in 2003 (an increase of 2.7%). Members' aluminum production capacity increased from a revised 23.819 Mt/y at the end of 2003 to 24.571 Mt/y in December 2004. (The IAI has an Internet site at www.world-aluminium.org.)

IAI total inventories started the year at 3.0 Mt and remained relatively constant during the year, rising in

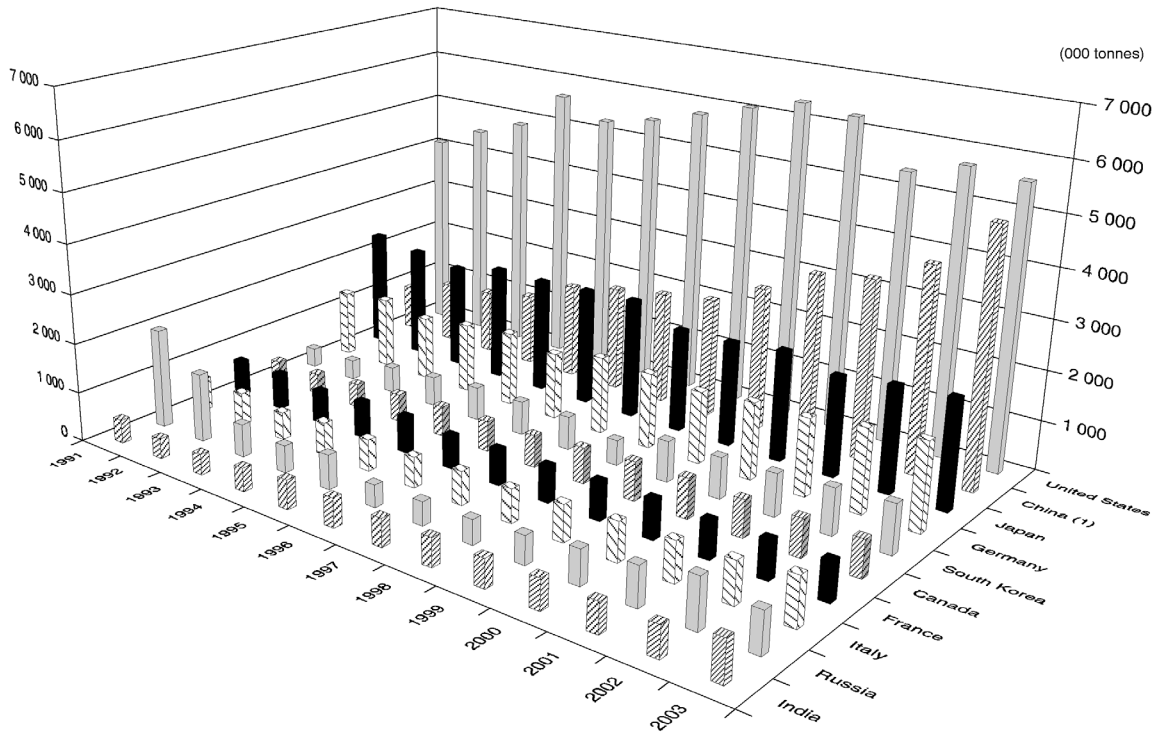
Figure 5
Primary Aluminum Production, Top Ten Producers, 1993-2005
 Total Estimated Production in 2004 = 29.6 Mt; 2005 forecast = 31.7 Mt



Source: International Consultative Group on Nonferrous Metals Statistic.

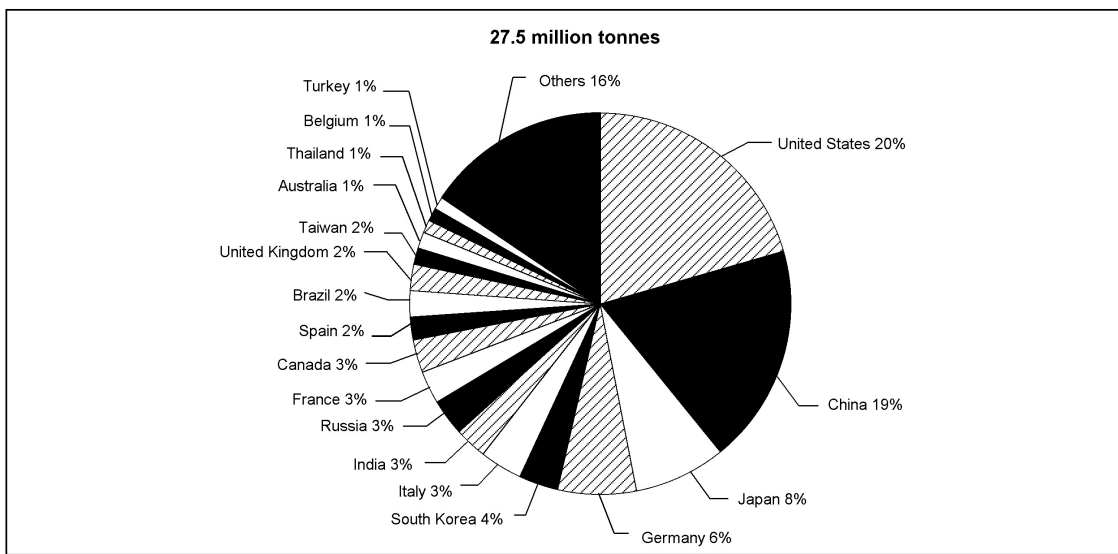
(e) Estimated; (f) Author's estimates and forecast based on published reports, company reports, journals and Internet sources.

Figure 6
Apparent Use of Primary Aluminum, 1991-2003
 Top 10 Countries = 72% of Total



Source: International Consultative Group on Nonferrous Metals Statistics.
 (1) Starting in 1997, Hong Kong is included with China.

Figure 7
Total Apparent Use of Primary Aluminum by Country, 2003



Source: International Consultative Group on Nonferrous Metals Statistics.

December to end the year at 3.2 Mt. In general, LME primary aluminum inventories decreased throughout 2004. High-grade inventories started the year at 1.4 Mt and, after dipping to 680 000 t in October, increased slightly to end the year at 695 000 t. Similarly, aluminum alloy stocks in London Metal Exchange (LME) warehouses in early January 2004 were approximately 63 000 t and declined during the year to 40 000 t at the end of December.

Combined IAI members' and LME aluminum inventories totaled 4.0 Mt at the end of 2004. This represents approximately 50 days of global supply/use.

The IAI also reported that members' refined² alumina production capacity increased from a revised 55.456 Mt/y in December 2003 to 56.784 Mt/y in December 2004, while alumina production also rose from a revised 52.591 Mt in 2003 to 54.872 Mt in 2004.

WORLD DEVELOPMENTS

China continues to expand production capacity. It became the largest producer of primary aluminum in the world in 2001 and has increased production by over 20% in each of the last four years. In 2004 it produced 6.7 Mt and is expected to increase production an additional 17% in 2005 to above 7.7 Mt (Figure 5, Table 8). This rapid increase in production has maintained upward pressure on alumina prices globally and has helped increase power costs within China, helping to slow production growth.

The Chinese government continues to place pressure on older and smaller smelters to close or modernize and has taken measures to restrain phenomenal growth rates in various industries, including aluminum. Measures taken to curb growth rates include: policies to close older Söderberg smelters, increased charges for power, reduction of the Value Added Tax (VAT) rebate on primary aluminum exports from 15% to 8% in 2004 and then a replacement of the refund with a 5% export tax in January 2005, and cutbacks on alumina supplies to smelters that do not follow government policy. In addition, higher raw materials prices, increased power costs and power shortages have been reported and are expected to slow the growth rate from the rates seen in 2001-04. High spot alumina prices have also likely helped to reduce the growth rate of expansion, and the continued high prices, coupled with government initiatives, are expected to further delay some projects in China. However, once the price of alumina falls and once planned expansions and new refineries come on line in the next several years, the expansion of Chinese primary aluminum production may well continue.

In the northwestern United States, questions about power availability and cost continue to be issues for smelters. It is expected that production in 2005 will remain relatively steady due to the re-openings of closed smelters.

Expansions, proposals and studies for new mines, refineries and smelters have been announced in many countries. Global primary production is expected to grow by about 7% in 2005 with slightly lower growth in 2006. A partial listing of expected and potential changes is provided in Tables 11 and 12.

The Federation of Aluminium Consumers in Europe (FACE) continued its efforts to stimulate aluminum demand by promoting the use of aluminum, assessing the impact of new technologies, and reducing the costs of primary metal through tariff reductions. FACE was formed in 1999 and has approximately 40 members from European aluminum-using companies from 11 countries. As the EU uses more than double the amount of primary aluminum it produces, FACE estimates that the EU's 6% duty on unwrought aluminum imports costs European consumers US\$475 million per year. In 2004, FACE continued its lobbying efforts within the EU for removal of this duty. (FACE has an Internet site at www.facealuminium.com.)

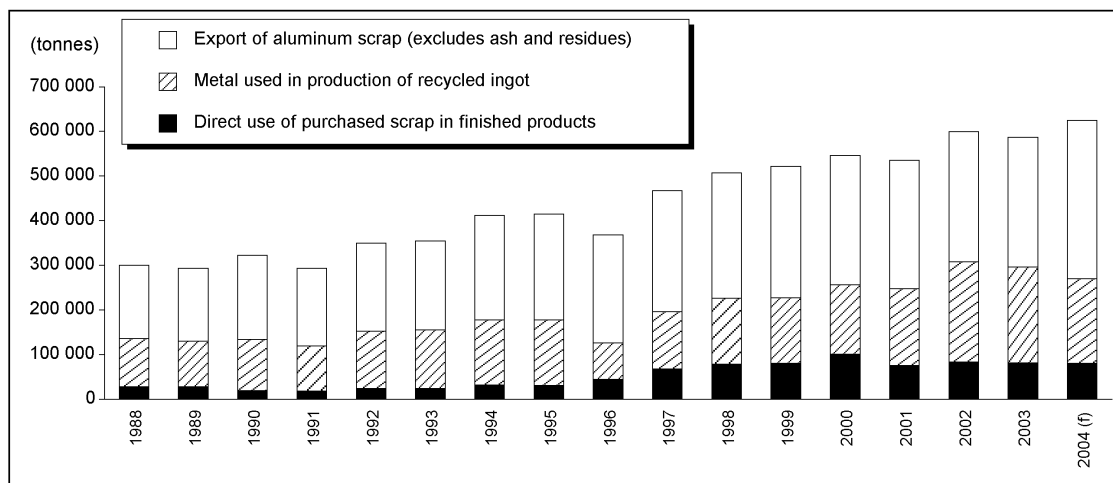
RECYCLING

The WBMS reports that Western World production³ of recycled aluminum metal declined to 7.6 Mt in 2004 from 7.7 Mt in 2003. U.S. production, at just under 3.0 Mt, was the largest amount in any one country and represented almost 40% of this recycled aluminum production. (The U.S. Geological Survey has an Internet site with further information on aluminum production, recycling and use at <http://minerals.usgs.gov>.)

Reported Canadian use of outside scrap (scrap aluminum obtained from other companies) for direct use in the production of semi-finished or finished products was 84 760 t in 2003, up slightly from 83 565 t in 2002, but still down from the record 100 294 t reported in 2000. The reported use of aluminum metal, including scrap used in the production of recycled aluminum ingot, was 214 844 t in 2003, down from 224 613 t in 2002. The reported use of purchased recycled aluminum ingot was 166 594 t in 2003, down approximately 10% from 185 420 t in 2002 (Table 3b, Figures 4 and 5).

Alcoa and Nova Pb Inc. announced an agreement on the treatment of 50 000 t of spent potliner. Spent potliner is created in the production of aluminum and is classed as a hazardous waste. Nova Pb developed a new process to recycle the potliner, blending it with other materials, such as silica and lime to create a new product, CAISiFrit, usable as a supplementary cementing material. St. Lawrence Cement has secured commercial contracts to sell the resulting blended cement product. Large quantities of spent liner are stockpiled around the world and NovaFrit International Inc. (www.calsifrit.com) expects to establish other plants to treat this material.

Figure 8
Canadian Recycling of Aluminum, 1988-2004



Source: Natural Resources Canada Annual Survey of Aluminum Metal Use in Canadian Establishments.

(f) Author forecast for 2004.

Notes: Export figures are obtained from Canadian government trade data. Data on metal use are obtained from responses to questionnaires sent to aluminum-using companies. In 2003, 176 Canadian companies reported the use of primary, recycled and scrap aluminum. Companies surveyed include primary metal producing, recycling, casting, rolling, extruding and foundry operations.

Nova Pb has been working with Alouette since 2001 to recycle spent potliner from the Alouette smelter. CAISiFrit produced from Alouette's spent potliner was used in structural concrete for a modified Jersey wall (4.2 km) in its smelter expansion. More information is available on company web sites and elsewhere on the Internet.

PRICES AND OUTLOOK

Primary-grade aluminum has established a longer-term price range of between US\$1200 and \$1800/t (US55¢ and 82¢/lb) since 1993. However, during 2004, LME cash settlement prices trended upwards from about US\$1600/t in early 2004 to reach above US\$2000/t in March 2005. The 2004 average of US\$1717/t (US78¢/lb) was 20% higher than the 2003 average of US\$1432/t (US65¢/lb).

Aluminum alloy settlement prices started 2004 at US\$1460/t (US66¢/lb) and increased to end the year at US\$1712/t (US78¢/lb). For 2004, alloy prices averaged approximately US\$1563/t (US71¢/lb), compared to an average of approximately US\$1402/t (US63¢/lb) in 2003 (Figures 9 and 10).

Prices in the spot alumina market were strong in 2004 as smelter expansions, particularly in China, placed increased demand on supplies. *Metal Bulletin* has reported that spot prices for metallurgical-grade alumina started the year at US\$330-\$350/t, rose to US\$470-\$490/t in May, and ended

the year at US\$390-\$420/t; they continued to be strong in early 2005.

Other published reports of alumina spot prices, particularly those within China, rose to well above US\$500/t in early 2004, surpassing previous highs established in 2000. Producer prices in Western Australia were reported to have increased by 22% in U.S. dollar terms to average US\$199/t in 2003-04 (www.doir.wa.gov.au/documents/mineralsandpetroleum/statsdigest0304.pdf).

A large number of alumina projects are in the works in China and elsewhere around the world and growth rates are high (see Figure 11). IAI figures show that the alumina production capacity of its members (excluding China, among other countries) is expected to increase from a revised 56.8 Mt/y in December 2004 to 59.6 Mt/y in December 2005.

For primary aluminum, IAI figures show that the world primary metal production capacity of its members is expected to increase by about 4.5% to 25.7 Mt in December 2005 from a revised 24.6 Mt at the end of 2004, with a lower increase (1.6%) expected in 2006.

Taking into account the projected increases from non-IAI members, world primary production is expected to rise by approximately 7% to about 31.7 Mt in 2004. This increase, combined with the 6% increase in 2003, is above the long-term growth rate. The projected increases in production suggested by Table 12 indicate that production will increase at a rate of about 6% in 2006, but may only

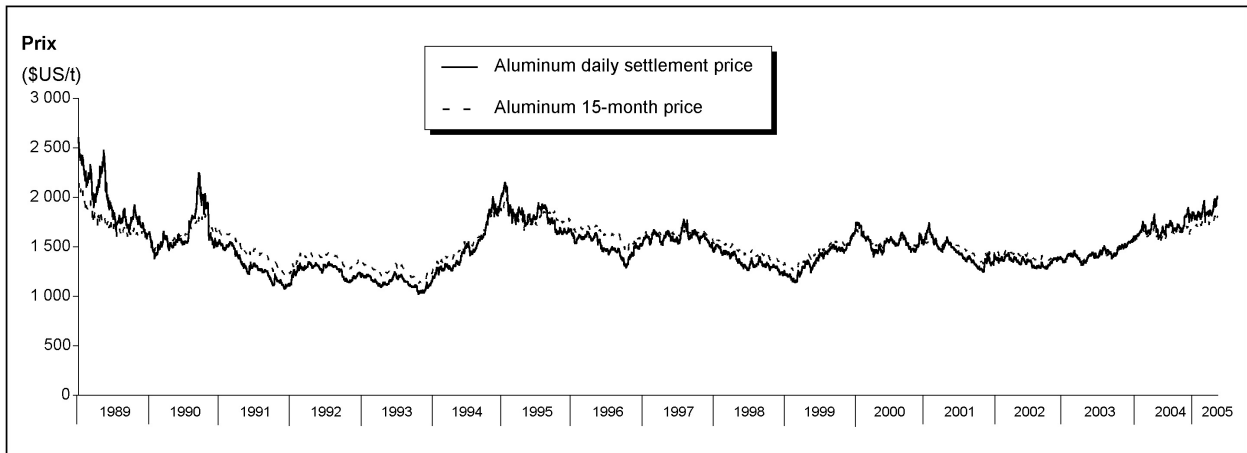
rise at half that rate in 2007, perhaps returning to longer-term average growth rates.

The expected decline in Chinese production growth rates for primary aluminum in 2005 appears to indicate measures by the Chinese government to slow growth rates may be starting to take effect.

Aluminum prices have risen over 35% from the beginning of 2002; however, over the long term, the increasing production from larger, more efficient smelters is likely to continue the long-term trend to lower production costs and prices.

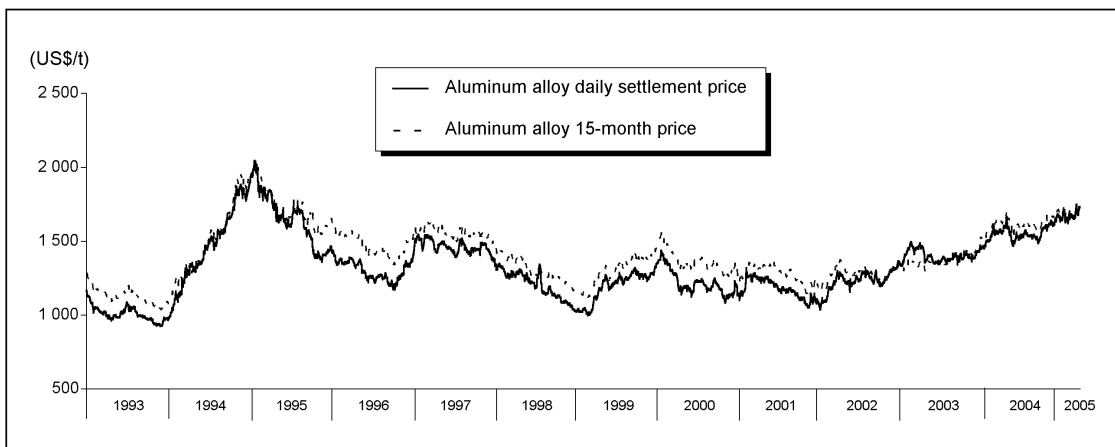
Canadian installed capacity for the production of primary aluminum at the beginning of 2004 was 2.8 Mt/y. However, with the closure of Alcan's Söderberg capacity at Jonquière, it fell to 2.7 Mt/y in April 2004. With the expansion at Alouette, capacity will rise to above 3 Mt/y in 2005, but will increase thereafter only as a result of expected capacity creep.⁴ On a slightly longer-term basis, given the expected closures of other Canadian Söderberg capacity in the next decade and the absence of plans for new power supplies, it is likely that Canadian production capacity will level off slightly above 3 Mt/y and production will fall thereafter unless brownfield expansions are undertaken.

Figure 9
London Metal Exchange Aluminum Prices, 1989-2004



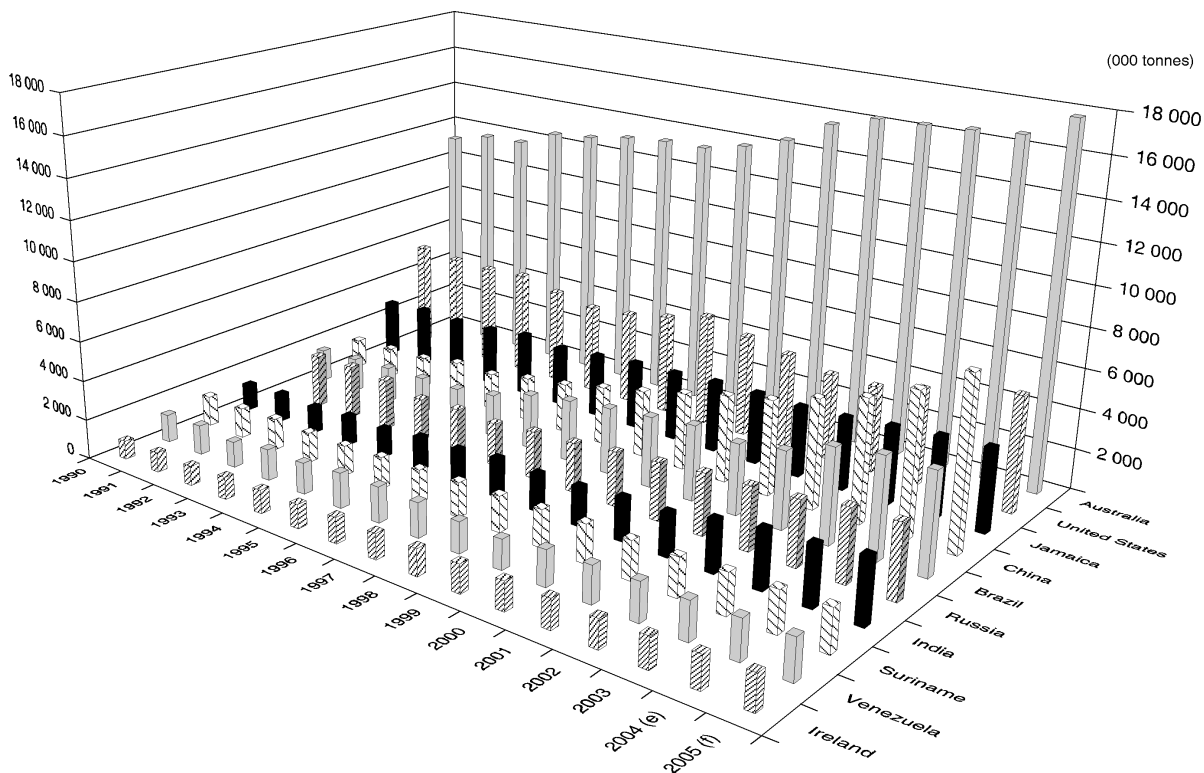
Sources: London Metal Exchange; Reuters; Metalprices.com.

Figure 10
London Metal Exchange Aluminum Alloy Prices, 1993-2004



Sources: London Metal Exchange; Reuters; Metalprices.com.

Figure 11
Alumina Production, 1990-2005
 Top 10 Producers = 80% of Total Production of 63.4 Mt in 2004



Source: International Consultative Group on Nonferrous Metals Statistics; Natural Resources Canada.
 (e) Author's estimate; (f) Author's forecast, based on published data from International Aluminum Institute, media reports, and company and government publications.

ENDNOTES

¹ NRCan Canadian aluminum use data for 2003 are from survey-based responses from 176 Canadian companies using primary and recycled aluminum in scrap, ingot or liquid metal form. Scrap used in the production of recycled ingot is not included in "use." (Contact Lorraine Ralph or Julie Simon at tel. 613-947-6777.)

² Aluminum is different from some other metals in that it is refined before it is smelted.

³ It should be noted that this production of recycled aluminum is that which generally results in ingot for resale or re-use. This figure does not generally include the direct use of scrap to produce semi-finished or finished products.

⁴ Capacity creep results from incremental expansion from removing bottlenecks in existing plants.

Notes: (1) Most information in this review was current as of March 31, 2005. (2) Lorraine Ralph of the Minerals

and Mining Statistics Division prepared Tables 1, 3a and 3b, and she and others in that Division have provided assistance with trade data. (3) Various Internet sites have been identified in this article. Please note that Natural Resources Canada has no control over the content of the web sites of other organizations, which may be modified, updated or deleted at any time. (4) This and other reviews, including previous editions, are available on the Internet at www.nrcan.gc.ca/mms/cmy/com_e.html.

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TARIFFS

Item No.	Description	Canada			United States	EU	Japan
		MFN	GPT	USA	Canada	Conventional Rate (1)	WTO (2)
2606.00.00	Aluminum ores and concentrates	Free	Free	Free	Free	Free	Free
2818.20.00	Aluminum oxide, other than artificial corundum	Free	Free	Free	Free	4%	Free
7601.10	Unwrought aluminum, not alloyed	Free	Free	Free	Free	6%	Free
7601.20	Unwrought aluminum alloys	Free	Free	Free	Free	6%	Free
7602.00	Aluminum waste and scrap	Free	Free	Free	Free	Free	Free
76.03	Aluminum powders and flakes	3.5-5%	Free	Free	Free	5%	3%
76.04	Aluminum bars, rods and profiles	Free-5%	Free	Free	Free	7.5%	7.5%
76.05	Aluminum wire	Free-4%	Free	Free	Free	7.5%	7.5%
76.06	Aluminum plates, sheets and strip, of a thickness exceeding 0.2 mm	Free-6.5%	Free-5%	Free	Free	7.5%	Free-2%
76.07	Aluminum foil of a thickness not exceeding 0.2 mm	Free-6.5%	Free-5%	Free	Free	7.5-10%	7.5%
76.08	Aluminum tubes and pipes	Free-5%	Free	Free	Free	Free-7.5%	7.5%
7609.00	Aluminum tube or pipe fittings	5.5%	3%	Free	Free	7%	3%
76.10	Aluminum structures (excluding prefabricated buildings of heading no. 94.06) and parts of structures, aluminum plates, rods, profiles, tubes and the like, prepared for use in structures	6.5%	5%	Free	Free	6-7%	Free-3%
7611.00	Aluminum reservoirs, tanks, vats and similar containers, for any material, of a capacity exceeding 300 litres, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment	Free-6.5%	Free-5%	Free	Free	6%	3%
76.12	Aluminum casks, drums, cans, boxes and similar containers, for any material, 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%
7613.00	Aluminum containers for compressed or liquefied gas	6.5%	5%	Free	Free	6%	3%
76.14	Stranded wire, cables, plaited bands and the like, of aluminum, not electrically insulated	4.5%	3%	Free	Free	6%	3%
76.15	Table, kitchen or other household articles 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 2005, Canada Border Services Agency; *Harmonized Tariff Schedule of the United States*, 2005; *Official Journal of the European Union* (October 30, 2004 Edition); *Customs Tariff Schedules of Japan, 2004*.

(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.

TABLE 1. CANADA, ALUMINUM TRADE, 2002-04

Item No.	2002		2003		2004 (p)	
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
EXPORTS						
26.06.00	Aluminum ores and concentrates	—	—	—	300	6
26.20.40	Ash and residues containing mainly aluminum	48 877	28 096	44 259	25 215	35 965
28.18.20	Aluminum oxide (excluding artificial corundum)	51 523	48 624	49 676	45 635	55 349
7601.10	Unwrought aluminum, not alloyed					
	United States	629 027	1 404 015	866 791	1 783 875	763 736
	Japan	15 771	37 456	16 742	37 305	40 935
	South Korea	45 516	107 837	57 522	127 823	29 936
	Hong Kong	883	1 972	910	1 854	7 185
	Netherlands	187 611	392 573	51 549	100 676	6 375
	Germany	37 505	83 103	10 647	20 440	5 999
	Nepal	—	—	—	—	3 728
	Mexico	35 458	80 558	2 388	4 820	1 668
	Other	55 846	120 133	112 612	215 979	1 361
	Total	1 007 617	2 227 647	1 119 161	2 292 772	860 923
7601.20	Unwrought aluminum alloyed					
	United States	984 087	2 376 646	924 347	2 084 485	917 487
	Japan	79 915	194 210	100 386	229 578	128 975
	Mexico	29 960	55 652	40 191	89 283	44 790
	South Korea	14 517	35 616	19 377	44 959	26 446
	United Kingdom	4 950	13 721	4 413	11 091	4 295
	China	—	—	214	471	4 047
	Turkey	247	651	1 978	4 527	3 059
	Israel	3 414	8 337	7 548	16 798	1 849
	Ireland	1 652	4 243	1 369	3 276	1 240
	Other	6 821	19 996	14 027	31 629	876
	Total	1 125 563	2 709 072	1 113 850	2 516 097	1 133 064
	Total unwrought aluminum exports	2 133 180	4 936 719	2 233 011	4 808 869	1 993 987
7602.00	Aluminum waste and scrap					
	United States	266 776	446 007	248 567	383 388	324 837
	China	17 814	24 509	24 350	32 662	21 591
	Taiwan	1 158	1 899	1 553	2 421	3 153
	Japan	3 654	7 620	15 114	33 381	932
	Pakistan	177	138	443	496	1 202
	Italy	—	—	52	150	785
	South Korea	872	1 423	54	58	647
	Other	440	777	1 104	1 103	1 337
	Total	290 891	482 373	291 237	453 659	354 484
76.03	Aluminum powders and flakes	126	627	63	401	151
76.04	Aluminum bars, rods and profiles	88 697	413 790	79 502	349 430	94 538
76.05	Aluminum wire	116 364	296 815	154 510	372 870	161 762
76.06	Aluminum plates, sheets and strip, of a thickness exceeding 0.2 mm	364 985	1 120 497	356 165	1 035 067	391 862
76.07	Aluminum foil not exceeding 0.2 mm	51 318	270 259	51 808	243 417	48 494
76.08	Aluminum tubes and pipes	4 495	28 858	5 264	29 607	6 182
76.09	Aluminum tube or pipe fittings	919	10 499	992	10 192	1 085
76.10	Aluminum structures and parts of structures, aluminum plates, rods, profiles, tubes and the like, prepared for use in structures	..	380 996	..	338 224	..
		(number)	(\$000)	(number)	(\$000)	(number)
76.11	Aluminum reservoirs, tanks, vats, and similar containers, for any material	426	881	189	1 020	366
						296

TABLE 1 (cont'd)

Item No.	2002		2003		2004 (p)		
	(number)	(\$000)	(number)	(\$000)	(number)	(\$000)	
EXPORTS (cont'd)							
76.12	Aluminum casks, drums, cans, boxes and similar containers, for any material	580 168 555	102 882	569 795 015	95 099	620 153 772	106 806
76.13	Aluminum containers for compressed or liquefied gas	633 156	2 470	823 864	2 690	1 304 561	3 360
		(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
76.14	Stranded wire, cables, plaited bands and the like, of aluminum, not electrically insulated	14 372	47 642	17 387	54 979	20 598	66 006
76.15	Table, kitchen or other household articles and parts thereof, of aluminum	..	63 729	..	66 395	..	68 777
76.16	Other articles of aluminum	..	209 017	..	205 047	..	218 698
	Total exports	..	8 444 774	..	8 137 726	..	8 776 803
IMPORTS							
2606.00	Aluminum ores and concentrates	2 777 925	133 060	2 991 608	97 530	2 848 082	95 236
2620.40	Ash and residues containing mainly aluminum	6 204	5 449	6 775	5 652	18 252	18 036
2818.20	Aluminum oxide (excluding artificial corundum)						
	Australia	1 877 625	488 043	1 834 180	446 510	1 820 283	487 556
	Jamaica	810 324	236 279	919 041	231 813	1 203 936	322 144
	Brazil	65 809	24 186	230 349	58 437	378 759	108 939
	United States	1 215 745	317 297	1 129 245	294 172	199 326	74 917
	Venezuela	26 172	6 898	—	—	128 155	36 142
	Germany	7 666	5 324	3 073	6 377	1 229	6 939
	Suriname	33 409	7 898	—	—	15 035	4 129
	China	7 080	2 449	6 211	2 015	4 771	1 880
	Other	5 068	4 241	2 274	2 485	2 044	3 174
	Total	4 048 898	1 092 615	4 124 373	1 041 809	3 753 538	1 045 820
2818.30	Aluminum hydroxide	5 660	6 481	8 449	7 313	9 906	8 075
7601.10	Unwrought aluminum, not alloyed						
	United States	23 702	56 214	22 720	48 791	23 856	54 904
	Russia	—	—	2	5	1 062	2 302
	Ghana	—	—	1 344	2 886	961	1 981
	China	...	...	...	...	445	946
	Australia	500	1 195	400	891	369	891
	New Zealand	—	—	...	...	247	592
	France	55	169	36	107	73	246
	Other	83	145	79	158	141	313
	Total	24 340	57 723	24 581	52 838	27 154	62 175
7601.20	Unwrought aluminum, alloyed						
	United States	163 772	315 279	109 296	241 977	125 738	297 044
	Russia	4 168	9 559	781	1 708	2 872	7 025
	Switzerland	—	—	94	177	1 679	4 320
	United Kingdom	905	2 108	296	806	1 135	3 188
	Netherlands	558	1 142	776	2 031	743	2 318
	Italy	3	5	...	...	682	1 754
	Ukraine	376	654	847	1 437	416	927
	Brazil	294	696	320	729	221	661
	Sweden	—	—	—	—	161	350
	China	20	40	57	149	122	324
	Germany	325	739	239	546	153	322
	Other	1 301	3 824	607	2 060	4 199	2 119
	Total	171 722	334 046	113 313	251 620	138 121	320 352
	Total unwrought aluminum imports	196 062	391 769	137 894	304 458	165 275	382 527

TABLE 1 (cont'd)

Item No.	2002		2003		2004 (p)		
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)	
IMPORTS (cont'd)							
7602.00	Aluminum waste and scrap	138 042	197 909	139 726	218 484	149 562	215 881
76.03	Aluminum powders and flakes						
	United States	1 537	6 203	1 445	5 552	1 927	6 886
	Germany	179	809	165	770	149	703
	France	178	828	35	170	87	382
	United Kingdom	...	1	2	17	31	141
	Other	49	394	13	82	5	76
	Total	1 943	8 235	1 660	6 591	2 199	8 188
7604.10	Aluminum bars, rods and profiles: of aluminum, not alloyed						
	United States	4 104	23 487	2 941	16 057	2 807	17 249
	Belgium	1 067	5 624	1 064	5 236	1 208	5 500
	China	1 238	4 520	242	909	1 145	3 842
	Russia	106	388	87	289	295	1 037
	Malaysia	-	-	68	314	220	773
	Germany	79	499	74	489	130	723
	Italy	49	261	37	191	25	164
	United Kingdom	23	112	17	110	11	66
	Austria	266	681	...	...	15	64
	Canada	274	1 856	63	315	10	49
	Other	98	612	82	496	30	198
	Total	7 304	38 040	4 675	24 406	5 896	29 665
7604.21 to 7604.29	Aluminum bars, rods and profiles: of aluminum alloys						
	United States	25 934	128 819	26 734	123 081	31 960	155 945
	China	5 127	21 103	11 782	38 714	16 021	52 911
	South Korea	2 099	7 547	1 043	3 428	1 336	4 532
	Canada	39	238	366	2 355	286	2 533
	Italy	145	1 065	174	1 417	282	2 440
	Germany	286	1 918	247	2 025	296	2 366
	Brazil	10	55	42	189	484	1 690
	Russia	230	1 003	379	1 433	342	1 417
	Israel	35	197	221	776	270	1 124
	Thailand	9	35	-	-	87	891
	Belgium	87	423	23	126	154	702
	France	219	1 291	126	817	92	501
	United Kingdom	156	988	95	647	67	410
	India	37	117	62	188	89	292
	Taiwan	46	212	83	389	47	231
	Netherlands	1	9	14	87	35	228
	Austria	9	65	51	279	33	218
	Mexico	38	262	42	258	33	144
	Sweden	54	568	49	503	14	116
	Other	161	780	177	881	123	729
	Total	34 722	166 695	41 710	177 593	52 051	229 420
76.05	Aluminum wire	10 357	37 484	11 776	38 332	11 274	42 156
76.06	Aluminum plates, sheets and strip, of a thickness exceeding 0.2 mm						
	United States	419 016	1 506 916	422 904	1 334 809	471 892	1 582 352
	Germany	6 788	33 137	5 814	25 443	6 815	28 738
	France	4 567	19 428	4 058	16 273	4 720	19 720
	Greece	1 998	7 658	3 703	13 070	4 734	17 453
	Belgium	2 395	8 417	2 884	9 110	4 478	14 328
	China	1 393	4 498	3 274	9 786	4 340	13 072
	South Korea	2 902	8 933	2 883	8 725	3 614	11 500
	United Kingdom	6 423	19 949	2 570	8 942	1 630	7 840
	Canada	2 036	7 739	1 639	5 612	1 893	7 260
	South Africa	3 817	13 985	1 870	6 653	2 002	6 912
	Hungary	1 323	5 069	1 687	6 042	1 767	6 656
	Brazil	112	383	1 625	4 940	1 898	6 023
	Indonesia	441	1 446	989	3 005	1 319	4 308
	Russia	1 162	4 157	1 075	3 391	994	4 107
	Sweden	181	767	1 027	3 834	928	3 467
	Switzerland	1 538	7 113	802	2 857	777	3 086
	Egypt	6	20	109	345	885	2 848
	Hong Kong	359	1 513	558	2 098	647	2 480
	Venezuela	1 117	3 474	925	2 740	599	1 961

TABLE 1 (cont'd)

Item No.	2002		2003		2004 (p)		
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)	
IMPORTS (cont'd)							
	Japan	2 005	9 353	652	3 755	603	1 912
	Austria	544	2 445	541	2 219	398	1 805
	Romania	503	2 299	517	1 992	286	1 249
	Netherlands	463	1 891	187	634	276	1 077
	Norway	201	1 094	172	900	183	913
	India	12	43	140	460	235	805
	Other	1 233	5 139	874	3 405	859	3 614
	Total	462 535	1 676 866	463 479	1 481 040	518 772	1 755 486
76.07	Aluminum foil not exceeding 0.2 mm						
	United States	41 732	207 639	46 630	195 476	50 719	215 106
	Luxembourg	1 082	4 196	1 427	5 054	2 583	9 037
	China	1 868	6 555	1 730	6 028	2 221	8 664
	Germany	1 384	8 291	1 577	9 946	877	7 830
	Taiwan	1 650	7 788	1 626	6 969	1 162	4 733
	South Korea	785	3 654	426	2 131	1 102	4 161
	France	749	5 281	875	4 261	680	3 356
	Switzerland	214	1 912	260	2 352	298	3 002
	Belgium	897	3 970	1 962	7 048	856	2 952
	South Africa	277	1 217	255	1 313	610	2 606
	Netherlands	3	24	81	625	156	1 432
	United Kingdom	83	639	66	597	145	1 077
	Russia	1 104	4 245	2 397	8 018	9	33
	Other	1 085	5 752	918	4 892	806	5 101
	Total	52 913	261 163	60 230	254 710	62 224	269 090
76.08	Aluminum tubes and pipes						
	United States	13 047	68 522	11 615	58 190	10 705	67 206
	China	608	2 195	562	1 734	1 734	5 686
	Mexico	5	28	21	130	234	2 611
	South Korea	6	51	450	1 530	724	2 549
	Other	521	3 460	487	2 805	439	2 997
	Total	14 187	74 256	13 135	64 389	13 836	81 049
76.09	Aluminum tube or pipe fittings						
	United States	5 552	36 827	4 741	31 824	2 058	29 410
	China	73	500	88	576	275	1 227
	Mexico	755	4 970	550	3 751	161	1 203
	United Kingdom	203	1 398	210	1 447	79	1 123
	Taiwan	253	1 665	245	1 543	208	1 036
	Other	170	1 176	169	1 146	95	1 076
	Total	7 006	46 536	6 003	40 287	2 876	35 075
76.10	Aluminum structures and parts of structures, aluminum plates, rods, profiles, tubes and the like, prepared for use in structures						
	United States	..	111 038	..	106 174	..	113 650
	China	..	875	..	2 448	..	6 139
	United Kingdom	..	2 526	..	2 632	..	1 985
	Germany	..	1 521	..	2 423	..	1 597
	Sweden	..	130	..	186	..	1 508
	Netherlands	..	639	..	566	..	1 142
	Italy	..	686	..	1 553	..	918
	France	..	1 354	..	850	..	764
	Other	..	2 435	..	2 995	..	4 119
	Total	..	121 204	..	119 827	..	131 822
		(number)	(\$000)	(number)	(\$000)	(number)	(\$000)
76.11	Aluminum reservoirs, tanks, vats and similar containers, for any material, etc.	516	1 570	279	966	289	1 222
76.12	Aluminum casks, drums, cans, boxes and similar containers, for any material	1 437 803 927	253 463	1 199 098 101	178 065	1 300 156 513	161 335
76.13	Aluminum containers for compressed or liquefied gas	104 124	22 125	198 243	16 636	368 837	14 478

TABLE 1 (cont'd)

Item No.	2002		2003		2004 (p)		
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)	
IMPORTS (cont'd)							
76.14	Stranded wire, cables, plaited bands and the like, of aluminum, not electrically insulated	887	3 395	1 091	3 529	419	1 865
76.15	Table, kitchen or other household articles and parts thereof, of aluminum	..	98 769	..	102 806	..	87 348
76.16	Other articles of aluminum	..	296 425	..	264 550	..	266 493
	Total imports	..	4 933 509	..	4 448 973	..	4 880 267

Sources: Natural Resources Canada; Statistics Canada.

– Nil; . . Not available; . . . Amount too small to be expressed; (p) Preliminary.

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

TABLE 2. CANADA, ALUMINUM SMELTER CAPACITY

Company	As of December 31, 2004
	(t/y)
Alcan Aluminium Inc.	
Quebec	
Grande-Baie	196 000
Arvida, Jonquière	163 000
Alma	405 000
Shawinigan	93 000
Beauharnois	51 000
Laterrière	219 000
British Columbia	
Kitimat	277 000
Alcoa Inc.	
Quebec	
Aluminerie de Baie-Comeau	438 000
Aluminerie Luralco Inc. Deschambault	254 000
Aluminerie de Bécancour Inc.	
Quebec	
Bécancour	409 000
Alcoa, 74.95%	
Alcan (Pechiney), 25.05%	
Aluminerie Alouette Inc.	
Quebec	(a) 245 000
Sept-Îles	
Alcan, 40%	
Aluminium Austria Metall Québec, 20%	
Hydro Aluminium, 20%	
Société Générale de Financement du Québec, 13.33%	
Marubeni Québec Inc., 6.66%	
Total Canadian capacity	2 750 000
Total Alcan, 58.34%	1 604 455
Total Alcoa, 36.31%	998 546
Total other, 5.35%	147 000

Source: Natural Resources Canada.

(a) Capacity increasing to 550 000 t/y in 2005. New potline started production in January 2005 with full capacity to be reached in mid-2005.

TABLE 3a. USE (1) OF ALUMINUM METAL (4) IN CANADA AT FIRST PROCESSING STAGE, 2000-2003

	2000 (a)	2001 (r,a)	2002 (r,a,6)	2003 (a,5)
	(tonnes)			
METAL USED IN CASTINGS				
Permanent mould	132 891	102 018	87 294	60 649
Sand	4 460	4 210	4 487	4 000
Die and other	208 722	181 419	220 587	240 280
Total	346 073	287 647	312 368	304 929
METAL USED IN WROUGHT PRODUCTS				
Sheet, plate, coil and foil	214 775	225 033	240 155	258 236
Extrusions, including tubing	230 063	232 127	240 311	223 586
Other wrought products (including rods, forgings and slugs)	184 392	180 215	187 359	196 372
Total	629 230	637 375	667 825	678 194
METAL USED IN OTHER PRODUCTS				
Destructive uses (deoxidizer), non-aluminum base alloys, powder and paste and other uses	41 204	39 587	39 519	26 176
Total used	1 016 506	964 609	1 019 713	1 009 299
Aluminum metal used for the production of recycled aluminum (2)	155 728	172 222	224 613	214 844
METAL ENTERING PLANT				
Primary aluminum and alloys	733 232	746 222	762 779	765 071
Recycled aluminum (7)	191 326	155 042	186 097	164 473
Aluminum scrap and aluminum content of drosses and skimmings (8)	279 190	274 092	307 721	299 221
Total	1 203 748	1 175 356	1 256 597	1 228 765
ON HAND DECEMBER 31				
Primary aluminum and alloys	17 476	15 608	17 671	16 505
Recycled aluminum (7)	6 672	8 030	8 558	4 605
Aluminum scrap and aluminum content of drosses and skimmings (8)	13 971	13 752	9 441	10 484
Total	38 119	37 390	35 670	31 594
Aluminum shipments (3)	34 525	272 952	288 456	292 567
Production of recycled aluminum, scrap and aluminum content of dross and skimmings (3)	..	233 067	280 063	283 868

Source: Natural Resources Canada.

.. Not available; (r) Revised.

(a) Increase in number of companies being surveyed; therefore, the closing inventory of the previous year does not equal the opening inventory of the current year.

(1) Available data as reported by users. (2) Aluminum metal used in the production of recycled aluminum is not included in usage totals. (3) Aluminum shipments for 2001 onwards include shipments of recycled aluminum, aluminum scrap, aluminum content of dross and skimmings of own manufacture. (4) Aluminum metal refers to primary aluminum and alloys, recycled aluminum, aluminum scrap and aluminum content of dross and skimmings. (5) For 2003, this table is compiled from Natural Resources Canada's annual survey, "Aluminum Metal Used" from data for 176 Canadian users (contact Lorraine Ralph or Julie Simon, tel. 613-947-6777). (6) Some totals prior to 2001 may contain runaround (home) aluminum scrap. (7) Recycled aluminum entering plant contains tolling returns. (8) Aluminum content of drosses and skimmings is not included for years prior to 2001.

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

TABLE 3b. USE (1) OF ALUMINUM METAL (2) IN CANADA, BY TYPE AT FIRST PROCESSING STAGE, 1991-2003

	1991 (a)	1992 (a)	1993 (a)	1994 (a)	1995	1996 (a)	1997 (a)	1998 (a)	1999 (a)	2000 (a)	2001 (a,5)	2002 (r,a)	2003 (r,4)
TYPE OF ALUMINUM METAL USED IN PRODUCTS OTHER THAN RECYCLED ALUMINUM													
Primary aluminum and alloys	355 010	369 185	447 997	485 845	490 000	512 865	558 139	653 320	719 124	726 187	735 011	750 728	757 945
Purchased recycled aluminum (7)	73 461	87 896	95 774	117 710	114 961	119 515	138 852	158 355	199 429	190 026	154 730	185 420	166 594
Outside aluminum scrap	17 768	24 009	25 084	31 469	30 441	44 555	67 447	78 298	80 689	100 294	74 869	83 565	84 760
Total used in products other than in recycled aluminum	446 239	481 090	568 855	635 024	635 402	676 935	764 438	889 973	999 242	1 016 507	964 610	1 019 713	1 009 299
TYPE OF ALUMINUM METAL USED IN RECYCLED ALUMINUM (3)													
Primary aluminum and alloys	x	x	x	x	x	x	14 650	x	10 879	10 074	x	x	x
Outside aluminum scrap, dross, skimmings and recycled aluminum (6)	x	x	x	x	x	x	113 865	x	135 081	145 654	x	x	x
Total used in recycled aluminum (3)	101 503	127 818	131 174	145 661	146 987	81 630	128 515	147 847	145 960	155 728	172 222	224 612	214 844

Source: Natural Resources Canada.

(r) Revised; x Confidential.

(a) Increase in number of companies being surveyed.

(1) Available data as reported by users. (2) Aluminum metal refers to primary aluminum and alloys, purchased recycled aluminum, and outside aluminum scrap and aluminum content of dross and skimmings. (3) Aluminum metal used in recycled aluminum is not included in "Total used in products other than in recycled aluminum" above. (4) For 2003 this table is compiled from Natural Resources Canada's annual survey, "Aluminum Metal Used" from data for 176 Canadian users (contact Lorraine Ralph or Julie Simon, tel. 613-947-6777). (5) Some totals prior to 2001 contained runaround aluminum scrap. In 2001 runaround scrap was removed where known from totals. (6) Aluminum content of drosses and skimmings is not included for years prior to 2001. (7) Recycled aluminum entering plant contains tolling returns.

TABLE 4. AVERAGE ALUMINUM PRICES

Year	Month	LME Cash Settlement (1)		Metals Week
		(US\$/t)	(US\$/lb)	U.S. Markets (1)
		(US\$/t)	(US\$/lb)	(US\$/lb)
ANNUAL AVERAGES (2)				
1993		1 139	0.52	0.53
1994		1 477	0.67	0.71
1995		1 806	0.82	0.86
1996		1 506	0.68	0.71
1997		1 600	0.73	0.77
1998		1 358	0.62	0.66
1999		1 361	0.62	0.66
2000		1 549	0.70	0.75
2001		1 444	0.65	0.69
2002		1 350	0.61	0.65
2003		1 431	0.65	0.68
2004		1 717	0.78	0.84
MONTHLY AVERAGES				
2003	January	1 378	0.63	0.66
	February	1 422	0.65	0.69
	March	1 389	0.63	0.68
	April	1 332	0.60	0.65
	May	1 398	0.63	0.67
	June	1 410	0.64	0.66
	July	1 436	0.65	0.67
	August	1 456	0.66	0.67
	September	1 416	0.64	0.67
	October	1 474	0.67	0.70
	November	1 508	0.68	0.72
	December	1 555	0.71	0.74
2004	January	1 606	0.73	0.77
	February	1 686	0.76	0.82
	March	1 656	0.75	0.82
	April	1 730	0.78	0.85
	May	1 623	0.74	0.80
	June	1 678	0.76	0.83
	July	1 709	0.78	0.84
	August	1 692	0.77	0.83
	September	1 724	0.78	0.84
	October	1 820	0.83	0.89
	November	1 814	0.82	0.89
	December	1 849	0.84	0.91

Sources: Natural Resources Canada; *Metals Week*.

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

**TABLE 5. AVERAGE ALUMINUM ALLOY
(RECYCLED) PRICES**

Year	Month	LME Alloy (1) Cash Settlement	
		(US\$/t)	(US\$/lb)
ANNUAL AVERAGES			
1993		1 005	0.46
1994		1 453	0.66
1995		1 656	0.75
1996		1 303	0.59
1997		1 461	0.66
1998		1 204	0.55
1999		1 191	0.54
2000		1 217	0.55
2001		1 172	0.53
2002		1 234	0.56
2003		1 400	0.63
2004		1 559	0.71
MONTHLY AVERAGES			
2003	January	1 384	0.63
	February	1 456	0.66
	March	1 454	0.66
	April	1 405	0.64
	May	1 383	0.63
	June	1 353	0.61
	July	1 372	0.62
	August	1 382	0.63
	September	1 389	0.63
	October	1 398	0.63
	November	1 383	0.63
	December	1 438	0.65
2004	January	1 481	0.67
	February	1 546	0.70
	March	1 559	0.71
	April	1 596	0.72
	May	1 503	0.68
	June	1 526	0.69
	July	1 542	0.70
	August	1 525	0.69
	September	1 534	0.70
	October	1 601	0.73
	November	1 631	0.74
	December	1 663	0.75

Sources: Natural Resources Canada; *Metals Week*.
(1) Alloy ingots, meeting LME specifications.

TABLE 6. WORLD MINE PRODUCTION OF BAUXITE, 1998-2003

	1998	1999	2000	2001	2002	2003
(000 tonnes)						
Australia	44 553.0	48 416.0	53 802.0	(r) 53 799.0	(r) 54 134.0	55 602.0
Brazil	11 961.1	14 371.5	14 379.2	13 388.1	13 147.9	18 456.8
Guinea	16 678.8	17 419.1	17 991.9	17 191.7	17 480.5	17 043.8
Jamaica	12 646.4	11 688.5	11 126.5	12 370.4	(r) 13 119.5	13 444.4
China	6 400.0	7 100.0	7 900.0	8 650.0	9 990.0	10 989.0
India	5 980.1	6 712.2	7 562.1	7 863.9	9 647.3	10 413.7
Venezuela	4 825.6	4 166.5	4 360.7	4 584.9	5 190.8	5 445.5
Russia	4 092.0	4 513.0	5 000.0	4 805.0	(r) 4 585.7	5 441.8
Kazakhstan	3 436.8	3 606.5	3 729.6	3 685.1	4 376.6	4 737.1
Suriname	3 931.1	3 714.6	3 610.3	4 393.7	4 001.6	4 215.1
Greece	1 823.0	1 882.5	1 966.0	1 986.0	(r) 2 491.9	2 418.0
Guyana	2 266.7	2 359.3	2 689.5	2 011.3	1 639.3	1 715.7
Indonesia	1 055.6	1 142.5	1 175.4	1 275.6	1 283.5	1 262.7
Hungary	908.0	935.2	1 046.5	1 000.0	720.0	665.9
Ghana	442.5	353.1	424.6	715.5	795.8	646.6
Serbia and Montenegro	226.0	500.0	630.0	610.0	611.5	540.1
Turkey	458.0	207.7	458.5	242.0	287.4	364.3
Iran	336.0	439.4	485.1	273.7	323.6	325.0
United States	200.0	200.0	200.0	200.0	200.0	200.0
France	170.0	170.0	185.0	(r) 174.0	(r) 170.0	168.0
Bosnia and Herzegovina	–	–	20.7	77.0	113.0	162.0
Vietnam	30.0	30.0	16.0	20.0	20.0	20.0
Mozambique	6.1	7.9	8.1	8.6	9.1	11.8
Pakistan	5.0	11.2	10.4	3.7	12.2	4.1
Malaysia	160.3	223.7	123.3	64.2	40.0	2.5
Albania	4.1	4.6	3.0	3.0	3.0	–
Romania	161.9	–	–	–	–	–
Total world	122 759.0	130 175.0	138 904.4	(r) 139 396.4	(r) 144 394.2	154 295.9
% change from previous year	-2.9	6.0	6.7	0.4	3.6	6.9

Sources: International Consultative Group on Nonferrous Metals Statistics; World Bureau of Metal Statistics; media reports.
– Nil; (r) Revised.

TABLE 7. PRODUCTION OF ALUMINA (HYDRATE), 1999-2005

	1999	2000	2001	2002	2003	2004 (e)	2005 (f)
(000 tonnes)							
Australia	14 532.0	(r) 15 680.0	(r) 16 313.0	16 382.0	16 529.0	16 690	17 800
China	(r) 3 837.4	(r) 4 328.1	(r) 4 746.5	(r) 5 450.0	6 114.0	7 100	8 500
United States (1)	5 144.0	4 786.0	4 340.0	4 338.0	4 834.0	5 675	5 750
Brazil	3 515.1	3 754.1	3 519.7	3 855.4	4 713.8	5 000	5 000
Jamaica	3 569.6	3 600.1	3 542.4	3 630.6	3 685.0	3 840	4 140
Russia	(r) 2 687.0	2 865.0	3 046.4	3 131.0	3 230.5	3 594	3 660
India	1 930.0	2 107.0	(r) 2 120.0	(r) 2 556.0	2 856.0	2 940	3 200
Suriname	1 853.1	1 906.1	1 893.3	1 902.7	2 004.0	2 040	2 100
Venezuela	1 469.0	1 755.3	1 833.1	(r) 1 901.0	1 882.0	1 950	1 000
Ireland (1)	1 395.7	1 410.7	1 448.7	1 400.0	1 500.0	1 600	1 700
Ukraine	1 230.2	1 365.0	1 343.4	1 350.9	1 434.1	1 563	1 600
Kazakhstan	1 157.7	1 216.7	1 231.1	(r) 1 386.5	1 419.3	1 468	1 500
Spain	1 112.0	1 123.0	1 199.0	(r) 1 350.0	1 380.0	1 385	1 390
Canada	1 233.0	1 197.4	1 196.5	1 283.0	1 269.6	1 330	1 330
Italy	973.0	1 022.0	993.0	980.0	1 021.0	1 064	1 070
Germany	806.0	826.0	836.0	837.0	844.0	870	880
Greece	633.0	690.0	709.0	750.0	758.8	780	800
Guinea	568.5	540.9	674.3	(r) 701.9	734.0	750	775
Japan	736.6	781.7	739.0	723.9	725.0	730	740
France	556.0	600.0	598.0	585.0	600.0	650	690
Romania (1)	277.4	416.6	319.4	(r) 361.0	332.9	475	600
Hungary (1)	295.0	357.1	(r) 330.0	(r) 293.7	300.0	300	300
Azerbaijan	76.0	63.0	87.5	91.0	180.0	300	400
Bosnia and Herzegovina	37.0	219.4	100.0	–	61.0	300	600
Serbia and Montenegro	156.0	186.1	200.7	(r) 237.4	230.0	240	250
Turkey (1)	159.1	155.4	146.0	152.9	162.2	160	160
Slovakia	(r) 100.0	(r) 110.1	(r) 110.0	(r) 111.6	132.1	135	140
South Korea	–	–	25.0	25.0	125.0	135	145
Iran	–	–	–	102.0	80.0	100	100
Slovenia	(r) 70.0	(r) 70.0	(r) 34.0	(r) 30.0	30.0	30	30
United Kingdom (1)	(r) 90.0	(r) 88.5	(r) 83.9	(r) 73.8	–	–	–
Total world	50 199.4	53 221.3	53 758.9	55 973.3	59 326.8	63 378	67 350
% change from previous year	3.3	6.0	1.0	4.1	6.0	6.8	6.3

Sources: International Consultative Group on Nonferrous Metals Statistics, International Aluminium Institute; media reports.
– Nil; (e) Author's estimate; (f) Author's forecast; (r) Revised.
(1) Calculated.

TABLE 8. WORLD PRODUCTION OF PRIMARY ALUMINUM, 1999-2005

	1999	2000	2001	2002	2003	2004 (e)	2005 (f)
	(000 tonnes)						
China	2 598.5	(r) 2 794.1	(r) 3 371.4	(r) 4 321.3	5 449.0	6 589	7 700
Russia	3 149.0	3 247.0	3 302.0	(r) 3 348.2	3 477.7	3 559	3 600
Canada	2 389.8	2 373.5	2 582.7	2 708.9	2 791.9	2 592	2 900
United States	3 778.6	3 668.4	2 637.0	(r) 2 706.6	2 703.3	2 516	2 510
Australia	(r) 1 718.4	(r) 1 769.0	(r) 1 797.1	1 836.0	1 857.5	1 877	1 900
Brazil	1 249.6	1 271.4	1 132.0	1 318.4	1 380.6	1 457	1 485
Norway	1 009.0	1 031.1	1 034.2	1 042.8	1 180.2	1 300	1 355
India	594.0	646.3	624.1	671.2	798.8	855	930
South Africa	(r) 689.2	(r) 673.5	(r) 662.5	(r) 706.9	738.0	806	855
Dubai	440.7	536.0	536.0	(r) 538.0	560.0	683	690
Germany	633.8	643.5	651.6	652.8	660.9	670	675
Venezuela	570.3	570.9	570.6	605.3	601.3	634	640
Bahrain	502.7	509.0	522.1	517.0	525.8	530	755
Mozambique	–	53.8	266.0	273.2	408.5	530	535
France	455.1	441.2	460.9	463.2	444.1	420	420
Spain	363.9	365.7	376.4	380.1	389.1	390	390
United Kingdom	269.7	305.1	340.8	343.8	342.7	365	370
Tadjikistan	229.1	(r) 269.2	289.1	307.6	319.4	358	375
New Zealand	326.7	328.4	322.3	333.9	334.4	350	355
Netherlands	287.4	301.7	293.2	284.4	283.0	310	330
Argentina	206.4	261.8	245.1	268.8	271.9	270	275
Iceland	221.5	225.7	242.6	263.7	265.9	269	270
Romania	174.1	179.0	181.8	187.1	195.6	250	285
Egypt	186.7	188.9	190.8	195.0	194.0	230	245
Indonesia	112.3	192.3	208.8	162.8	192.0	230	230
Italy	(r) 187.2	189.2	187.4	190.5	191.5	193	195
Iran	138.0	139.5	145.2	165.8	170.0	175	180
Greece	159.9	162.6	162.0	163.9	166.4	165	165
Slovakia	109.2	109.8	110.1	111.6	131.4	157	160
Slovenia	77.2	75.6	76.6	87.6	109.8	120	120
Bosnia	70.0	94.5	96.0	103.5	110.6	117	120
Serbia and Montenegro	80.9	95.5	108.1	116.5	120.2	116	117
Ukraine	115.4	(r) 103.6	106.1	112.5	113.6	113	115
Sweden	98.5	100.1	101.8	100.6	101.2	102	103
Cameroon	91.9	94.9	80.5	67.0	77.2	80	80
Turkey	61.7	61.5	61.7	62.5	63.1	63	64
Poland	51.6	55.5	54.6	58.8	57.2	60	60
Switzerland	34.4	35.5	36.2	40.0	413.0	44	44
Hungary	33.6	33.9	34.6	35.3	35.0	36	36
Azerbaijan				(r) 0.1	18.6	30	30
Japan	10.9	6.5	6.6	6.4	6.5	6	6
Ghana	114.2	155.5	162.3	132.4	15.9	–	30
Mexico	62.7	61.2	51.5	37.6	17.6	–	–
Nigeria	15.9	–	–	–	–	–	–
Suriname	6.6	–	–	–	–	–	–
Total world	(r) 23 676.3	(r) 24 421.4	(r) 24 422.4	(r) 26 029.6	27 915.8	29 617	31 700
% change from previous year	4.6	3.1	0.0	6.6	7.2	6.1	7

Sources: International Consultative Group on Nonferrous Metals Statistics; World Bureau of Metal Statistics; International Aluminium Institute; media reports.

– Nil; (e) Author's estimate; (f) Author's forecast; (r) Revised.

TABLE 9. APPARENT USE OF PRIMARY ALUMINUM, 1999-2003

	1999	2000	2001	2002	2003
	(000 tonnes)				
United States	6 372.0	6 275.0	(r) 5 260.0	(r) 5 600.0	5 630.0
China (1)	(r) 2 954.5	(r) 3 492.7	(r) 3 634.5	(r) 4 223.2	5 116.8
Japan	2 112.3	2 224.9	2 014.0	2 132.0	2 200.0
Germany	(r) 1 432.0	(r) 1 561.0	(r) 1 574.0	(r) 1 694.0	1 765.0
South Korea	813.9	822.5	849.6	(r) 920.4	981.9
Italy	734.6	780.3	796.0	825.7	955.6
India	569.5	(r) 589.8	(r) 589.1	(r) 602.6	805.6
Russia	(r) 563.1	(r) 690.4	(r) 767.5	(r) 819.0	802.5
France	770.6	(r) 775.6	(r) 739.6	(r) 764.4	763.6
Canada	777.2	799.5	742.5	747.3	735.7
Spain	494.0	525.6	507.8	532.6	595.6
Brazil	463.1	513.7	552.8	(r) 577.5	589.0
United Kingdom	581.0	588.0	560.0	560.0	570.0
Taiwan	464.1	501.6	321.3	407.2	430.0
Australia	344.2	(r) 346.4	(r) 329.5	(r) 315.1	341.7
Thailand	155.3	195.2	227.0	249.8	323.4
Belgium	350.0	340.6	327.3	333.1	315.0
Turkey	(r) 171.9	(r) 213.1	(r) 177.6	239.2	309.2
Bahrain	226.2	239.2	261.0	(r) 251.4	257.3
South Africa	125.0	175.7	(r) 207.6	186.0	246.4
Greece	212.5	230.0	217.5	(r) 220.4	244.6
Hungary	171.3	210.1	222.7	244.8	244.3
Austria	(r) 144.5	(r) 173.2	201.0	207.9	241.1
Norway	215.4	230.9	225.4	(r) 230.0	240.0
Venezuela	154.8	(r) 181.9	(r) 171.0	(r) 168.1	213.6
Indonesia	(r) 147.4	(r) 147.5	162.9	126.8	211.3
Switzerland	157.0	171.0	161.2	155.0	168.2
Poland	(r) 134.0	(r) 150.0	(r) 146.0	(r) 175.0	168.0
Romania	113.6	125.7	112.5	(r) 111.0	163.4
Netherlands	155.0	155.0	155.0	155.0	157.0
Iran	123.2	116.8	(r) 145.5	(r) 142.5	150.0
Malaysia	(r) 130.6	149.7	152.5	149.4	125.9
Sweden	153.8	167.9	128.1	125.0	125.6
Mexico	88.5	101.0	113.1	116.0	118.0
Czech Republic	65.7	77.6	88.3	106.0	105.3
Egypt	82.7	81.8	96.5	91.3	100.5
Slovenia	75.5	81.7	96.1	(r) 95.4	87.3
Portugal	82.0	78.0	66.9	78.0	78.1
Argentina	82.9	80.2	70.6	65.1	73.6
New Zealand	42.8	42.7	(r) 35.3	(r) 46.1	62.0
Denmark	38.4	41.5	43.4	55.0	59.5
Vietnam	17.4	21.3	36.7	(r) 53.5	58.0
Israel	44.0	44.8	38.0	46.4	53.0
Other Asia	43.0	38.0	40.0	45.0	48.0
Saudi Arabia	(r) 36.0	(r) 34.8	(r) 47.9	(r) 38.2	40.0
Colombia	27.4	32.1	30.0	(r) 35.8	39.2
Finland	35.5	38.9	37.7	(r) 31.5	30.2
Dubai	5.2	22.2	(r) 25.0	(r) 28.0	30.0
Cameroon	22.0	24.2	25.1	27.3	26.8
Philippines	(r) 33.5	(r) 32.4	25.2	28.5	26.0
Other America	18.1	19.9	24.5	(r) 24.5	25.0
Ukraine	50.0	(r) 23.0	(r) 23.5	(r) 23.5	24.0
Slovakia	34.1	36.4	34.9	(r) 26.8	23.9
Croatia	29.5	29.4	37.7	40.6	22.8
Pakistan	(r) 8.0	(r) 8.2	(r) 10.6	(r) 16.8	20.2
Lebanon	14.2	16.0	15.6	15.7	18.4
Chile	11.2	14.5	14.5	(r) 17.7	17.5
Bangladesh	(r) 16.0	(r) 16.0	(r) 16.4	(r) 17.0	17.0
Ghana	16.0	16.0	16.0	16.0	16.0
Bulgaria	8.0	8.6	18.1	15.0	15.0
Serbia and Montenegro	(r) 14.5	(r) 8.2	(r) 19.2	12.3	15.0
Other Africa	10.0	10.0	11.0	11.0	11.0
Nigeria	(r) 15.9	(r) 10.8	(r) 11.0	(r) 11.0	11.0
Singapore	4.3	4.1	13.6	9.2	10.0
Morocco	3.5	5.7	(r) 5.9	(r) 7.1	7.5
Other Europe	2.0	2.0	2.0	2.0	7.3
Tunisia	(r) 4.0	(r) 4.5	(r) 2.5	(r) 3.5	4.0
Ireland	8.2	10.2	7.8	4.8	3.8
Iceland	3.0	3.0	3.0	3.2	3.0
Peru	0.9	1.3	1.1	(r) 2.5	2.7

TABLE 9 (cont'd)

	1999	2000	2001	2002	2003
	(000 tonnes)				
Macedonia	2.5	2.4	1.8	1.1	2.0
North Korea	(r) 1.8	(r) 1.6	(r) 1.0	(r) 1.0	1.0
Cuba	(r) 0.6	(r) 0.8	(r) 0.5	1.0	1.0
Albania	1.0	1.0	1.0	1.0	1.0
Iraq	1.0	1.0	1.0	1.0	1.0
Algeria	(r) 5.0	6.0	(r) 4.1	(r) 3.3	0.8
Kazakhstan	(r) 0.0	(r) 0.0	(r) 0.0	(r) 0.0	0.0
Belarus	(r) 0.0	(r) 0.0	(r) 0.0	(r) 0.0	0.0
World total	23 593.4	24 996.1	23 854.1	25 449.1	27 505.8
% change from previous year	6.7	5.9	-4.6	6.7	8.1

Source: International Consultative Group on Nonferrous Metals Statistics.

(r) Revised.

(1) Starting in 1997, Hong Kong is included with China.

TABLE 10. ABBREVIATIONS OF COMPANY NAMES AND INSTITUTIONS, AND WEB SITES, USED IN THIS REPORT

Company	Abbreviation	Web Site Address
Alcan Inc.	Alcan	www.alcan.com
Alcoa Inc.	Alcoa	www.alcoa.com
Alcoa World Alumina and Chemicals	AWAC	www.alcoa.com
Aldoga Aluminium Smelter Pty Ltd.	Aldoga	www.aldoga.com
Aluar Aluminium Argentino S.A.I.C.	Aluar	www.aluar.com.ar
Alum SA Tulsea	Alum SA Tulsea	www.alumtulcea.com
Alumina do Norte do Brasil S.A.	Alunorte	www.cvrd.com.br
Alumina Limited	Alumina Limited	www.aluminalimited.com
Alumina Partners of Jamaica	Alpart	www.kaiseral.com
Aluminerie Alouette Inc.	Alouette	www.alouette.com
Aluminerie de Bécancour Inc.	A.B.I.	www.alcoa.com
Aluminium Association of Canada	The Association	www.aia.aluminium.qc.ca
Aluminium Bahrain B.S.C.	Alba	www.albasmelter.com
Aluminum Company of Egypt	Egyptalum	www.egyptalum.com.eg
Aluminum Corporation of China Ltd.	Chalco	www.chinalco.com.cn
Atlantsal hf	Atlantsal	www.atlantsal.is
Bharat Aluminium Company Limited	Balco	www.balcoindia.com
BHP Billiton	BHP	www.bhpbilliton.com
Brunei Economic Development Board	BEDB	www.bedb.com.bn
Cambior Inc.	Cambior	www.cambior.com
Century Aluminum Company	Century Aluminum	centuryca.com
Coega Smelter	Coega	smelter.csir.co.za
Columbia Ventures Corporation	Columbia Ventures	www.nordural.is
Comalco Limited	Comalco	www.riotinto.co
Companhia Brasileira de Alumínio	CBA	www.aluminiocba.com.br
Companhia Vale do Rio Doce S.A.	CVRD	www.cvrd.com.br
Corporación Venezolana de Guayana	CVG	www.cvg.com
CVG Alcasa	Alcasa	www.aluminio.com.ve
CVG Bauxilum	Bauxilum	www.bauxilum.com
CVG Venalum	Venalum	www.venalum.com.ve
Dubai Aluminium Company Limited	Dubal	www.dubal.ae
East Hope Group	East Hope Group	www.easthope.com.cn
Elkem ASA	Elkem	www.elkem.com
Federation of Aluminium Consumers in Europe	FACE	www.facealuminium.com
Glencor International AG	Glencore	www.glencore.com
Global Alumina Products Corporation	GAPCO	www.globalalumina.com
Grupo Votorantim	Votorantim	www.votorantim.com.br
Hindalco Industries Limited	Hindalco	www.adityabirla.com
Indian Aluminium Limited.	Indal	www.indal.com
International Aluminium Institute	IAI	www.world-aluminium.org
KTD L.L.C.	KTD	www.ktdal.com
Magyar Aluminium Rt.	Magyar Aluminium .	www.mal.hu
Marubeni Corporation	Marubeni	www.marubeni.com
Minmetals Nonferrous Metals Co., Ltd.	Minmetals	www.minmetals.com
National Aluminium Company Limited	Nalco	www.nalcoindia.com
Noranda Inc.	Noranda	www.noranda.com
Norsk Hydro ASA/Hydro Aluminium a.s.	Norsk Hydro or Hydro Aluminium	www.hydro.com
NovaPb	NovaPb	www.novapb.com
Novelis Inc.	Novelis	www.novelis.com
Ormet Corporation	Ormet	www.ormet.com
PT. Antam Tbk	Antam	www.antam.com/News/news.htm
Queensland Alumina Limited	QAL	www.qal.com.au
Russian Aluminium (Russky Aluminii)	Russal	www.rusal.com
Saudi Arabian Mining Company	Ma'aden	www.maaden.com.sa
Sherwin Alumina Company	Sherwin Alumina	www.sherwinalumina.com
Siberian-Urals Aluminium Company	SUAL	www.sual.com
Sibirsky Aluminium	Sibirsky (Russian Aluminium)	www.sibirskyaluminium.com
Slovalco A.S.	Slovalco	www.slovalco.sk
Société Générale de financement du québec	SGF	www.sgfqc.com
Sterlite Industries (India) Ltd.	Sterlite	www.balcoindia.com
Talum D. D. Kidricevo	Talum	www.talum.si
The Aluminum Association, Inc. (USA)	Aluminum Association	www.aluminum.org
Tomago Aluminium Pty Ltd.	Tomago	www.tomago.com.au
Vietnam National Mineral Corp.	Vimico	..
Worsley Alumina PTY. LTD	Worsley Alumina	worsley.geo.net.au

.. URL not available.

Note: Feedback on missing or changed web site addresses would be welcome.

	Aluminio do Maranhao - Alumar	Studies and permitting on expansion of refinery from its current capacity of 1.3 Mt/y to 3.3 Mt/y are under way.					CWS
	Juruti mine - Para State - Alcoa	Studies and permitting processes under way for a potential new mine and possible refinery. Decision expected in 2005.					CWS
	Mira - CBA	Expansion of power facilities, mining and refining operations under way.					CWS
China	Chongqing - Nanchuan Minerals Group	Increasing new refinery capacity to 150 000 t/y from 70 000 t/y. Potential for expansion to 500 000 t/y (partly chemical production).	40 000	80 000			MB Mar. 30, 2004, April 5, 2004, Antaika Mar. 2005
	Dengfeng - Zhongmei Aluminum Co. Ltd.	New 1.2-Mt/y refinery started construction in Henan province. First phase 300 000 t/y to be in production in mid-2005.		100 000	200 000		Reuters April 4 and 5, 2004, Antaika April 2004
	East Hope Group - Henan	Proposal for a new 1-Mt/y alumina refinery in Henan.					MB June 26, 2003, Antaika Jan.-Feb. 2004, Interfax July 26, 2004
	Guangxi Guixi Huayin Aluminium Corp. Chalco/MinMetals	Work started on new 1.6-Mt/y refinery in Guangxi Region near Baise. Companies seeking government approvals. Production expected in 2006.					CWS, PMW June 2/03, MB Jan. 6/03, Jan. 31/05, Reuters April 4/04, Antaika Jan. 2005
	Guizhou refinery - Chalco	Construction started on 400 000-t/y expansion of capacity to 1 200 000 t/y.	100 000	400 000			MB April 15, 2004, Antaika Feb.-Mar. 2004
	Henan Yima Coal Group	New refinery started up late 2004; ramping up production in 2005.					Antaika Mar. 2005
	Kaili - Guizhou Kaisheng Aluminum Co., Ltd.	Purchase of small existing refinery with potential expansion to 120 000 t/y.					Antaika Mar. 2004
	Lianyungang City - Changxin International Trade Co. and Liancheng Aluminium	Agreement signed on the development of a 2.4-Mt/y refinery and 300 000-t/y smelter in Jiangsu Province.					PMW Nov. 24, 2003, MB Oct. 6, 2003, Antaika April 2004
	Manchi Yixiang Aluminum Co., Ltd.	100 000-t/y greenfield refinery started up early 2004. Expansion planned to 600 000 t/y.	75 000	25 000			Antaika April 2004
	Nanchuan - Chalco	Chalco is working on a proposal for an 800 000-t/y greenfield alumina refinery.					www.antaika.com Nov. 19, 2004
	Nanchuan - Dingtai Tuoyuan Aluminum Co.	Construction started on greenfield 300 000-t/y refinery. First phase production from 150 000 t/y expected to start in mid-2005.		100 000	100 000	100 000	Antaika April 2005
	Pingdingshan Huanyuan Chemical Engineering Co.	New 300 000-t/y refinery started up mid-2003.	50 000	250 000			Antaika Mar. 2005
	Pingguo refinery joint venture with Alcoa - Chalco	Joint venture delayed. Expansion of capacity to 850 000 t/y from 400 000 t/y completed. Expansion of plant to 1.25 Mt/y approved by government. Completion of construction expected in 2006.	230 000		150 000	250 000	PMW July 7, 2003, MB Jan. 19, 2004, CWS

TABLE 11 (cont'd)

Country	Project/Company	Comments	Estimated Change (Alumina) in 2004	Estimated Change (Alumina) in 2005	Estimated Change (Alumina) in 2006	Estimated Change (Alumina) in 2007	Reference
				(t/y)			
	Shandong Aluminium Co.	Expanding capacity of its two plants to 1.1 Mt/y. Seeking investors and approvals for expansion of capacity from 1.1 Mt/y to 1.5 Mt/y by 2005.	100 000	150 000			PMW Dec. 8, 2003, Antaika Feb.-Mar. 2004
	Shanxi - Chalco	Construction started on new refinery with a capacity of 800 000 t/y. Completion expected in 2005.		300 000	500 000		CWS
	Shanxi - Jiaokou Aluminum Co., Shandong Fengchen Mining Group Co., Gerald Metals	Construction started on new refinery with a capacity of 300 000 t/y. Completion of phase one, 150 000-t/y capacity expected in 2005.			150 000		Antaika Sept. 2004
	Shanxi Yangquan Coal Group	Construction started on 1.2-Mt/y alumina refinery. First phase 400 000-t/y production expected in 2006.			200 000	200 000	Antaika Sept. 2004
	Xinzhou - Chalco and Shandong Luneng Group	Agreement on potential 1-Mt/y refinery.					Antaika April 2004
	Zhengzhou	Construction started on 700 000-t/y alumina refinery. Production expected in late 2005.	100 000	250 000	450 000		ANTAIKE Feb. 2005
	Zhongzhou refinery - Chalco and others	Expansion by 300 000 t/y completed. Construction started on second phase with capacity of 300 000 t/y.	300 000	100 000	200 000		CWS
Ghana	Volta - Ghana Government/Alcoa	Agreement between government and Alcoa on restart of smelter and studies on mine, feasibility of a new 1.5-Mt/y refinery and upgrades to facilities.					CWS, www.ghanaweb.com, Dow Jones Jan. 26, 2005
Guinea	Friguia refinery - Russian Aluminium	Detailed feasibility study for doubling capacity to 1.4 Mt/y to be completed in 2005. Study carried out by Hatch Associates and All-Russia Aluminium and Magnesium Institute (VAMI). Potential completion in 2007.					CWS
	New refinery - Alcan and Alcoa	Studies under way and discussions/agreements with Government of Guinea for a 1.5-Mt/y refinery. Prefeasibility studies to be completed in 2005; production possible in 2008.					CWS Dec. 22, 2004
	Global Aluminium Products Corporation (Gapco)	Potential new 2.8-Mt/y alumina refinery to start operation in 2008 and full capacity to be reached in 2009. Initial work on dredging of the port to be completed in 2005. Agreements with China Aluminium Group and with Dubai each for a potential 25% equity in the project and 25% of refinery output. Potential for expansion to 4.2 Mt/y.					CWS

	Dian-Dian - Rusal	Preliminary feasibility study for new 1.4-Mt/y refinery completed.				CWS
	Kinda - Rusal	Planning under way for increase in output from 2.1 Mt/y to 3 Mt/y.				CWS
Guyana	Linden Mining Enterprises	Cambior assumed management of bauxite operations and completed transactions to own 70% of OMAI Bauxite Mining Inc. Plans to expand the operation into other non-metallurgical products, as well as into metallurgical bauxite, based on markets.				CWS
	Bauxite Co. of Guyana Inc. - Russian Aluminum - Government of Guyana	Memorandum of Understanding to develop bauxite industry of Guyana; Rusal purchase of shares in Aroaima Mining Co. with expansion of bauxite output to 2.5 Mt/y.				CWS, MB Feb. 12, 2004
India	Damanjodi - Nalco	Received permission to expand alumina capacity at Damanjodi to 2.1 Mt/y from 1.6 Mt/y and bauxite production to 6.3 Mt/y from 4.8 Mt/y. Work to be completed in 2008.				CWS, pib.nic.in/release/release.asp?relid=4382&kwd=ALUMINIUM+PRODUCTION+
	Lanjigarh, Orissa - Vedanta Alumina (Sterlite)	MOU with Orissa government on construction of new 1.4-Mt/y refinery with associated mine and 90-MW power generation. Construction started and production expected in 2008.				CWS, MB Feb. 10, 2005
	Orissa - BHP	Proposal for a new 1-Mt/y alumina refinery.				www.telegraphindia.com
	Muri and Belgaum - Indal	Expansion of mines and refineries under way to a combined capacity of 1.2 Mt/y of metallurgical alumina from current 500 000 t/y. Feasibility studies under way for further expansion of Belgaum, including specialty alumina production.	200 000	500 000		CWS
	Renukoot - Hindalco	Completed expansion and debottlenecking of refinery to capacity of 660 000 t/y. Work on further debottlenecking continuing.	70 000	30 000	30 000	CWS
	Utkal - Indal/Alcan	Bauxite mine and alumina refinery in Orissa. Initial refinery capacity 1.1-1.5 Mt/y; second stage to 3 Mt/y. Approvals received subject to addressing community concerns.				CWS
Indonesia	Alumina Tayan - PT Aneka Tambang	Proposal for a new mine at Kalimantan and a new greenfield alumina refinery to produce chemical-grade alumina.				CWS
Jamaica	Alumina Partners of Jamaica - Kaiser and Hydro Aluminium	Completed expansion of Alpart refinery from 1.45 Mt/y to 1.65 Mt/y in 2003.	50 000	80 000		CWS, AMM Nov. 25, 2003
	St. Ann Bauxite Company - Falconbridge/Century	A subsidiary jointly owned by Falconbridge and Century purchased Kaiser's 49% interest in Kaiser Jamaica Bauxite Co. Company plans to expand mining operations.				CWS

TABLE 11 (cont'd)

Country	Project/Company	Comments	Estimated Change (Alumina) in 2004	Estimated Change (Alumina) in 2005	Estimated Change (Alumina) in 2006	Estimated Change (Alumina) in 2007	Reference
	Clarendon refinery - AWAC and Jamalco	Alcoa and the Government of Jamaica signed an agreement in principle on an expansion of the refinery at Woodside from 1.25 Mt/y to at least a capacity of 2.8 Mt/y. A final decision on the project is expected in 2005 with potential completion in 2007. (Earlier 250 000-t/y expansion completed in November 2003.)	175 000	50 000			CWS
				(t/y)			
Romania	BBG Alum Tulcea - Balli Group	Production raised from 400 000 t/y to 550 000 t/y in early 2004; plans to increase to 600 000 t/y by end of 2004.	125 000	75 000			AMM June 9, 2003, MB Mar. 8, 2004
Russia	North Onega - Rusal	Company considering development of new 1.4-Mt/y refinery with development of bauxite deposits.					CWS
	Timan bauxite mine/refinery - Sual/Rusal	Mine at Sredne-Timan in Komi Republic under expansion. Expected capacity to eventually reach 6 Mt/y of bauxite. Feasibility study on expansion of mine to 2.5 Mt/y with eventual expansion to 6.5 Mt/y. Joint-venture agreement with Rusal on new 1.4-Mt/y refinery. Possible 300 000-t/y to 500 000-t/y smelter to be associated with mine. Work started on refinery with expected completion in 2008.					CWS, MB Mar. 14, 2005
	Achinsk alumina refinery - Rusal	Upgrading capacity from 1 Mt/y to 1.2 Mt/y.		170 000			CWS
	Arkhangelsk mines and refinery - Rusal	Rusal planning to develop bauxite deposits to supply its refineries and, in the longer term, a new 1-Mt/y refinery.					CWS, MB Dec. 20, 2004
Saudi Arabia	Az Zabirah Aluminium - Ma'aden	Feasibility study for a mine, 1.4-Mt/y refinery and 600 000-t/y smelter.					CWS
Suriname	Suralco refinery - Alcoa/BHP Billiton	Expansion of refinery by 250 000 t/y to 2.2 Mt/y completed in early 2005. Exploration under way for expansion of ore reserves and potential further expansion of refinery.	100 000	100 000	50 000		CWS, BNA Jan. 4, 2005, Feb. 28, 2005, Mar. 1, 2005
Ukraine	Nikolayev alumina refinery - RUSAL	Upgraded capacity to 1.3 Mt/y from 1.1 Mt/y completed in March 2004. Expansion to 1.6 Mt/y to start in 2005.	150 000	50 000		250 000	CWS
United States	Burnside - Ormet Aluminum	Refinery re-opened in December 2003.	550 000	50 000			Platts Nov. 3, 2003
	Gramercy refinery - Noranda/Century	A subsidiary company jointly owned by Noranda and Century purchased refinery from Kaiser.					CWS

	Alcoa - Point Comfort	Alumina production increased to 2.3 Mt/y from 1.8 Mt/y in 2003.	300 000		CWS
	Sherwin Alumina Company	China Minmetals Nonferrous (China Minmetals Corp.) purchased 51% of the alumina plant in April 2004.			CWS
Venezuela	Bauxilium - CVG Bauxilium/Alcan	Refinery debottlenecking/expansion under way to 2.15 Mt/y from 1.95 Mt/y.	20 000	100 000	CWS, BNA Oct. 3, 2003, MB Mar. 10, 2004
	Guyana bauxite deposit - Rusal/CVG	Work under way/agreement with government on potential mine and 2.0-Mt/y alumina refinery with possible smelter.			CWS, BNA Nov. 30, 2005
Vietnam	Dak Nong - Chalco and others	Preliminary feasibility study for new mine/refinery.			CWS

Source: Natural Resources Canada, based on published reports.

Abbreviations: Antaika - China Metal Market; BNA - Business News Americas; CWS - Company's web site (see table 10); LMA Light Metals Age; MB - Metal Bulletin; PMW - Platts Metals Week.

TABLE 12. SMELTER PROJECTS

Country	Project/Company	Comments	Projected Change in 2005	Projected Change in 2006	Projected Change in 2007	Potential Change Longer Term	References
				(t/y)			
Argentina	Puerto Madryn smelter - Aluar	Work continues for expansion of smelter from 265 000 t/y to 400 000 t/y. Construction of new power line expected completion in 2005.				220 000	CWS, BNA Nov. 25, 2004
	Punta Quilla smelter - Aluar	Initial studies started for a new smelter in state of Santa Cruz in 2004.				300 000	BNA Sept. 10, 2004, Reuters Nov. 11, 2005
Australia	Aldoga Consortium	Proposed 420 000-t/y smelter near Gladstone, Queensland. Project on hold.					CWS, MB Nov. 12, 2004
	Kurri Kurri - Hydro Aluminium	Improvements in efficiency under way, extension of potroom.	7 000	8 000			CWS, www.abare.gov.au
	Portland smelter - Alcoa	Consideration of possible third potline to expand capacity of smelter from 360 000 t/y to 560 000 t/y.					CWS
	Tomago smelter - Tomago Aluminium Pty Ltd.	Upgrading amperage to AP22; 70 000-t/y expansion in capacity to 530 000 t/y from 460 000 t/y. Completion expected in 2006.	10 000	30 000	20 000		CWS
Bahrain	Aluminum Bahrain	Expansion with extension of existing and construction of new potline under way with capacity increase from 520 000 t/y to 830 000 t/y. Construction on new potline started in 2003, first metal produced in early 2005, with full production expected in mid-2005. Potential sixth potline to expand capacity by a further 307 000 t/y.	225 000	85 000		300 000	CWS, Gulf News Mar. 1, 2005
Brazil	Alumar Sao Luis - Alcoa and BHP Billiton	Expansion of capacity under way from 375 000 t/y to 435 000 t/y. Full production expected in first half of 2006.		35 000	30 000		CWS, BNA Mar. 14, 2005
	Sorocoba smelter - Cia Brasileira de Aluminio	Expansion of smelter from 230 000 t/y in 2001 to 340 000 t/y completed in October 2003. Capacity to reach 385 000 t/y in 2005.	15 000	45 000	50 000		CWS
Canada	Alouette smelter expansion - Alouette Inc.	Expansion of smelter under way; completion expected in 2005. Discussed in text.	225 000	75 000			CWS
	Baie Comeau - Alcoa	Modernization on hold. Discussed in text.					CWS
	Deschambault smelter (Lauralco) - Alcoa	Expansion on hold. Discussed in text.					CWS
	Becancour smelter	Strike and closure of two potlines. Discussed in text.	85 000	50 000			CWS
	Jonquière smelter - Alcan	Closure of 90 000-t/y Söderberg capacity.	-15 000				CWS

China	Baotou - Inner Mongolia - East Hope Group	Construction of first phase of 250 000 t/y completed late 2003. Second phase 250 000 t/y construction started with captive power plant. Eventual capacity may rise to 1 Mt/y. Problems with supply of alumina; smelter operating at lower rates.	135 000		250 000	PMW Mar. 22, 2004, MB June 4, 2003, Antaika April 2004
	Inner Mongolia - Baotou Aluminium Group	Acquired by Chinalco. 50 000-t/y expansion to 200 000 t/y. Modernization of Soderberg capacity, with expected 90 000-t/y increase in capacity. Potential for further expansion with new 250 000-t/y smelter.	50 000	40 000	250 000	CWS, AMM June 19, 2003
	Fujian Nanping Aluminium Co.	New 73 000-t/y prebake smelter commissioned in July; closed 30 000-t/y Soderberg.	15 000			MB July 8, 2004
	Fushun Aluminium Company	Expansion by 50 000 t/y completed in 2003.	10 000			MB Nov. 21, 2003
	Henan Mianchi Zhongmai Al-Power Co., Ltd. (Huanghe Al-Power Group), Huanghe Aluminium and Power Group)	Expanded capacity by 70 000 t/y; starting production in December; total capacity now 125 000 t/y.				PMW, Nov. 24, 2003
	Inner Mongolia - Tongliao Huomei Hongjun Aluminium and Power Company	Construction under way on new smelter with eventual capacity of 400 000 t/y. First phase (100 000 t/y) expected to be completed late 2004.	90 000			PMW Dec. 22, 2003
	Jiaozuo Wanfang Aluminium Co.	Smelter expansion completed to 250 000 t/y in 2003.	20 000			AMM June 19, 2003, MB July 8, 2003, Interfax Mar. 1, 2004
	Lanzhou Aluminium Co.	Work started on a new 150 000-t/y smelter adjacent to existing plant.		150 000		Antaika Feb. 2005, MB Aug. 14, 2003, Nov. 5, 2003, Dec. 8, 2003
	Linzhou Aluminium	Expanded capacity from 70 000 t/y to 105 000 t/y.				PMW Dec. 1, 2003
	Ningxia Jianing Aluminum Co., Ltd. - Alcan/Qingtongxia Aluminum Group Co.	In 2003, Alcan received government approval and signed a definitive joint-venture agreement for a 50% interest in a modern 150 000-t/y smelter. Agreement also provides long-term power supply and for the purchase of up to an 80% interest in a new 250 000-t/y smelter currently under construction. Joint venture established with Alcan. Alcan owns third potline and 50% interest in 1200-MW Daba power plant. Commissioning of new 150 000-t/y potline delayed until late 2004 (see Qingtongxia).	150 000		280 000	CWS, Antaika April 2004/Jan. 2005
	Pingguo - Chalco - joint venture with Alcoa	Waiting for approvals for proposed tripling of capacity of the Pingguo aluminum smelter from 130 000 t/y to 400 000 t/y. Power plant purchase approved by government. Power shortages reduced production in 2004.	25 000			AMM Sept. 17, 2003, Interfax Mar. 15, 2004, Antaika Feb. 2004

TABLE 12 (cont'd)

Country	Project/Company	Comments	Projected Change in 2005	Projected Change in 2006	Projected Change in 2007	Potential Change Longer Term	References
				(t/y)			
	Qinghai Aluminum smelter	Completion of expansion of smelter by 85 000 t/y in early 2005.	75 000	10 000			MB Nov. 2004, Antaike Sept. 2004
	Qingtongxia Aluminum Company	New 250 000-t/y smelter currently under construction.	100 000	150 000			CWS
	Sanmenxia Tianyuan Aluminium Group Co. Ltd.	Completed 50 000-t/y expansion in mid-2003.					AMM June 19, 2003, MB Dec. 8, 2003
	Shanxi smelter - Chalco/Shanxi Zhangze Electric Power Co.	New 280 000-t/y smelter planned for 2005 in Hejin with new 600-MW power plant. Received state approval; production expected in mid-2005.	100 000	180 000			CWS
	Yichuan Aluminum smelter	Expansion of 200 000 t/y completed in 2004 to total of 400 000-t/y capacity. Power constraints slowing start-up.	70 000	130 000			Antaike Mar. 2004, Nov. 2004, Feb. 2005
	Yunnan Aluminium	Completed expansion and modernization to a capacity of 300 000 t/y.	120 000				MB Feb. 2, 2005, Antaike April 2004, Feb. 2005
	Zhengzhou - Chalco	Construction of 280 000-t/y smelter under way.		280 000			Antaike Sept. 2004
	Zhongfu Aluminum Co. Ltd.	Expansion of smelter under way from 120 000 t/y to 250 000 t/y. Expected completion in 2005.		130 000			Antaike Jan. 2005
Dubai	Dubal	Start of expansion/addition of additional potline (no. 7) to expand current capacity of 686 000 t/y to 760 000 t/y. Completion expected in mid-2005. SNC-Lavalin awarded contracts on feasibility studies for upgrades to three potlines.	25 000	50 000			CWS
Egypt	Egyptalum	Expansion and modernization under way. Capacity to be raised by 50 000 t/y by first quarter of 2004 along with conversion of potline no. 5 to prebake technology. Plans to fully modernize smelter and increase capacity to 350 000 t/y from current 245 000 t/y.	10 000	50 000	50 000		CWS
Ghana	Volta - Ghana Government/Alcoa	Agreement between government and Alcoa on restart of smelter and studies on mine, refinery and upgrades to facilities.	30 000	40 000			CWS, www.ghanaweb.com, Dow Jones Jan. 26, 2005
Iceland	Atlantsal Ltd.	Feasibility and environmental impact studies and agreements on power for an originally proposed 360 000-t/y smelter. Smelter size reduced to a staged start-up of 180 000 t/y, work for new power facility.				180 000	CWS

	Fjarðaal - Alcoa	Construction on new 322 000-t/y smelter started in 2004; metal production expected in second quarter of 2007.		150 000	172 000	CWS
	Norðurál - Century Aluminum Company	Century purchased smelter from Columbia Ventures. Energy contracts/funding in place and expansion under way from 90 000 t/y to 212 000 t/y by mid-to-late 2006 and to 220 000 t/y in 2007. Power agreement in early 2005 to allow expansion of capacity to 260 000 t/y in fourth quarter of 2008.	60 000	60 000	50 000	CWS
India	Angul - Nalco	Completion of expansion to 345 000 t/y. Government approved expansion of capacity from 345 000 t/y to 460 000 t/y.	10 000		115 000	CWS, www.indiaonline.com
	Hirakud - Indal	Smelter expansion to 65 000 t/y completed. Modernization and further expansion to 146 000 t/y under way. Power plant expansions under way to support smelter.	35 000	40 000		CWS
	Jarkhand - Hindalco	Memorandum of Understanding on a proposed 325 000-t/y smelter with state government. Coal mine and 600-MW coal-fired power plant associated with smelter in Latchar.			325 000	CWS, www.telegraphindia.com
	Korba - Bharat Aluminium	Expansion of smelter under way from 100 000 t/y to 350 000 t/y. Expected completion in March 2006.	90 000	160 000		CWS, Antaike Feb. 2005
	Orissa - Hindalco	Memorandum of Understanding on potential 260 000-t/y smelter with associated 1-Mt/y refinery and 650-MW power plant.			260 000	CWS
	Orissa - Vedanta Resources	Work under way on a new 500 000-t/y aluminum smelter near Orissa refinery and a 1000-MW power station. Work expected to be carried out over the next 3-5 years.			500 000	CWS, MB Feb. 10, 2005
	Renukoot - Hindalco	Expansion of capacity by 120 000 t/y to 345 000 t/y completed in 2003. Further debottlenecking expected to increase capacity to 360 000 t/y in next two years.	10 000	10 000		CWS
Indonesia	Asahan - Inalum	Water supply to hydro facility improved. Plans to run smelter at increased capacity.				Reuters
Kazakhstan	Pavlodar - regional government/Corica AG/Chalco	Regional government announced possible new 250 000-t/y aluminum smelter. First phase of 125 000 t/y expected to start production in 2007 and reach full capacity in 2008.		60 000	65 000	Interfax June 28, 2004
Malaysia	Bintulu - Sarawak	Preliminary study for proposed 500 000-t/y smelter, based on new hydro-electric project at Bakun. Project postponed by government.				MB Jan. 12, 2004, www.msnbc.msn.com/id/6214321/site/newsweek
Mexico	Almexa Aluminio smelter	Smelter closed in August 2003.				BNA Sept. 25, 2003

TABLE 12 (cont'd)

Country	Project/Company	Comments	Projected Change in 2005	Projected Change in 2006	Projected Change in 2007	Potential Change Longer Term	References
				(t/y)			
Mozambique	CVRD - Moatize	Prefeasibility study for potential 500 000-t/y smelter related to Moatize steam coal and coking coal project. Production possible in 2009.				500 000	CWS, MB Nov. 22, 2004
	Mozal - Billiton and partners	Expansion of capacity of the Mozal smelter completed. Reached full production in August 2003.					CWS
Norway	Mosjøen - Elkem/Alcoa	Modernization and expansion completed in mid-2003. Capacity now 188 000 t/y compared to 120 000 t in 2002.					CWS
	Sunnal - Hydro Aluminium	Expansion to 360 000-t/y capacity completed in 2004.	55 000				CWS
Oman	Sohar - Alcan, Oman Oil Company, Abu Dhabi Water and Electricity Authority	Memorandum of Understanding on a proposed 325 000-t/y smelter, with a potential doubling. Subject to successful completion of agreements and financing. Construction may start in the second half of 2005 with first metal in 2007.				650 000	CWS
Qatar	Norsk Hydro/Qatar Petroleum	Proposed first-stage 570 000-t/y smelter to be built near Doha. Partners expect production in 2009, with potential to double the size in the longer term.				570 000	CWS
Romania	Alro smelter - Marco International	Expected completion of expansion to 300 000 t/y from 215 000 t/y in 2004.	35 000				MB Oct. 27, 2003
Russia	Bratsk smelter - Russian Aluminium	Modernization to prebake technology completed.	30 000				CWS
	Irkutsk smelter - Rusal	Feasibility studies for new 600 000-t/y smelter. Construction would start in 2006 with completion in 2009.				600 000	CWS
	Kandalaksha smelter - Sual Group	Approvals received from government for construction of a new 230 000-t/y smelter.					MB Feb. 20, 2004
	Khakassky - Rusal/Unified Energy Systems hydro-electric facilities and brownfield	Preparatory work for 350 000-t/y smelter addition.				350 000	CWS, MB Mar. 24, 2005
	Komi smelter - Sual Group	Hatch and Associates awarded contract for prefeasibility and engineering work on alumina refinery and smelter in 2002. Smelter capacity expected to be 300 000-500 000 t/y. Initial site work started by Sual. Discussions with potential partners.					CWS

	Krasnoyarsk smelter - Rusal	Modernization replacement of Soderberg technology with prebake technology, point feeders by 2007. Capacity to rise by 55 000 t/y.	20 000	35 000	CWS, PMW Mar. 22, 2004, LMA Feb. 2004
	Novokuznetsk - Rusal	Modernization to prebake technology started.			CWS
	Sayanogorsk - Rusal	Upgraded to boost capacity by 30 000 t/y in 2003. Second phase to increase production by 290 000 t/y in early 2006.	250 000	40 000	CWS, LMA Feb. 2004, PMW Mar. 22, 2004
	Sverdlovsk smelter - SUAL Group	Potential new 500 000-t/y smelter under study.		500 000	CWS, MB Feb. 10, 2005
	Uralsky smelter - SUAL Group	Potlines upgrade completed in 2003 to raise capacity by 35 000 t/y.			CWS, Interfax Jan. 20, 2005
Slovakia	Ziar-nad-Hronom - Slovalco A.S./Norsk Hydro	Expansion/upgrade of smelter completed in mid-2003.			CWS
Slovenia	Talum	Expansion and modernization under way of potline C. Capacity to rise to 120 000 t/y.	10 000		CWS
South Africa	Coega - Alcan	Proposed US\$2.2 billion, 660 000-t/y smelter near Port Elizabeth in South Africa. Alcan conducting a feasibility study for an AP30 or AP35 smelter; expected completion in mid-2005.		660 000	CWS
	Hillside smelter - BHP Billiton	Increased production from completion of smelter in 2004.	50 000		CWS
Tajikistan	Tajikistan - Rusal	Agreement signed in October with Tajikistan government for participation in hydro-electric facilities and feasibility studies for construction of new 200 000-t/y smelter, and expansion of existing smelter by 200 000 t/y.			CWS, AMM Feb.1, 2005, MB Feb. 1, 2005
Trinidad and Tobago	Smelter - Alcoa	Studies under way for proposed 250 000+ t/y smelter to use power from proposed electrical generation facilities using natural gas.		250 000	CWS
United States	Hannibal - Ormet	Closed two of six potlines in December 2003. Closed one potline in November 2004 and last two operating potlines in January 2005.	-100 000		CWS
	Wenatchee - Alcoa	Restart of two potlines in December 2004.	75 000	15 000	CWS
Venezuela	Alcasa - CVG	Sought financing/planning for a new potline (V) with additional 240 000-t/y capacity. Contract with Pechiney (Alcan) for engineering and procurement contracts.	10 000	240 000	CWS, BNA Dec. 29, 2004, Mar. 9, 2005, Mar. 23, 2005
	Venalum - CVG	Re-opened two potlines in 2003. Obtained financing for new potline (VI) with additional 285 000-t/y capacity.		200 000	85 000 CWS, BNA Mar. 23, 2005
	Vimico - Chalco	Feasibility studies for mine/refinery/smelter continuing.			www.vnagency.com.vn

Source: Natural Resources Canada, based on published media reports.

Abbreviations: AMM - American Metal Markets; BNA - Business News Americas; CWS - Company's web site (see Table 10); LMA - Light Metals Age; MB - Metal Bulletin; PMW - Platts Metals Week.