Aluminum

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Notes: This year, general material on aluminum has been removed from this document. For this material, please see last year's article (available on the Internet at www.nrcan.gc.ca/mms/cmy/index_e.html). Schoolnet material on aluminum is available at www.nrcan.gc.ca/mms/cmy/mfs_e.htm. General information for educators is available at www.nrcan.gc.ca/mms/scho-ecol/toc_e.htm. The abbreviations of company names used in this review are listed in Table 10 along with the Internet addresses of those companies.

Canadian 2001 primary metal production:	2.6 Mt
Value of primary production:	$5.8 billion[P]
World rank:	Fourth
2001 exports (unwrought):	$4.91 billion
Installed capacity:	2.7 Mt/y

Increases in production at existing and new facilities around the world did not offset reductions in metal production in the Americas. As a result, world production of primary and recycled aluminum decreased in 2001 to an estimated total of 32.4 Mt, compared to the record 32.9 Mt in 2000. Of this total, 24.5 Mt was primary material, compared to 24.6 Mt in 2000.

Aluminum prices declined throughout the year until November when prices started to recover (see the table opposite).

The alumina market continued a downward trend that started in 2000 as expansions and higher utilization rates of existing capacity increased supplies. *Metal Bulletin* reported that spot prices for metallurgical-grade alumina declined from US$165-$180/t in late 2000 to US$140-$150/t in early 2002.

PRIMARY ALUMINUM CASH PRICE, LONDON

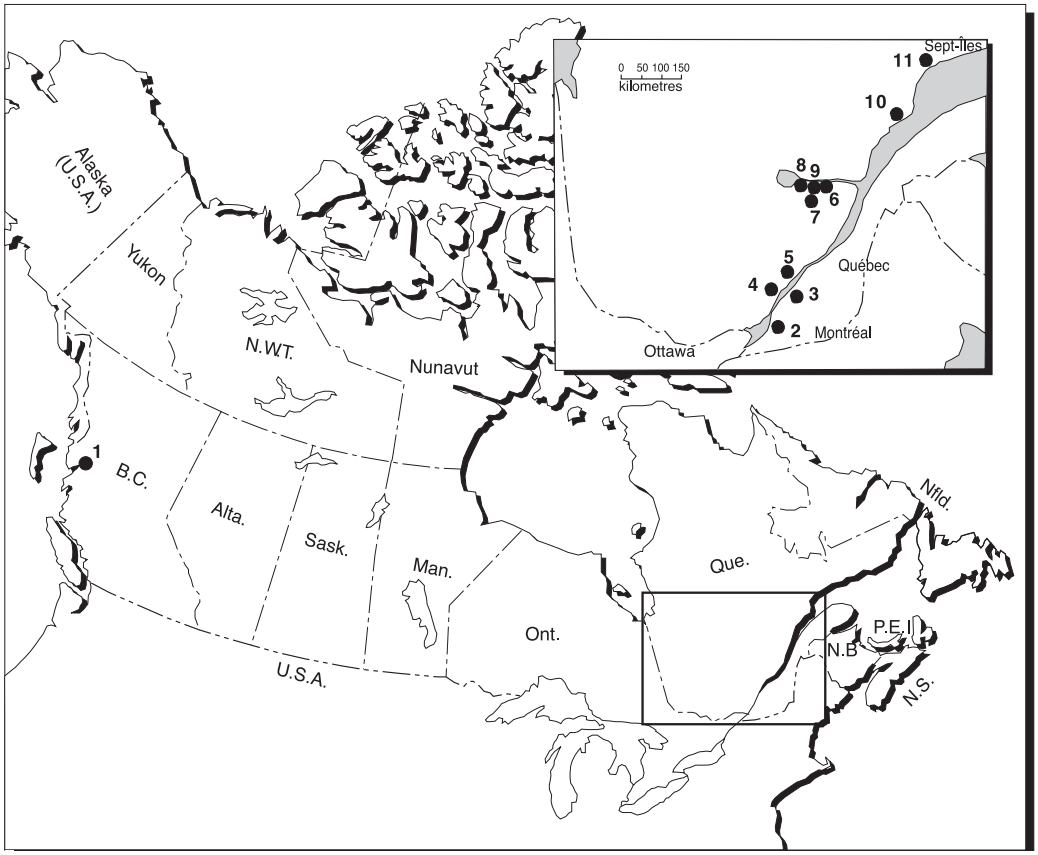
	1999	2000	2001
		US$/t (US¢/lb)	
Year average	1 362 (62)	1 555 (71)	1 444 (66)
Start of year	1 214 (55)	1 615 (73)	1 567 (71)
End of year	1 630 (74)	1 554 (71)	1 335 (61)
Year high	1 630 (74)	1 745 (79)	1 737 (79)
Year low	1 140 (52)	1 400 (63)	1 243 (56)

CANADIAN DEVELOPMENTS

Canadian production of primary aluminum increased by almost 9% to 2.583 Mt in 2001 from 2.374 Mt in 2000. The increase resulted from the ramp-up in production at Alcan's new 400 000-t/y smelter at Alma, Quebec, which reached full capacity production in September 2001. Alma replaces the 72 000-t/y Isle Maligne smelter, which was decommissioned in 2000. Canada now ranks fourth after China, Russia and the United States in terms of world production. The value of Canadian production, estimated at $5.8 billion, compared to $5.5 billion in 2000, reflects this increase in metal production. Monthly Canadian production statistics can be obtained on Natural Resources Canada's Internet site at www.nrcan.gc.ca/mms/efab.

The Canadian aluminum industry has made major strides in reductions in greenhouse gas emissions per tonne of aluminum produced over the last 10 years whereby the intensity of emissions has fallen from 5.1 t of CO_2 equivalent in 1990 to 3.4 t in 2000. However, total emissions have not fallen in the same ratio due to increased production volumes over the same time period. In January 2002, the Aluminium Association of Canada and the Government of Quebec signed a framework agreement on the voluntary reduction of an additional 200 000 t of greenhouse gas emissions from Quebec smelters by the end of 2007. The agreement proposes gradual, permanent reductions, allows for growth in the Quebec aluminum industry, and acknowledges the importance of aluminum's life cycle and contribution to the collective effort to reduce greenhouse gas emissions. Refer to the Association's web site at www.aia.aluminium.qc.ca for further details.

Figure 1
Aluminum Smelters, 2000



SMELTER	COMPANY	CAPACITY (t/y)
1. Kitimat	Alcan	272 000
2. Beauharnois	Alcan	50 000
3. Bécancour	A.B.I.	390 000
4. Shawinigan	Alcan	91 000
5. Lauralco Deschambault	Alcoa Lauralco	240 000
6. Grande-Baie	Alcan	196 000
7. Laterrière	Alcan	219 000
Alma	Alcan	400 000[a]
8. Isle-Maligne	Alcan	25 000[b]
9. Arvida, Jonquière	Alcan	248 000
10. Baie-Comeau	Canadian Reynolds Metals (Alcoa)	418 000
11. Alouette	Alouette	244 000

[a] Will reach full capacity in mid-2001. [b] The last potline closed permanently in March 2000.

Reported Canadian use of aluminum metal at the first processing stage, including recycled aluminum, was 1 015 640 t in 2000, up 2% from a revised figure of 999 242 t in 1999. Part of this increase was due to an increase in the number of companies reporting.[1]

Canada is the second largest aluminum-exporting country in the world after Russia. Canadian exports of primary smelter products in 2001 increased in quantity to 2.046 Mt valued at $4.914 billion, compared to 1.837 Mt valued at $4.52 billion (revised) in 2000. Of this amount, unwrought exports to the United States totalled 1.69 Mt valued at $4.11 billion, compared to 1.44 Mt valued at $3.62 billion in 2000 (Table 1a).

After discussions with Quebec aluminum companies on potential expansions, the Quebec government chose a proposal by Aluminerie Alouette Inc. and Alcan Inc. for use of a block of 500 MW of power at standard commercial rates. Aluminerie Alouette plans to invest $1.4 billion to expand the capacity of the smelter to 540 000 t/y. Preliminary work will begin this summer and the first metal is expected in 2005. In addition to the 2500 construction jobs, the expansion will create 340 new jobs at the smelter and 1500 jobs in other areas of the province. Further details are available on the company's web site at www.alouette.com.

As a result of Norsk Hydro ASA's purchase of VAW AG from E.ON., Norsk Hydro's subsidiary, Hydro Aluminium, now owns 20% of the Alouette smelter. Also, in February 2002, Alcan purchased the 20% share of the smelter held by the Société Générale de Financement du Québec. The other partners in the smelter include Aluminium Austria Metall Québec (20%), Corus Aluminium Québec Inc. (20%), Kobe Aluminium Canada Inc. (13.33%), and Marubeni Québec Inc. (6.66%).

Alcan Inc. celebrated the 100th anniversary of aluminum ingot production in Shawinigan, Quebec. The first primary aluminum ingot in Canada was produced in Shawinigan on October 22, 1901, by the Aluminum Company of America. The Aluminum Company of America in 1902 established a subsidiary, the Northern Aluminum Company, the precursor to the modern Alcan Inc.

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[1] NRCan Canadian aluminum use data for 2000 is from a survey based on responses from 178 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." These numbers may include limited amounts of run-around scrap. Work is under way to obtain clarification.

Alcan signed a Memorandum of Understanding with Hydro-Québec in February 2002 to explore opportunities ranging from optimizing hydro-electric resources in the Saguenay–Lac-St-Jean region to providing the power that would be required to support the eventual expansion of Alcan's Alma smelter.

Alcan's 275 000-t/y Kitimat smelter in British Columbia suffered from low water levels in the Nechako Reservoir and it announced a slowdown of up to 50% of the plant's capacity. Higher levels of snow reported during the winter may alleviate the situation and Alcan announced in June 2002 a partial restart from 180 000 t/y to 240 000 t/y for August 2002. During the slowdown, Alcan (www.alcan.com) worked on studies for an expansion and pilot work on converting the smelter to pre-bake technology.

Alcoa continued investigating the possibility of expansions at its existing smelters, including all three of its smelters in Canada. When two of these smelters were first constructed, planning was done to allow easy expansion. Alcoa participated in discussions on power with the Quebec government and Hydro-Québec and obtained a 100-MW block of power to modernize the Baie-Comeau smelter. Discussions continue on power supply to allow a doubling of the Deschambault smelter.

Alcoa signed a letter of intent with Newfoundland and Labrador Hydro and the Province of Newfoundland and Labrador on a joint review of a possible hydro-electric power expansion and aluminum smelter located in that province. The review was completed in late 2001 and discussions were continuing (www.alcoa.com and www.gov.nf.ca).

In British Columbia, KTD L.L.C., an independent U.S.-based consulting firm, completed a prefeasibility study for a new 360 000-t/y smelter to be located near Port Alberni, Vancouver Island. Results of the study indicated that the project was viable and work is under way to seek investors in the project. The proposed smelter will require 650 MW of power and new power generation and transmission infrastructure. In late 2001, KTD and officials from the town of Port Alberni expected a full feasibility study to start shortly, with full engineering and permitting studies expected to take up to three years followed by a 34-month construction period. A total of 650 direct jobs would be created with this proposed US$1.5 billion smelter. The smelter will use aluminum reduction technology from KTD. (Additional information is available at www.bchydro.bc.ca, www.alberni-region.com and www.ktdal.com.)

CANADIAN OUTLOOK

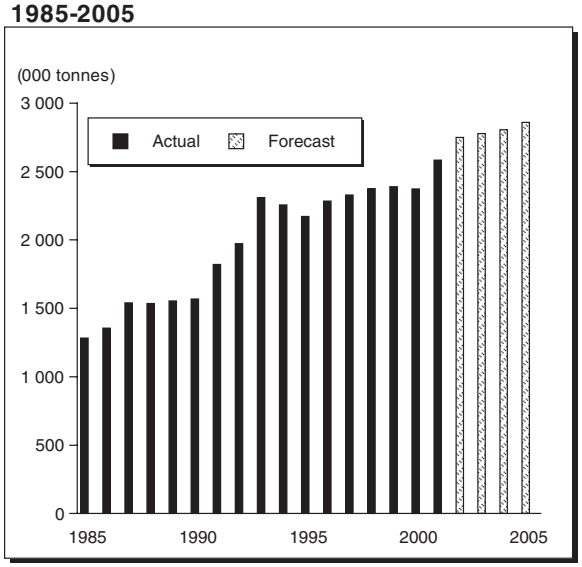
Canada is expected to produce about 2.7 Mt of primary aluminum in 2002, up from the 2.6 Mt

produced in 2001. The increase will result from the full production rates of the new Alma smelter; however, it will also depend on power availability to the Kitimat smelter in northern British Columbia.

Canada's production capacity increased to over 2.7 Mt/y in 2001 with the completion of Alcan's Alma smelter. With the announced expansion of the Alouette smelter, capacity is now expected to be above 3 Mt/y in 2005. Other smelter expansion projects in Quebec (at Bécancour, Baie-Comeau and Deschambault) are dependent on the negotiation of additional long-term power supply contracts with Hydro-Québec. Decisions and the results of work on possible new capacity in British Columbia and in Newfoundland and Labrador are still pending.

In 2001, Canada's reported use of aluminum is expected to increase slightly from that used in 2000. Canada ranks sixth in primary aluminum use (see Table 9).

Figure 2
Canadian Primary Aluminum Production, 1985-2005



Source: Natural Resources Canada.

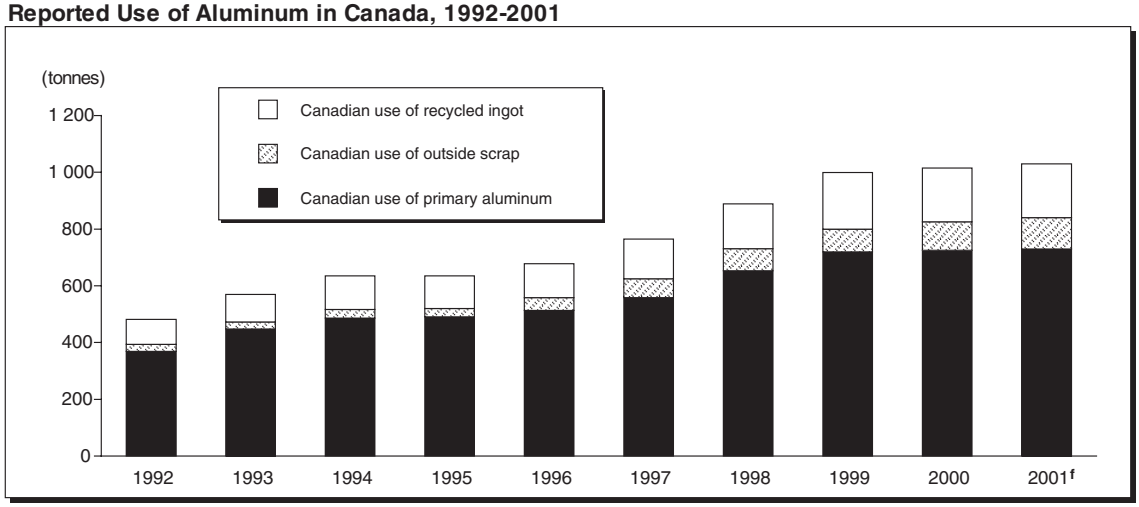
WORLD DEVELOPMENTS

China became the largest producer of primary aluminum in the world in 2001. Expansions and new projects, generally in incremental amounts, continue within the Chinese industry. China Aluminium Corp. (Chalco) issued shares in a public offering, in part to fund further expansion of its interests. As a result, the rate of expansion in Chalco's capacity may continue to accelerate. The State Development Planning Commission of the Chinese government has been reported as trying to slow the growth in production rates; however, expansions already under way will ensure China's lead in aluminum production.

A decline in the use of metals and metal-containing products with expanded production elsewhere countered much of the effect of production cutbacks in the Americas in 2001.

In 2001, producers continued to focus on cost reduction and increased competitiveness through

Figure 3
Reported Use of Aluminum in Canada, 1992-2001



Source: Natural Resources Canada.
f Forecast.
Note: The use of aluminum may be overstated; survey forms have been revised for 2001.

economies of scale through mergers, acquisitions and technological improvements to facilities. Larger corporate changes included:

- Norsk Hydro A.S.A. began discussions to acquire VAW Aluminium AG from E.ON. late in 2001 and the sale was completed in early 2002. Hydro Aluminum becomes the fourth largest aluminum producer in the world, now with a primary capacity of 1.4 Mt/y.

- In India, the government sold 51% of Bharat Aluminium Company Ltd. to Sterlite Industries.

- WMC started splitting itself into two companies to concentrate all of its aluminum assets within one of those companies.

- Further changes are expected in 2002 as, in late 2001, Corus Plc announced that it intended to divest its aluminum assets.

In the western United States, power costs have now declined from their highs. About 1.3 Mt/y of the total U.S. primary capacity of approximately 3.7 Mt/y has been closed. Although spot power prices have now fallen, the timing of restarts is still uncertain. (The Bonneville Power Administration [BPA] signed agreements with aluminum smelters to close for one to two years.) In late 2001 and early 2002, companies started to consider re-opening the closed capacity, although at reduced rates until new long-term power contracts can be finalized. Included in these plans are Columbia Falls Aluminum Co.'s restart of one potline at Columbia Falls, Montana, and an increase in production at Alcoa's Intalco smelter in Washington.

A lack of rainfall in Brazil forced rationing of power in mid-2001 for all users of power, including the aluminum industry. As a result, approximately 350 000 t/y of the country's capacity of 1.3 Mt/y was shut down. Production for the year was reported to have fallen by 11%. By year-end, however, restarts had begun and were nearly complete at the end of the first quarter of 2002.

Expansions, proposals and studies for new mines, refineries and smelters have been announced in many countries. Although the current weaker demand may delay some projects, a considerable amount of potential new production capacity is expected to be constructed in the near-term future. The projects reported include those listed in Tables 11 and 12.

The Federation of Aluminium Consumers in Europe (FACE) continued its efforts to promote the use of aluminum, assess the impact of new technologies, and reduce the costs of primary metal through tariff reductions to stimulate demand. FACE was formed in 1999 and has 44 members from European aluminum-using companies from 12 member states. As the European Union (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 2001, FACE renewed efforts to achieve consensus among EU members to reduce the duty imposed on unwrought aluminum rather than through a reduced tariff quota. (FACE has an Internet site at www.facealuminium.com.)

RECYCLING

The World Bureau of Metal Statistics (WBMS) reports Western World production of recycled aluminum metal decreased to 7.9 Mt from 8.2 Mt in 2000, reflecting a combination of the lower global demand for aluminum and increased direct use of scrap in products. U.S. production, at 3.2 Mt, was the largest amount in any one country and represented approximately 40% of recycled aluminum production worldwide. (WBMS has a web site at www.wbms.dircon.co.uk.)

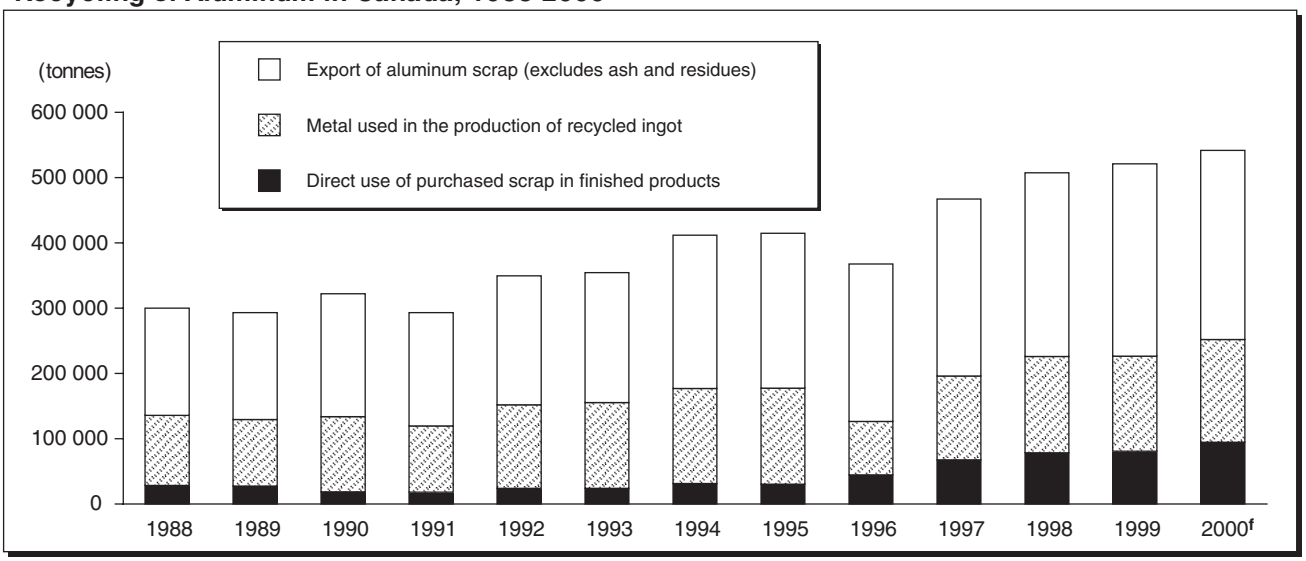
In May 2001, the U.S.-based Businesses and Environmentalists Allied for Recycling (BEAR) reported the results of Stage I of its Multi-Stakeholder Recovery Project on beverage containers, including those made of aluminum. The project brought together a diverse group of 17 stakeholders including The Container Recycling Institute (CRI), Coca-Cola, Waste Management, and Tomra North America to examine the state of beverage container recycling and compare the costs of various recycling systems. Included in the findings was the fact that higher volumes of used beverage containers were recovered in states with deposit laws. Further information is available on the Internet at www.container-recycling.org.

Reported Canadian use of outside scrap (scrap aluminum obtained from other companies) for the direct production of semi-finished or finished products was 100 294 t in 2000, up substantially from the 80 689 t reported in 1999. The use of outside scrap in 2001 is estimated to be approximately equivalent to that in 2000. The reported use of purchased recycled aluminum ingot was 190 026 t in 2000, down from the record 199 429 t reported in 1999. The reported use of aluminum metal, including scrap used in the production of recycled aluminum ingot, was 159 419 t in 2000, up from the 145 959 t reported in 1999 (refer to Table 3b).

PRODUCTION, INVENTORY AND USE

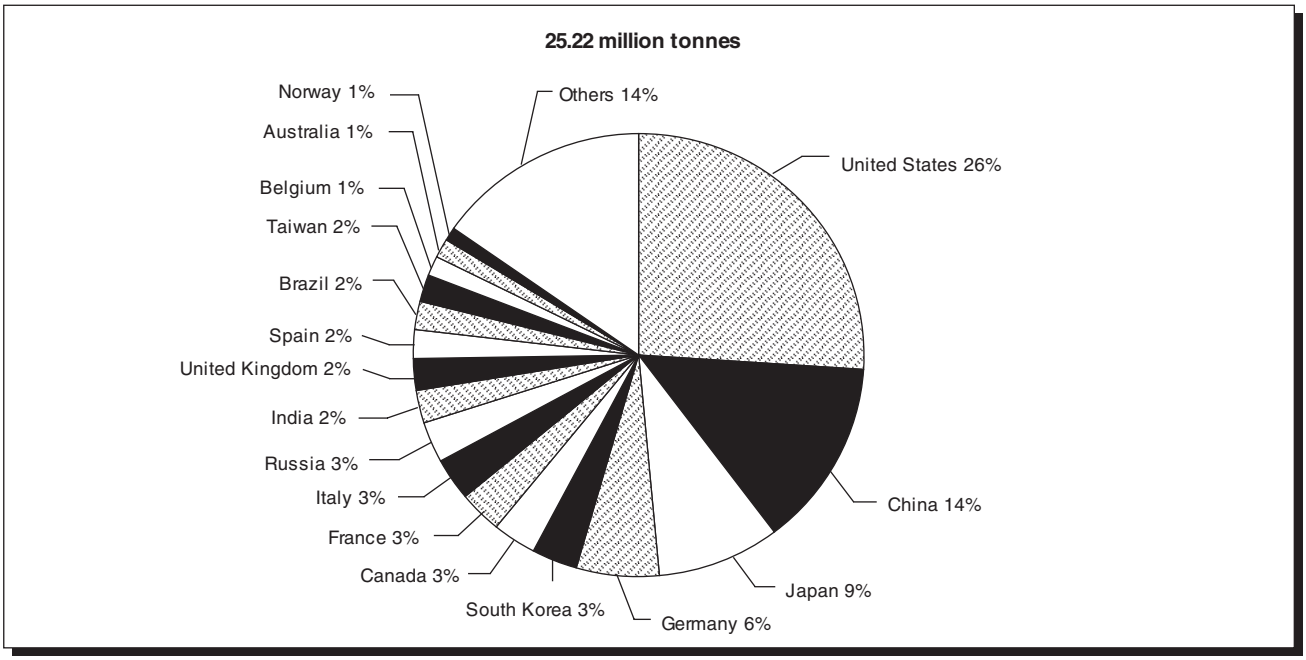
World production of primary aluminum increased to 24.6 Mt in 2000, up from 23.7 Mt in 1999 (refer to

Figure 4
Recycling of Aluminum in Canada, 1988-2000



Source: Natural Resources Canada, Annual Survey of Aluminum Metal Use in Canadian Establishments.
[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. In 2000, over 178 Canadian companies used primary, recycled and scrap aluminum. Companies surveyed include primary metal producing, recycling, casting, rolling, extruding and foundry operations.

Figure 5
Major Aluminum-Using Nations, Total Apparent Use of Primary Aluminum, 2000



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

Table 8). World production in 2001 is estimated to have fallen by about 0.5% to 24.5 Mt. The International Consultative Group on Nonferrous Metal Statistics reported that total world use of primary aluminum was 25.2 Mt in 2000, about 7% higher than the revised figure of 23.7 Mt in 1999 (Table 9).

Among International Aluminium Institute (IAI) members, the primary aluminum production rate decreased 3.9% during the year to 56 100 t/d in December 2001 from 58 400 t/d in December 2000. The average production rate for all of 2001 was 56 300 t/d, compared with an average of 57 900 t/d in 2000 (a decrease of 2.7%), although, early in 2002, daily rates were again above 57 000 t/d. Members' aluminum production capacity increased from 22.299 Mt/y at the end of 2000 to 22.976 Mt/y in 2001. On a longer term basis, the average daily production rate has been growing at about 2% per year since 1980 (Figure 2). (The IAI has an Internet site at www.world-aluminium.org.)

IAI inventories of unwrought aluminum peaked in January 2001 at 1.9 Mt, up from the 1.8 Mt recorded at the end of December 2000 and, following that peak, generally declined throughout the year to reach 1.7 Mt at the end of December 2001.

IAI total inventories started the year at 3.0 Mt, peaked in May at 3.2 Mt, and then gradually fell to end the year at 3.0 Mt. On the other hand, LME primary aluminum inventories increased from their December 2000 level of 322 000 t to end the year in December 2001 at 821 000 t. Similarly, aluminum alloy stocks in LME warehouses in January 2001 were approximately 86 000 t and they increased during the year to 121 000 t in December.

The IAI also reported that members' alumina production capacity increased from a revised 51.424 Mt/y in December 2000 to 52.981 Mt/y in December 2001, while alumina production also rose from 48.1 Mt in 2000 to 48.5 Mt in 2001.

WBMS reported that the use of primary aluminum in 2001 was 23.8 Mt. Asia was the region in the world with the largest aluminum use, accounting for 36% of total world refined aluminum use. Europe accounts for 32% and North America accounts for 25%.

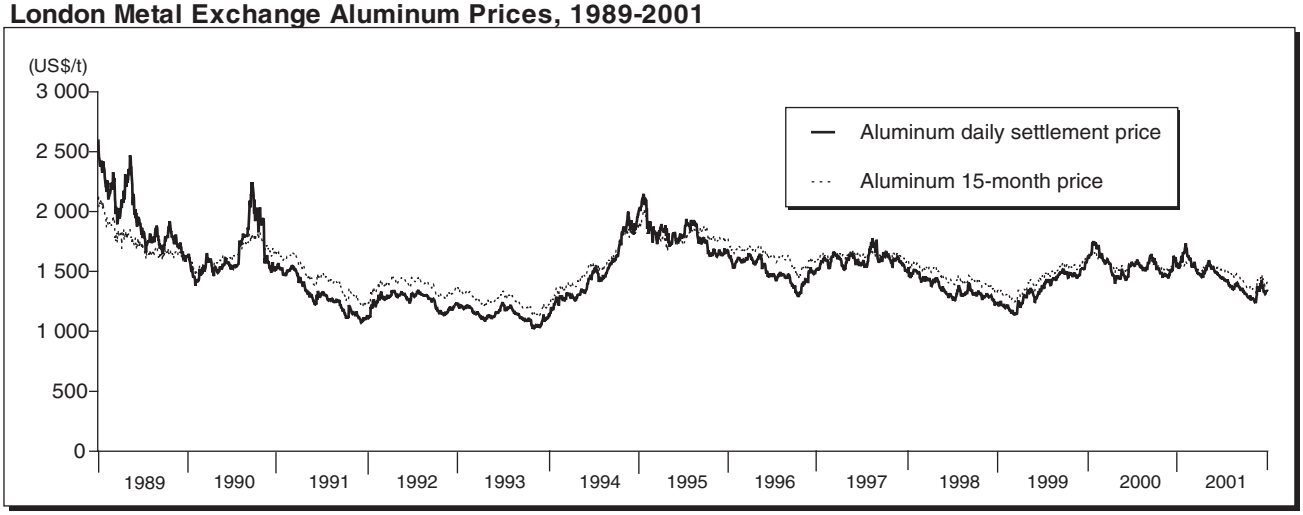
PRICES AND OUTLOOK

Primary-grade aluminum has established a longer term price range of between approximately US$1200 and $1800/t (US55¢ and 82¢/lb) over the last seven years. Cash settlement prices have generally trended downward from a peak above US$1700/t in early 2001. As a result of this short-term trend, the 2001 average of US$1444/t (US66¢/lb) was lower than the 2000 average of US$1555/t (US71¢/lb).

Aluminum alloy daily settlement prices on the LME reflected the general trend of primary aluminum prices. Aluminum alloy settlement prices started 2001 at US$1145/t (US52¢/lb) and have traded in a declining range from a peak of US$1290/t (US59¢/lb) established in February to US$1063/t (US48¢/lb) at the end of the year. For 2001, alloy prices averaged approximately US$1174/t (US53.3¢/lb) compared to an average of approximately US$1218/t (US55.3¢/lb in 2000).

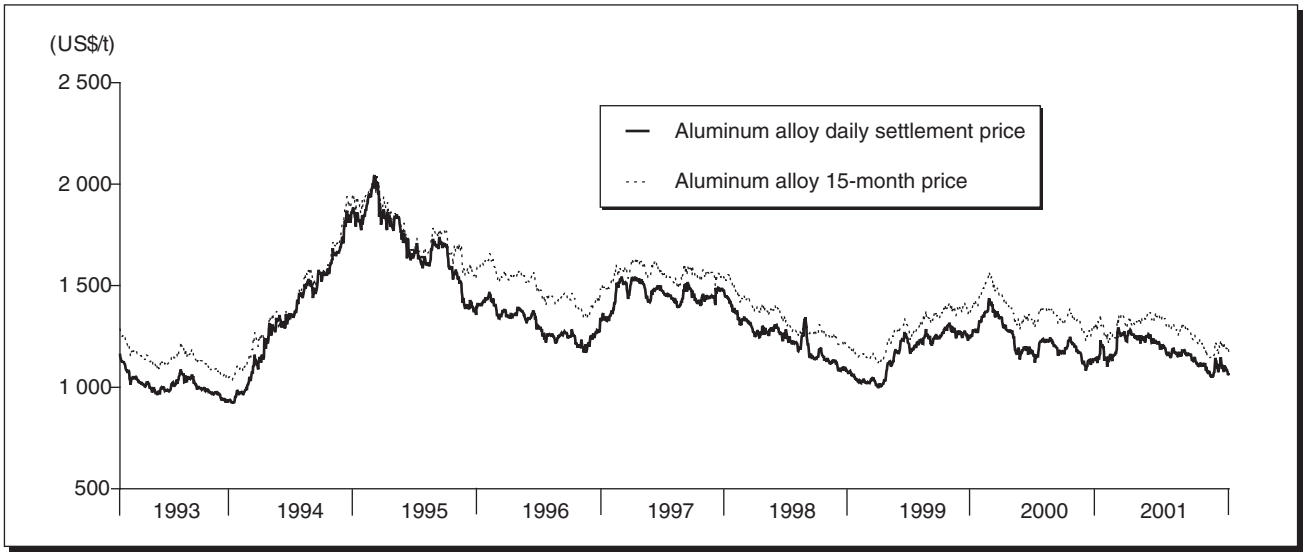
Production decreases in the Americas in 2000 and 2001 were generally offset by inventories and

Figure 6
London Metal Exchange Aluminum Prices, 1989-2001



Sources: Natural Resources Canada; London Metal Exchange; Reuters; Metalprices.com.

Figure 7
Aluminum Alloy Prices, London Metal Exchange, 1993-2001



Sources: Natural Resources Canada; London Metal Exchange; Reuters; Metalprices.com.

decreased demand in 2001. Although prices have strengthened in early 2002, given the increases in production capacity planned over the next three years and the potential for currently idled capacity to re-open, it is likely that prices will remain in the lower part of this long-term range in the near to medium term. As a result, the average price during 2002 is likely to fall from last year's price to US$1300-$1350/t (US59¢-62¢/lb).

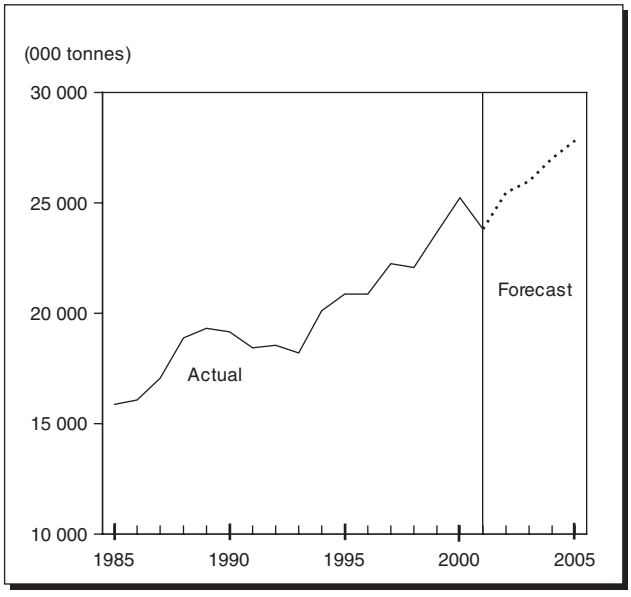
For 2002, world production of primary aluminum is expected to increase between 2 and 4% to about 25.2 Mt, consistent with aluminum's long-term growth rate over the last 20 years. The transportation and packaging markets are expected to lead the increase in demand for aluminum to the year 2005 and perhaps beyond.

IAI figures show that the world primary production capacity of its members is expected to increase about 1.4% to 23.3 Mt in December 2002 from 23.0 Mt at the end of 2001, with a slightly higher increase (2.7%) in 2003. Taking into account projected increases from non-IAI members, world primary production is expected to rise approximately 4% in 2002.

For alumina, IAI figures show that the alumina production capacity of its members is expected to increase from 53.0 Mt/y in December 2001 to 53.5 Mt/y in December 2002.

Canadian installed capacity for the production of primary aluminum is now above 2.7 Mt/y with the completion of Alcan's new smelter at Alma. With the

Figure 8
World Primary Aluminum Demand, 1985-2005



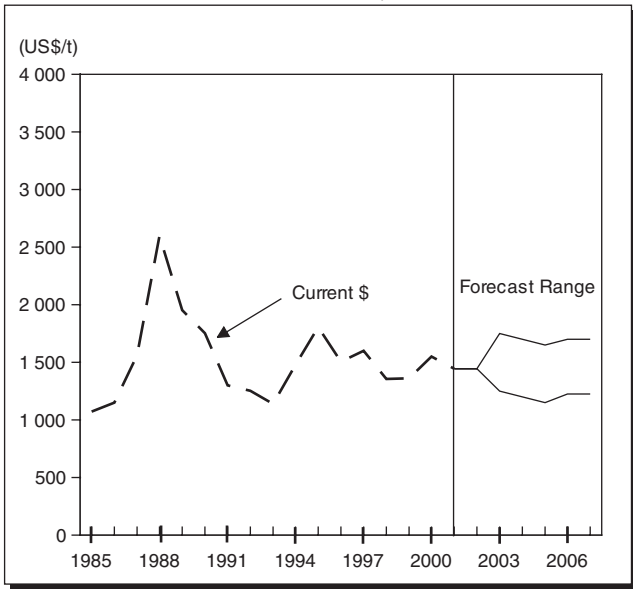
Sources: Natural Resources Canada, World Nonferrous Metal Statistics Group.

announced expansions at Alouette and modernization at Baie Comeau, Canadian production rates will further increase to above 3.0 Mt/y in 2005. Studies are under way on several other brownfield expansions and greenfield smelters.

Notes: (1) Information in this review was current as of March 31, 2002. (2) Lorraine Ralph of the Minerals and Mining Statistics Division prepared Tables 3a and 3b and she and others in that Division have provided assistance in generating the summary tables on Canadian aluminum. (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/index_e.html.

NOTE TO READERS

Figure 9
Aluminum Settlement Prices, 1985-2006



Source: Natural Resources Canada.

TABLE 1. CANADIAN ALUMINUM PRODUCED AND TRADED, 2000 AND 2001

Item No.		2000		2001 (p)	
		(tonnes)	($000)	(tonnes)	($000)
PRODUCTION		2 373 460	..	2 582 746	..
IMPORTS					
2606.00	Aluminum ores and concentrates				
	Brazil	1 293 334	43 403	1 496 401	56 860
	Guinea	499 469	20 079	478 332	23 511
	Ghana	–	–	281 805	10 594
	Guyana	244 871	8 747	222 501	8 343
	United States	(r) 187 737	(r) 11 316	67 958	5 210
	India	84 897	3 005	68 649	3 320
	Gambia	–	–	61 100	3 219
	Australia	322 257	12 962	79 648	2 820
	China	24 216	2 482	25 665	2 615
	Bermuda	163 096	5 166	67 000	1 451
	Other countries	18 718	823	12 590	810
	Total	(r) 2 838 595	(r) 107 983	2 861 649	118 753
2620.40	Ash and residues containing mainly aluminum	4 213	4 144	5 747	5 013
2818.20	Aluminum oxide (excluding artificial corundum)				
	Australia	1 790 055	497 325	1 671 455	479 161
	United States	(r) 1 205 184	(r) 392 977	1 202 126	383 465
	Jamaica	579 176	159 363	1 019 870	286 859
	Venezuela	25 315	7 106	51 921	14 688
	China	(r) 12 682	(r) 5 209	11 356	7 124
	Germany	(r) 1 871	(r) 3 849	2 138	4 215
	Guinea	12 941	2 442	3 801	3 258
	Austria	1 339	2 966	2 254	2 316
	France	819	1 374	1 524	1 866
	Other countries	106 635	31 588	4 529	2 875
	Total	(r) 3 736 017	(r) 1 104 199	3 970 974	1 185 827
2818.30	Aluminum hydroxide	8 233	6 818	5 474	7 289
7601.10	Unwrought aluminum, not alloyed				
	United States	(r) 42 780	(r) 100 616	20 995	47 522
	United Arab Emirates	304	743	191	530
	Argentina	1 304	3 516	98	346
	Other countries	870	1 555	211	469
	Total	(r) 45 258	(r) 106 430	21 495	48 867
7601.20	Unwrought aluminum, alloyed				
	United States	(r) 215 964	(r) 377 272	192 126	337 198
	Russia	12 113	21 281	5 245	10 305
	United Arab Emirates	954	2 382	1 313	3 395
	Japan	3	5	899	2 002
	United Kingdom	(r) 412	(r) 977	647	1 402
	Australia	883	2 373	397	979
	Other countries	1 395	3 301	865	2 027
	Total	(r) 231 724	(r) 407 591	201 492	357 308
7602.00	Aluminum waste and scrap	(r) 127 635	(r) 182 972	114 388	159 385
76.03	Aluminum powders and flakes	(r) 2 124	(r) 8 693	2 070	8 591

TABLE 1 (cont'd)

Item No.		2000		2001 (p)	
		(tonnes)	($000)	(tonnes)	($000)
IMPORTS (cont'd)					
76.04	Aluminum bars, rods and profiles				
7604.10	Of aluminum, not alloyed				
	United States	12 028	47 239	4 597	25 413
	Belgium	829	3 912	772	4 097
	Canada	166	1 058	209	1 416
	Austria	692	2 797	343	1 335
	Other countries	2 116	6 470	610	2 713
	Total	15 831	61 476	6 531	34 974
7604.21 to	Of aluminum alloys				
7604.29	United States	(r) 30 311	(r) 145 850	25 921	131 964
	China	3 759	(r) 12 925	5 216	19 530
	South Korea	890	3 313	1 847	6 481
	United Kingdom	172	1 279	280	1 976
	Germany	(r) 246	(r) 1 680	253	1 864
	France	(r) 446	(r) 2 377	312	1 648
	Other countries	749	3 859	803	4 449
	Total	(r) 36 573	(r) 171 283	34 632	167 912
76.05	Aluminum wire	(r) 7 986	(r) 35 067	8 466	33 689
76.06	Aluminum plates, sheets and strip, of a thickness exceeding 0.2 mm	(r) 483 433	(r) 1 731 718	444 034	1 595 150
76.07	Aluminum foil not exceeding 0.2 mm	(r) 43 857	(r) 217 366	48 484	237 124
76.08	Aluminum tubes and pipes	(r) 12 663	(r) 62 075	12 261	62 338
76.09	Aluminum tube or pipe fittings	(r) 7 825	(r) 53 861	9 102	61 097
76.10	Aluminum structures and parts of structures, aluminum plates, rods, profiles, tubes and the like, prepared for use in structures	..	(r) 92 240	..	108 129
		(number)		**(number)**	
76.11	Aluminum reservoirs, tanks, vats and similar containers, for any material, of a capacity exceeding 300 litres	(r) 3 679	(r) 34 860	2 299	35 375
76.12	Aluminum casks, drums, cans, boxes and similar containers, for any material, of a capacity not exceeding 300 litres	(r) 815 774 291	(r) 165 936	1 104 194 444	192 260
76.13	Aluminum containers for compressed or liquefied gas	(r) 99 304	(r) 15 231	99 860	10 150
		(tonnes)		**(tonnes)**	
76.14	Stranded wire, cables, plaited bands and the like, of aluminum, not electrically insulated	(r) 182	(r) 776	632	2 392
76.15	Table, kitchen or other household articles and parts thereof, of aluminum	..	(r) 93 696	..	89 254

TABLE 1 (cont'd)

Item No.		2000		2001 (p)	
		(tonnes)	($000)	(tonnes)	($000)
IMPORTS (cont'd)					
76.16	Other articles of aluminum	..	(r) 267 950	..	287 889
EXPORTS					
2606.00	Aluminum ores and concentrates				
	United States	100	15	20	14
	Cuba	–	–	6	5
	Switzerland	141	60	–	–
	Greece	6	5	–	–
	Total	247	80	26	19
2818.20	Aluminum oxide (excluding artificial corundum)				
	United States	60 991	50 811	47 223	43 584
	Other countries	(r) 249	(r) 539	1 346	2 290
	Total	(r) 61 240	(r) 51 350	48 569	45 874
7601.10	Unwrought aluminum, not alloyed				
	United States	556 959	1 315 008	934 369	2 169 645
	Netherlands	115 289	243 790	133 784	283 027
	South Korea	35 278	87 971	40 417	103 001
	France	22 260	44 380	24 817	51 864
	Japan	32 819	67 061	22 357	46 413
	Mexico	28 607	70 225	10 677	24 832
	Other countries	13 705	32 012	5 536	14 107
	Total	804 917	1 860 447	1 171 957	2 692 889
7601.20	Unwrought aluminum alloys				
	United States	(r) 882 032	(r) 2 306 876	756 106	1 935 398
	Japan	109 563	249 559	86 628	201 615
	South Korea	27 477	72 351	18 207	47 465
	United Kingdom	4 713	13 738	5 629	16 104
	Netherlands	3 265	8 301	3 629	9 470
	Ireland	1 932	5 792	1 379	3 897
	Israel	1 452	4 133	1 081	2 686
	Other countries	1 778	5 790	892	2 402
	Total	(r) 1 032 212	(r) 2 666 540	873 551	2 219 037
7602.00	Aluminum waste and scrap				
	United States	(r) 274 239	(r) 494 299	267 538	467 924
	Japan	4 106	9 208	6 476	14 817
	China	8 404	11 893	9 147	13 101
	Netherlands	1 268	3 076	635	1 609
	Taiwan	339	395	1 279	1 550
	South Korea	592	836	744	1 081
	Other countries	1 173	2 139	1 773	1 722
	Total	(r) 290 121	(r) 521 846	287 592	501 804

TABLE 1 (cont'd)

Item No.		2000		2001 (p)	
		(tonnes)	($000)	(tonnes)	($000)
EXPORTS (cont'd)					
76.03	Aluminum powders and flakes	(r) 1 672	(r) 3 170	843	1 858
76.04	Aluminum bars, rods and profiles	(r) 81 824	(r) 391 061	73 532	358 819
76.05	Aluminum wire	90 031	257 079	86 428	229 337
76.06	Aluminum plates, sheets and strip, of a thickness exceeding 0.2 mm	(r) 345 805	(r) 1 116 698	327 252	1 044 288
76.07	Aluminum foil not exceeding 0.2 mm	(r) 41 307	(r) 206 398	41 986	223 092
76.08	Aluminum tubes and pipes	(r) 7 495	(r) 40 926	5 484	30 254
76.09	Aluminum tube or pipe fittings	..	(r) 12 510	..	11 445
76.10	Aluminum structures and parts of structures, aluminum plates, rods, profiles, tubes and the like, prepared for use in structures	..	(r) 337 923	..	346 306
		(number)		**(number)**	
7611.00	Aluminum reservoirs, tanks, vats and similar containers, for any material, of a capacity exceeding 300 litres	(r) 17 905	(r) 1 078	230	1 613
7613.00	Aluminum containers for compressed or liquefied gas	761 141	5 793	730 529	3 677
		(tonnes)		**(tonnes)**	
76.14	Stranded wire, cables, plaited bands and the like, of aluminum, not electrically insulated	(r) 11 326	(r) 36 187	9 826	36 224
76.15	Table, kitchen or other household articles and parts thereof, of aluminum	..	(r) 68 333	..	71 326
76.16	Other articles of aluminum	..	194 287	..	199 799

Sources: Natural Resources Canada; Statistics Canada.
– Nil; **..** Not available or not applicable; (p) Preliminary; (r) Revised.
Note: Numbers may not add to totals due to rounding.

TABLE 2. CANADA, ALUMINUM SMELTER CAPACITY

Company	As of December 31, 2001
	(t/y)
Alcan Aluminium Inc.	
Quebec	
Grande-Baie	196 000
Arvida, Jonquière	248 000
Alma	400 000
Shawinigan	91 000
Beauharnois	50 000
Laterrière	219 000
British Columbia	
Kitimat	275 000
Alcoa Inc.	
Quebec	
Baie-Comeau	
Aluminerie de Baie-Comeau	418 000
Deschambault	
Aluminerie Lauralco Inc.	240 000
Aluminerie de Bécancour Inc.	
Quebec	
Bécancour	390 000
Alcoa, 74.95%	
Pechiney, 25.05%	
Aluminerie Alouette Inc.	
Quebec	244 000
Sept-Îles	
Société Générale de Financement du Québec, 20% (1)	
Aluminium Austria Metall Québec, 20%	
Corus Aluminium Québec Inc., 20% (2)	
Hydro Aluminium, 20%	
Kobe Aluminium Canada Inc., 13.33% (3)	
Marubeni Québec Inc., 6.66%	
Total Canadian capacity	2 771 000

Source: Natural Resources Canada.
(1) This interest was subsequently purchased by Alcan. (2) Alcan and Corus have subsequently agreed on Alcan's purchase of this interest. (3) This interest was subsequently purchased by Société Générale de Financement du Québec.

TABLE 3a. USE[1] OF ALUMINUM METAL[4] IN CANADA AT FIRST PROCESSING STAGE, 1998-2000

	1998 (r,a)	1999 (r,a)	2000 (r,a,5)
		(tonnes)	
METAL USED IN CASTINGS (6)			
Permanent mould	128 966	129 574	132 891
Sand	3 262	4 442	4 460
Die and other	166 763	205 781	205 031
Total	298 991	339 797	342 383
METAL USED IN WROUGHT PRODUCTS			
Sheet, plate, coil and foil	208 563	229 139	239 126
Extrusions, including tubing	188 610	234 843	230 063
Other wrought products (including rods, forgings and slugs)	149 451	153 936	162 865
Total	546 624	617 918	632 054
METAL USED IN OTHER PRODUCTS			
Destructive uses (deoxidizer), non-aluminum base alloys, powder and paste and other uses	44 358	41 526	41 204
Total used	889 973	999 242	1 015 640
Aluminum metal used for the production of recycled aluminum (2)	147 847	145 959	159 419

	Metal Entering Plant			On Hand at December 31		
	1998	1999	2000 (r)	1998	1999	2000 (r)
Primary aluminum and alloys	663 468	733 569	735 641	17 630	21 340	17 835
Recycled aluminum	159 234	198 370	191 326	5 995	5 415	6 672
Scrap originating outside plant	248 068	253 985	279 190	8 206	13 833	13 971
Total	1 070 770	1 185 925	1 206 157	31 831	40 588	38 479
Aluminum shipments (3)				31 001	33 674	34 525

Source: Natural Resources Canada.
(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 metal shipped without change. Does not refer to shipments of goods of own manufacture. (4) Aluminum metal refers to primary aluminum and alloys, purchased recycled aluminum, and outside aluminum scrap. (5) For 2000 this table is compiled from Natural Resources Canada's annual survey, "Use of Aluminum Metal" from data for 178 Canadian users.
(6) Metal reported used in casting may contain runaround scrap.
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, 1988-2000

	1988 (a)	1989 (a)	1990 (a)	1991 (a)	1992 (a)	1993 (a)	1994 (a)	1995	1996 (a)	1997 (a)	1998 (a)	1999 (a)	2000 (r,a,4)
							(tonnes)						
TYPE OF ALUMINUM METAL USED IN PRODUCTS OTHER THAN RECYCLED ALNUMINUM													
Primary aluminum and alloys	381 106	393 027	351 877	355 010	369 185	447 997	485 845	490 000	512 865	558 139	653 320	719 124	725 320
Purchased recycled aluminum	70 633	75 031	82 763	73 461	87 896	95 774	117 710	114 961	119 515	138 852	158 355	199 429	190 026
Outside aluminum scrap	28 039	27 306	18 617	17 768	24 009	25 084	31 469	30 441	44 555	67 447	78 298	80 689	100 294
Total used in products other than in recycled aluminum	479 779	495 363	453 257	446 239	481 089	568 854	635 024	635 402	676 935	764 438	889 973	999 242	1 015 640
TYPE OF ALUMINUM METAL USED IN RECYCLED ALUMINUM (3)													
Primary aluminum and alloys	13 307	22 383	x	x	x	x	x	x	x	14 650	x	10 879	13 765
Outside aluminum scrap	94 308	79 716	x	x	x	x	x	x	x	113 865	x	135 081	145 654
Total used in recycled aluminum (3)	107 615	102 098	115 112	101 503	127 818	131 174	145 661	146 987	81 629	128 515	147 847	145 959	159 419

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. (3) Aluminum metal used in recycled aluminum is not included in "Total used in products other than in recycled aluminum" above. (4) For 2000 this table is compiled from Natural Resources Canada's annual survey, "Consumption of Aluminum Metal" from data for 178 Canadian users.
Note: Numbers may not add to totals due to rounding.

TABLE 4. AVERAGE ALUMINUM PRICES

Year	Month	LME Cash Settlement (1)	*Metals Week* U.S. Markets (1)
		(US$/t)	(US¢/lb)
ANNUAL AVERAGES (2)			
1990		1751.80	75.0
1991		1302.70	59.5
1992		1254.60	57.5
1993		1139.40	53.3
1994		1477.20	71.2
1995		1806.10	85.9
1996		1506.00	71.3
1997		1599.70	77.1
1998		1357.80	65.6
1999		1361.09	65.7
2000		1549.14	74.6
2001		1443.63	68.8
MONTHLY AVERAGES			
1999	January	1680.70	80.1
	February	1670.67	80.3
	March	1577.41	76.2
	April	1457.61	70.6
	May	1467.19	70.9
	June	1506.73	72.7
	July	1563.88	76.3
	August	1528.02	74.4
	September	1601.60	77.2
	October	1500.66	72.3
	November	1474.23	70.1
	December	1565.87	74.3
2000	January	1615.65	75.2
	February	1604.36	76.4
	March	1509.17	72.4
	April	1496.91	71.3
	May	1538.77	72.7
	June	1466.13	69.7
	July	1416.39	68.1
	August	1377.08	66.1
	September	1344.56	64.9
	October	1282.50	62.1
	November	1327.46	63.4
	December	1344.63	64.1

Sources: Natural Resources Canada; *Metals Week.*
(1) Highest grade sold. (2) Primary ingots, minimum 99.7% purity; prior to October 1988, minimum 99.5% purity.

TABLE 5 - AVERAGE ALUMINUM ALLOY (RECYCLED) PRICES

Year	Month	LME Alloy (1) Cash Settlement	
		(US$/t)	(US$/lb)
ANNUAL AVERAGES			
1993		1 005.2	0.46
1994		1 452.9	0.66
1995		1 656.0	0.75
1996		1 302.8	0.59
1997		1 461.0	0.66
1998		1 203.8	0.55
1999		1 191.2	0.54
2000		1 216.9	0.55
2001		1 172.1	0.53
MONTHLY AVERAGES			
2000	January	1 387.4	0.63
	February	1 345.8	0.61
	March	1 273.9	0.58
	April	1 171.4	0.53
	May	1 181.3	0.54
	June	1 190.7	0.54
	July	1 223.5	0.55
	August	1 176.7	0.53
	September	1 212.4	0.55
	October	1 143.6	0.52
	November	1 128.5	0.51
	December	1 167.5	0.53
2001	January	1 150.3	0.52
	February	1 258.6	0.57
	March	1 258.0	0.57
	April	1 239.6	0.56
	May	1 233.3	0.56
	June	1 194.2	0.54
	July	1 164.8	0.53
	August	1 164.6	0.53
	September	1 131.9	0.51
	October	1 095.4	0.50
	November	1 087.5	0.49
	December	1 087.4	0.49

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

TABLE 6. WORLD MINE PRODUCTION OF BAUXITE, 1996-2000

	World Rank in 2000	1996	1997	1998	1999	2000 (p)
				(000 tonnes)		
Australia	1	43 063.0	44 465.0	44 553.0	(r) 48 416.0	53 802.0
Guinea	2	18 282.0	19 250.0	17 000.0	(r) 17 320.0	17 950.0
Brazil	3	11 060.1	11 162.8	11 961.1	13 838.8	13 224.1
Jamaica	4	11 828.6	11 987.3	12 646.4	11 688.5	11 126.5
China	5	8 878.8	9 000.0	(r) 6 400.0	(r) 7 100.0	7 900.0
India	6	5 757.5	5 800.3	5 980.1	6 712.2	7 389.9
Venezuela	7	(r) 4 834.1	(r) 4 966.8	4 825.6	(r) 4 166.5	4 360.7
Russia	8	3 928.0	3 991.0	3 488.4	3 500.0	4 000.0
Kazakhstan	9	3 345.9	3 416.0	3 436.8	3 606.5	3 729.6
Suriname	10	3 702.5	3 877.2	3 889.6	3 714.6	3 610.4
Guyana	11	2 475.5	(r) 2 467.3	(r) 2 266.7	2 359.3	2 689.5
Greece	12	2 451.7	1 876.6	1 823.0	1 882.5	1 990.5
Indonesia	13	842.0	808.7	1 055.6	1 116.3	1 150.8
Hungary	14	1 055.8	742.6	(r) 1 138.8	(r) 941.0	1 046.5
Yugoslavia Fed.	15	323.0	470.0	226.0	500.0	630.0
Turkey	16	544.5	369.5	458.0	207.7	458.5
Iran	17	(r) 230.4	(r) 245.0	(r) 336.0	(r) 912.5	448.8
Ghana	18	473.2	519.2	442.5	353.1	424.6
United States	19	(r) 200.0	(r) 200.0	(r) 200.0	(r) 200.0	200.0
France	20	165.0	(r) 169.0	(r) 170.0	(r) 170.0	185.0
Malaysia	21	218.7	279.1	160.3	(r) 223.7	123.3
Vietnam	22	30.0	30.0	30.0	30.0	30.0
Pakistan	23	4.1	4.9	5.0	(r) 11.2	8.7
Mozambique	24	11.5	8.2	6.1	7.9	8.1
Albania	25	(r) 3.4	(r) 4.5	(r) 4.1	(r) 4.6	3.0
Romania		175.2	127.5	161.9	–	–
Dominican Republic		–	–	–	–	–
Italy		–	–	–	–	–
Sierra Leone		–	–	–	–	–
Total world		(r) 123 884.5	(r) 126 238.5	(r) 122 665	(r) 128 982.9	136 490.5
% change from previous year		4.8	1.9	-2.8	5.2	5.8

Sources: Natural Resources Canada; International Consultative Group on Nonferrous Metals Statistics; World Bureau of Metal Statistics.
– Nil; (p) Preliminary; (r) Revised.

TABLE 7. PRODUCTION OF ALUMINA (HYDRATE) 1996-2001

	World Rank in 2001	1996	1997	1998	1999	2000	2001 (e)
				(000 tonnes)			
Australia	1	13 349.0	13 385.0	13 853.0	(r) 14 532.0	15 715.0	16 346.0
United States (3)	2	4 700.0	5 093.0	(r) 5 654.0	(r) 5 144.0	4 782.0	4 775.0
China	3	2 490.0	2 922.8	(r) 3 340.0	(r) 3 822.0	4 290.0	4 660.0
Brazil	4	2 759.0	3 088.0	3 322.1	3 515.1	3 754.0	3 800.0
Jamaica	5	3 199.5	3 394.2	3 440.2	3 569.6	3 600.1	3 600.0
Russia	6	2 148.0	2 379.8	2 465.4	2 657.1	2 889.0	3 000.0
India	7	1 706.0	1 940.0	1 855.0	1 930.0	2 107.0	2 200.0
Suriname	8	1 642.9	1 725.9	1 771.9	1 853.1	1 906.1	1 900.0
Venezuela	9	1 775.0	1 730.4	1 553.4	(r) 1 468.5	1 755.3	1 800.0
Ireland	10	(r) 1 290.0	(r) 1 350.0	(r) 1 410.0	(r) 1 450.0	1 500.0	1 500.0
Ukraine	11	1 159.5	1 074.5	1 290.7	1 230.2	1 360.0	1 400.0
Kazakhstan	12	1 083.4	1 094.2	1 084.5	1 157.7	1 216.6	1 250.0
Canada (2)	13	1 060.0	1 165.0	1 229.0	1 233.0	1 197.4	1 200.0
Spain	14	1 094.8	1 110.3	1 110.0	1 112.0	1 123.0	1 125.0
Italy	15	881.0	914.0	935.0	973.0	1 022.0	1 050.0
Germany	16	792.0	850.0	778.3	(r) 806.0	826.0	830.0
Japan	17	718.9	728.0	737.6	736.6	781.7	780.0
Greece	18	619.8	615.7	649.4	633.0	690.0	700.0
France	19	542.0	589.0	520.0	556.0	600.0	600.0
Guinea	20	622.0	527.0	(r) 500.0	569.0	541.0	550.0
Romania (1)	21	258.5	279.5	(r) 250.2	277.4	416.6	250.0
Azerbaijan	22	–	–	–	(r) 77.0	217.2	220.0
Hungary	23	358.7	350.0	160.0	200.0	200.0	200.0
Yugoslavia	24	105.0	159.5	152.6	156.0	186.1	185.0
Turkey	25	159.3	164.3	156.8	159.1	155.4	155.0
United Kingdom	26	99.0	100.0	(r) 115.0	(r) 94.0	89.0	90.0
Slovakia		56.0	46.8	–	–	–	–
South Korea		100.0	70.0	–	–	–	–
Total world		(r) 44 769.3	(r) 46 846.9	(r) 48 334.1	(r) 49 911.4	52 920.5	54 166.0
% change from previous year		3.3	4.6	3.2	3.3	6.0	2.4

Sources: Natural Resources Canada; International Consultative Group on Nonferrous Metals Statistics, International Aluminium Association; media reports.
– Nil; (r) Revised.
(1) Calcined. (2) Alumina equivalent. (3) Calcined equivalent.

TABLE 8. WORLD PRODUCTION OF PRIMARY ALUMINUM, 1996-2002

	World Rank in 2000	World Rank in 2001	1996	1997	1998	1999	2000	2001 (e)	2002 (f)
						(000 tonnes)			
China	3	1	1 770.9	2 035.0	2 335.7	2 598.5	2 989.0	3 420.0	4 020.0
Russia	2	2	2 871.6	2 906.0	(r) 3 010.0	(r) 3 149.0	3 247.0	3 300.0	3 350.0
United States	1	3	3 577.2	3 603.4	3 712.7	3 778.6	3 668.4	2 637.0	2 800.0
Canada	4	4	2 283.2	2 327.2	2 374.1	2 389.8	2 373.5	2 582.7	2 700.0
Australia	5	5	1 370.3	1 490.1	1 626.2	1 719.3	1 761.5	1 775.0	1 790.0
Brazil	6	6	1 197.4	1 189.1	1 208.0	1 249.6	1 277.4	1 130.0	1 250.0
Norway	7	7	862.3	918.6	994.2	1 009.0	1 031.1	1 070.0	1 070.0
South Africa	8	8	617.0	682.9	692.5	686.9	671.0	659.0	680.0
Germany	10	9	576.5	571.9	612.4	633.8	643.5	650.0	660.0
India	9	10	530.6	544.9	(r) 542.0	(r) 594.0	646.3	625.0	625.0
Venezuela	11	11	634.9	640.8	586.5	(r) 570.4	570.4	575.0	580.0
Dubai	12	12	258.5	(r) 379.2	386.6	(r) 440.7	536.0	550.0	560.0
Bahrain	13	13	464.5	489.9	501.3	(r) 502.7	509.0	515.0	525.0
France	14	14	380.1	399.4	423.6	455.1	441.2	460.0	465.0
Spain	15	15	361.8	359.9	360.4	363.9	365.7	375.0	380.0
United Kingdom	17	16	240.0	247.7	258.4	(r) 272.2	305.1	335.0	345.0
New Zealand	16	17	284.5	310.3	317.4	326.7	329.2	330.0	335.0
Tajikistan	19	18	198.3	188.9	195.6	229.1	271.1	320.0	330.0
Netherlands	18	19	227.0	231.8	(r) 264.7	287.4	301.7	300.0	300.0
Argentina	20	20	183.9	187.2	186.7	206.4	261.8	250.0	265.0
Mozambique	37	21	–	–	–	–	64.0	250.0	260.0
Iceland	21	22	103.4	122.9	173.4	221.5	225.7	240.0	250.0
Indonesia	22	23	223.1	219.4	133.4	111.7	190.5	210.0	220.0
Italy	23	24	184.4	187.7	187.0	(r) 187.2	189.2	190.0	190.0
Egypt	24	25	179.2	178.2	187.2	186.7	188.9	190.0	190.0
Romania	25	26	140.9	161.9	174.0	(r) 174.1	179.0	180.0	180.0
Greece	26	27	130.9	132.6	146.1	159.9	162.6	165.0	165.0
Ghana	27	28	137.0	151.6	56.1	114.2	155.5	160.0	130.0
Iran	28	29	80.1	92.3	(r) 123.8	(r) 137.4	139.5	150.0	150.0
Slovakia	29	30	111.5	110.2	108.0	109.2	109.8	110.0	110.0
Ukraine	30	31	89.9	100.5	106.7	112.4	103.6	105.0	105.0
Sweden	31	32	98.3	98.4	95.7	98.5	100.1	100.0	100.0
Cameroon	32	33	82.3	90.9	81.6	91.9	94.9	95.0	95.0
Bosnia	33	34	–	8.0	30.0	70.0	94.5	95.0	95.0
Yugoslavia	34	35	37.4	65.7	60.1	72.5	88.2	95.0	95.0
Slovenia	35	36	65.8	74.4	70.8	77.2	83.8	85.0	85.0
Mexico	36	37	61.5	66.4	61.8	62.7	65.0	60.0	60.0
Turkey	38	38	62.1	62.0	61.8	61.7	61.5	60.0	60.0
Poland	39	39	51.5	51.5	51.5	(r) 51.6	52.3	50.0	50.0
Switzerland	40	40	26.6	27.3	32.1	34.4	35.5	35.0	35.0
Hungary	41	41	33.5	32.5	33.7	33.6	33.9	35.0	35.0
Japan	42	42	17.0	16.7	16.3	10.9	6.5	7.0	7.0
Suriname			26.0	23.1	27.1	6.6	–	–	–
Nigeria			–	2.5	25.5	15.9	–	–	–
Total world			20 832.9	(r) 21 780.9	(r) 22 632.7	(r) 23 664.9	24 624.4	24 525.7	25 500.0
% change from previous year			5.5	4.6	3.9	4.6	4.1	-0.4	4.0

Sources: Natural Resources Canada; International Consultative Group on Nonferrous Metals Statistics; World Bureau of Metal Statistics; International Aluminium Institute; media reports.
– Nil; (e) Estimated; (f) Forecast; (r) Revised.

TABLE 9. APPARENT USE OF PRIMARY ALUMINUM, 1996-2000

	World Rank in 2000	1996	1997	1998	1999	2000
				(000 tonnes)		
United States	1	5 500.0	5 800.0	6 100.0	6 500.0	6 565.0
China (1)	2	2 142.0	(r) 2 289.0	2 421.0	(r) 2 914.0	3 450.0
Japan	3	(r) 2 386.1	(r) 2 433.5	(r) 2 082.0	(r) 2 112.3	2 222.7
Germany	4	1 355.0	1 558.0	(r) 1 520.0	(r) 1 446.0	1 498.0
South Korea	5	674.3	666.3	505.7	813.9	822.9
Canada	6	(r) 614.3	(r) 643.5	720.6	(r) 777.2	798.7
France	7	671.7	724.2	733.8	(r) 774.2	780.4
Italy	8	614.0	671.0	674.0	(r) 734.6	779.7
Russia	9	444.7	469.7	489.2	(r) 567.1	748.4
India	10	584.8	(r) 553.4	(r) 566.5	(r) 569.5	602.4
United Kingdom	11	571.0	583.0	579.0	581.0	588.0
Spain	12	360.0	430.0	435.5	494.0	525.6
Brazil	13	497.0	478.6	521.4	463.1	519.8
Taiwan	14	310.3	374.3	300.7	464.1	501.6
Belgium	15	331.0	345.0	370.0	350.0	360.0
Australia	16	321.8	352.0	(r) 370.3	(r) 344.4	350.5
Norway	17	169.0	197.0	155.0	(r) 217.0	247.0
Bahrain	18	(r) 219.0	(r) 233	(r) 238.0	(r) 239.0	234.2
Greece	19	156.4	203.8	212.7	212.5	233.1
Turkey	20	136.0	(r) 160.8	180.7	169.4	211.2
Hungary	21	158.6	183.4	(r) 163.7	(r) 171.3	210.1
Thailand	22	220.2	232.8	(r) 128.4	155.3	195.2
South Africa	23	101.0	124.4	142.8	125.0	175.0
Austria	24	155.0	162.0	(r) 159.8	(r) 142.6	168.2
Switzerland	25	140.2	144.0	(r) 165.9	157.0	156.1
Netherlands	26	(r) 145.0	(r) 155.0	(r) 155	(r) 155.0	155.0
Poland	27	(r) 87.9	(r) 101.5	(r) 107.8	(r) 133.0	149.9
Sweden	28	129.0	142.0	177.0	132.2	147.0
Venezuela	29	206.9	193.4	179.7	121.8	146.2
Indonesia	30	(r) 161.2	203.0	75.4	138.7	145.8
Romania	31	35.7	(r) 70.6	87.7	(r) 113.6	125.7
Malaysia	32	(r) 115.3	(r) 147.8	(r) 64.7	(r) 130.6	115.0
Iran	33	106.0	104.9	(r) 101.1	(r) 105.0	104.8
Mexico	34	92.7	83.2	(r) 91.1	(r) 89.6	100.0
Slovenia	35	46.5	52.8	74.6	75.3	89.9
Egypt	36	79.2	97.9	91.6	82.7	81.8
Argentina	37	86.4	(r) 94.9	(r) 106.3	(r) 82.9	81.6
Portugal	38	58.1	75.4	68.3	82.0	78.0
Czech Republic	39	53.0	62.8	78.9	65.7	77.6
Ukraine	40	51.0	(r) 50.0	(r) 50.0	(r) 50.0	50.0
Israel	41	37.2	39.5	45.9	(r) 44.0	44.8
New Zealand	42	38.9	37.0	34.2	42.8	42.7
Denmark	43	27.0	36.0	38.9	39.4	41.2
Finland	44	30.4	33.1	(r) 36.2	37.1	38.5
Slovakia	45	(r) 4.7	(r) 4.6	22.2	(r) 33.9	36.3
Philippines	46	26.3	34.2	24.0	33.6	32.8
Colombia	47	35.3	42.8	36.3	27.4	31.8
Other Asia	48	35.0	35.0	35.0	35.0	30.0
Croatia	49	20.7	22.0	24.0	(r) 30.0	28.4
Other America	50	(r) 25.0	(r) 25	(r) 25	(r) 25.0	25.0
Saudi Arabia	51	25.0	25.0	25.0	25.0	25.0
Cameroon	52	18.0	24.7	24.9	22.0	24.8
Vietnam	53	(r) 6.3	(r) 8.4	(r) 15.6	(r) 16.9	21.1
Dubai	54	19.4	32.1	(r) 18.5	20.0	20.0
North Korea	55	20.0	20.0	20.0	(r) 20.0	20.0
Bangladesh	56	10.0	(r) 14.2	(r) 17.8	(r) 18.0	18.0

TABLE 9 (cont'd)

	World Rank in 2000	1996	1997	1998	1999	2000
				(000 tonnes)		
Ghana	57	16.1	16.0	16.0	16.0	16.0
Yugoslavia	58	17.3	23.7	19.2	13.1	16.0
Lebanon	59	10.0	17.0	(r) 20.9	(r) 14.2	15.0
Chile	60	13.9	15.5	(r) 10.6	(r) 11.2	14.6
Other Africa	61	9.9	12.0	10.0	12.0	12.0
Ireland	62	3.8	5.8	6.6	8.2	10.2
Pakistan	63	15.0	15.0	15.0	9.4	10.0
Belarus	64	–	7.4	9.1	9.0	9.0
Bulgaria	65	6.7	7.8	8.0	8.0	8.6
Nigeria	66	7.0	7.0	7.0	7.0	7.0
Singapore	67	40.0	15.0	33.5	(r) 4.3	4.1
Algeria	68	5.0	5.0	5.0	(r) 4.1	4.0
Morocco	69	1.6	2.0	3.4	(r) 3.5	3.5
Macedonia	70	2.8	2.0	3.0	3.0	3.0
Other Europe	71	–	2.0	1.5	2.0	3.0
Iceland	72	1.0	1.7	3.0	3.0	3.0
Tunisia	73	3.5	(r) 2.1	(r) 4.4	(r) 2.6	3.0
Kazakhstan	74	–	1.6	1.7	2.0	2.0
Peru	75	3.6	2.5	2.5	0.9	1.3
Albania	76	1.0	1.0	1.0	1.0	1.0
Cuba	77	1.0	1.0	1.0	1.0	1.0
Iraq	78	1.0	1.0	1.0	1.0	1.0
Hong Kong (1)		40.0	..	..	..	..
Total World		(r) 20 866.7	(r) 22 245.6	(r) 22 072.8	(r) 23 659.2	25 220.8
% change from previous year		0.0	6.6	-0.8	7.2	6.6

Sources: Natural Resources Canada; International Consultative Group on Nonferrous Metals Statistics.
– Nil; .. Not available; (r) Revised.
(1) Starting in 1997, Hong Kong is included with China.

TABLE 10. ABBREVIATIONS OF COMPANY NAMES AND INSTITUTIONS 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
Alumina do Norte do Brasil S.A.	Alunorte	www.cvrd.com.br
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 Corp. of China	Chalco	..
Alumina Partners of Jamaica	Alpart	www.kaiseral.com
Columbia Ventures Corporation	Columbia Ventures	www.nordural.is
Comalco Ltd.	Comalco	www.riotinto.com
CVG Alcasa	Alcasa	www.aluminio.com.ve
Dubai Aluminium Company Limited	Dubal	www.dubal.co.ae
Aluminum Company of Egypt	Egyptalum	www.egyptalum.com.eg
Elkem ASA	Elkem	www.elkem.com
Federation of Aluminium Consumers in Europe	FACE	www.facealuminium.com
International Aluminium Institute	IAI	www.world-aluminium.org
Jamaica Aluminium Co.	Jamalco	..
KTD L.L.C.	KTD	www.ktdal.com
National Aluminium Company Limited	Nalco	www.nalcoindia.com
Norsk Hydro A.S.A / Hydro Aluminium a.s.	Norsk Hydro or Hydro Aluminium	www.hydro.com
Pechiney SA	Pechiney	www.aluminium-pechiney.com
Reydarál hf	Reydarál	..
Sibirsky Aluminium	Sibirsky (Russian Aluminum)	www.sibirskyaluminum.com
The Aluminum Association Inc.	Aluminum Association	www.aluminum.org
Vietnam National Mineral Corp.	Vimico	..

Source: Natural Resources Canada.
.. URL not available.

TABLE 11. BAUXITE AND ALUMINA PROJECTS

Country	Project/Company	Remarks	Near-Term Change
			(t/y)
Australia	Gladstone alumina refinery - Comalco	First stage of proposed A$1.4 billion refinery in central Queensland approved for construction. Requires expansion of the Weipa bauxite mine. Potential to increase capacity to 4 Mt/y.	1 400 000
	Gove alumina refinery	Alcan acquired bauxite mine and refinery. Expansion of refinery to 2 Mt/y from 1.8 Mt/y.	200 000
	Queensland Alumina Ltd. refinery	Proposal to expand capacity from 3.65 Mt/y to 4.35 Mt/y.	
	Wagerup - Alcoa/WMC	Decision pending on increase in capacity of refinery to 3.3 Mt/y.	
	Worsley	BHP Billiton increased ownership; expansion to 3.5 Mt/y expected by 2005.	
Azerbaijan	Sumgait Non-Ferrous Metals plant	Feasibility study into expansion of alumina refinery to 450 Mt/y in 2002.	
Brazil	Barcarena alumina refinery - Alunorte CVRD and Norsk Hydro.	Expansion under way from 1.5 to 2.3 Mt/y. Work to be completed in 2002, with full production in 2003. Feasibility study on further expansion to 5 Mt/y. Studies for a new bauxite mine to support additional expansions.	800 000
	Espirito Santo State Bauxite mine and refinery - Curimbaba	Company made public presentations on environmental and social impacts of a mine/1-Mt/y refinery project in Espirito Santo State. Expected to form a consortium to complete development of project.	
	Para State mine - CVRD	Potential new 5-Mt/y mine in 2005.	
	Trombetas mine - Mineracao Rio do Norte	Expansion of mine to support Alunorte and Alumar alumina refinery expansions expected to be complete in late 2002. Production at capacity dependent on markets.	5 200 000
China	Baise Yinhai - Pechiney and Minmetals	Planning for new 400 000-t/y alumina refinery in Guangxi, with later expansion potential to 2 Mt/y.	
	Denfeng Aluminium Plant	Looking for investors to complete a new 100 000-t/y refinery.	
	Great Wall Aluminium	Expansion to 1.4 Mt/y.	250 000
	Guizhou refinery - Chalco	Refinery modernization was to be completed in late 2001. Capacity of plant expected to be 500 000 t/y after ramp up.	100 000
	Guizhou refinery - Chalco	Proposes to double the capacity of refinery.	
	Guizhou - Zunyi Aluminum	Construction started on new 400 000-t/y refinery. Completion expected in 2004.	400 000
	Jinbei Aluminum Plant	Feasibility study on new 1-Mt/y alumina refinery expected to be completed in 2002.	
	Pingguo refinery joint venture with Alcoa - Chalco	Construction started in 2001 to double the capacity of refinery by 2003.	400 000
	Shandong Aluminum	Expansion of refinery.	250 000
	Zhongzhou refinery - Chalco	Proposes to double the capacity of refinery from current capacity of 450 000 t/y.	
Guinea	Dian-Dian - Russian Aluminium	Government approval of bauxite mine and refinery. Port and rail facilities to be constructed. Proposed capacity of 11 Mt/y of bauxite, 1.2 Mt/y of alumina.	
	Societe Bauxite du Kinda - Russian Aluminium	Russian Aluminum signed 25-year management agreement. Expansion of mine from 1.5 Mt/y to 2.5 Mt/y in 2004.	
	Guinea Aluminium Products Co.	Discussions on expansion of Friguia alumina plant by 350 000 t/y, hydro dam and 240 000-t/y smelter.	
	Sangarédi refinery - Government of Guinea	Possible new 2.4-Mt/y refinery.	
India	Gujarata Alumina Bauxite Ltd.	Proposal for 750 000-t/y refinery in Gujarat. Production would not start until after 2005.	
	Korba - Bharat Aluminium	Expansion of refinery from 180 000 t/y to 830 000 t/y approved. Project expected to be completed in 2005.	
	Nalco - Damanjoi refinery	Refining capacity at Damanjoi doubled from 800 000 t/y to 1.6 Mt/y.	800 000
	Renukoot - Hindalco	Expansion of refinery under way.	200 000
	Pechiney, SA	Interested in constructing a 1-Mt/y alumina refinery in Orissa, India; feasibility study under way, decision expected in 2003.	
	Utkal - Alcan, Hindalco	Bauxite mine and alumina refinery in Orissa. Hydro Aluminum withdrew from project. Refinery capacity may be 1-3 Mt/y.	
Iran		Alumina refinery expected to open in 2002.	
Jamaica	Kirkvine and Ewarton	Glencore purchased refineries from Alcan.	
	Alumina Partners of Jamaica - Kaiser and Hydro Aluminium	Expansion of Alpart refinery from 1.45 Mt/y to 1.7 Mt/y by early 2003.	250 000
	Clarendon refinery - Alcoa and Jamalco	Agreement on 250 000-t/y expansion of refinery.	250 000

Country	Project/Company	Remarks	Near-Term Change
Kazakhstan	Pavlodar	Alumina plant expansion under way to a total capacity of 1.5 Mt/y by 2005.	400 000
Russia	Achinsk Refinery - Russian Aluminum	Planned to increase alumina capacity to 1 Mt/y.	150 000
	Russian Aluminum	Plans to become self-sufficient in alumina.	
	South Urals bauxite mine - Sual Group	Plans to close mine in 2002. Produced approximately 300 000 t in 2001.	
	Timan bauxite mine - Sual Group	Mine at Sredne-Timan in Komi Republic under development. Expected capacity to eventually reach 3 Mt/y of bauxite. Possible new 1.2-Mt/y refinery and smelter to be associated with mine. Rail line to be completed in mid-2002. Hatch and Associates awarded contract for prefeasibility and engineering work on alumina refinery and smelter. Capacity expanded to 1.2 Mt/y of bauxite in 2001.	750 000
	Oradea Refinery Russian Aluminum	Plans to close and place refinery on care and maintainance.	-200 000
Spain	San Ciprian - Alcoa	Expansion/modernization capacity increase to 1.3 Mt/y completed in 2001.	200 000
Suriname	Bakhuis - Pechiney and government of Suriname	Study for new mine and 1-Mt/y refinery.	
Ukraine	Nikolayev - Russian Aluminium	Expansion of capacity to 1.5 Mt/y by 2005, 1.3 Mt/y in 2002 from 1.1 Mt/y.	200 000
United States	Granercy alumina refinery - Kaiser	Completed rebuild and re-opened Gramercy alumina plant with capacity of 1.08 Mt/y.	1 080 000
	Point Comfort - Alcoa	Alumina output reduced.	-500 000
	Burnside - Ormet Corp.	Indefinite closure planned.	-600 000
U.S. Virgin Islands	St. Croix refinery - Alcoa	600 000 t/y-refinery closed.	-400 000
Vietnam	Government of Vietnam	Planning to start construction of a 300 000-t/y alumina refinery in 2002.	
	Dac Nong - China Non-Ferrous Corp. / Vimico	Memorandum of Understanding on a new feasibility study for a potential new 1Mt/y refinery and bauxite mine. Production for export and a possible local 75 000-t/y smelter.	
Venezuela	Bauxilium - CVG Bauxilum/Pechiney	Refinery expansion under way to 2 Mt/y.	300 000
	Bauxilium - CVG Bauxilum/Pechiney	Planned expansion from 260 000 t/y to 410 000 t/y on hold.	

Source: Natural Resources Canada, based on published reports.

TABLE 12. SMELTER PROJECTS

Country	Project/Company	Remarks	Near-Term Change Amount
			(t/y)
Africa	Hillside Smelter -BHP-Billiton	Expansion announced for completion in 2004.	132 000
Argentina	Puerto Madryn - Aluar	Awarding contracts in early 2002 to expand capacity to 400 000 t/y.	140 000
Australia	Aldoga Consortium	Proposed smelter near Gladstone received major project status. Letter of intent with Russian Aluminium on a joint venture feasibility study. Construction could start in 2002.	
	Tomago Smelter - Tomago Aluminium Pty Ltd.	Partners approved expansion in capacity, completion expected 2006.	
Azerbaijan	Azerbaijan Aluminum	Planning restart of smelter with potential expansion to 120 000 t/y .	
Brazil	Albras - CVRD	Expanded capacity operational by 2002.	45 000
	Albras - CVRD	Consideration of further expansion in capacity from 406 000 t/y to 580 000 t/y	
	Sorocoba Smelter - Cia Brasileira de Aluminio	Expansion of smelter under way from 230 000 t/y to 340 000 t/y. To be completed in 2003.	110 000
Bahrain	Aluminum Bahrain	Company has approved expansion from 509 000 t/y to 750 000 t/y.	250 000
	Aluminum Bahrain - Alcoa	Possible additional expansion to total capacity of 1 Mt/y.	
Canada	Alcan - Alma	Completed construction and start-up of new 400 000-t/y smelter.	400 000
	Alouette Smelter expansion - Alouette Inc.	Expansion approved, completion expected in 2005. Discussed in text.	300 000
	Proposed Newfoundland hydro electricity project and smelter - Alcoa	Discussed in text.	
Chile	Alumysa Proposed smelter - Noranda	Environmental and social studies under way for a proposed US$2.75 million hydro-electric project and smelter near Puerto Aisen.	
China	Aba Aluminium	Proposal for expansion from 14 000 t/y to 150 000 t/y approved by State, looking for investors.	
	Guangxi - Baise Yinhai Aluminium Co.	Constructing a new 52 000-t/y smelter with expected completion in 2002. When complete, proposes to double capacity.	50 000
	Baiyin Aluminium Smelter	Expansion to 130 000 t/y by 2002.	58 000
	Baotou Aluminium	Construction under way of a 50 000-t/y expansion of capacity to 160 000 t/y.	50 000
	Emeishan Aluminium Industry Consortium	First phase of expansion to 73 000 t/y completed early 2002. Subsequent expansions to 223 000 t by 2003 and 300 000 t/y by 2005.	50 000
	Fushun Aluminium Company	Replacement smelter start-up expected in July 2002 with completion in 2003. Considering further expansion.	90 000
	Guizhou - Chalco	Expansion of smelter under way to reach 395 000 t/y in 2004.	160 000
	Guizhou - Zunyi Aluminium plant	Expansion from 32 000 t/y to 132 000-t/y capacity started in 2001.	100 000
	Haixing - Chalco	Purchased by Chalco. Trials at new smelter in Qinghai Province starting up. Expected to reach full capacity 2002.	55 000
	Jiaozuo Wanfang Aluminium Co.	Smelter expansion to 180 000 t/y approved and under way. Further expansion expected to 300 000 t/y by 2004.	70 000
	Lanzhou Aluminium Co.	New 100 000-t/y smelter start up at end of 2001, closure of 50 000 t/y, total capacity to 182 000 t/y.	50 000
	Lanzhou Aluminium Co.	Feasibility studies for possible new 150 000-t/y smelter in Lainhai, Gansu. Decision expected 2002.	
	Nantun Shandong Smelter -Yankuang Group	Proposed 140 000-t/y smelter, expected to be in operation in 2004.	140 000
	Nanping Aluminum Industry Co.	Started construction of 50 000 t/y expansion to boost capacity to 80 000 t/y.	50 000
	Ningxia Zhongning aluminium smelter	Construction started on new smelter.	130 000
	Pingguo Smelter - Chalco	Expansion under way to be completed by 2005. Plans to expand by a further 220 000 t/y. Joint venture with Alcoa.	50 000
	Pingguo - Chalco - joint venture with Alcoa	Proposed tripling of capacity of the Pingguo aluminium smelter.	355 000
	Qinghai Aluminium	Expansion to 250 000 t/y expected to be completed by year-end.	50 000
	Qingtongxia Aluminium Smelter	Expansion completed. Plans to further upgrade existing plant. Alcan signed Memorandum of Understanding on a joint venture to have 50% interest in smelter and planned expansion.	130 000
	Shanxi smelter - Chalco	New 240 000-t/y smelter planned by 2005 with final capacity of 280 000 t/y in 2006.	
	Shanxi - Shanxi Guanlu Co. Ltd.	Company has approved 200 000-t/y expansion of smelter, seeking official approvals.	
	Shanxi - Taiyuan Aluminium Works	Expansion of smelter from 30 000 t/y to 110 000 t/y.	80 000

Country	Project/Company	Comments	Near-Term Change Amount (t/y)
China	Xiezhou Aluminium	Expansion of smelter from 33 000 t/y to 110 000 t/y completed. Plans further expansion to 200 000 t/y by 2005.	70 000
	Xiangxiang Aluminium Works	Seeking investors for expansion of plant from 12 000 t/y to 100 000 t/y.	
	Xuzhou smelter proposal - Jiangsu Aluminium	Decided to postpone new 100 000-t/y smelter.	
	Yichuan Power Group and Xinyuan Industry	New 100 000-t/y smelter to start production in 2003.	100 000
	Yunnan Aluminium - Kunming Smelter	Planned modernization of smelter from Soderberg to prebake technology.	175 000
	Zhenxing Group Co.	Construction of a 40 000-t/y expansion to total capacity of 60 000 t/y expected to be completed in 2002.	40 000
	Zouping Aluminium Co. Ltd	Completed first phase construction of new smelter. Expects to double capacity to 66 000 t/y by mid-2002. Plans thereafter to boost production to 200 000 t/y.	66 000
Dubai	Dubal	Upgrading approved.	155 000
	Dubal - Heron Project	Decision to double capacity of smelter postponed to 2002.	
Egypt	Egyptalum	Expansion and modernization under way. Capacity to be raised by 50 000 t/y by 2003 along with conversion of potline #5 to prebake technology.	50 000
Ghana	Volta - Kaiser	Two potlines closed due to lack of power in early 2002.	-80 000
Guinea	Guinea Aluminium Products Co.	Discussions on possible 240 000-t/y smelter.	
Iceland	New Smelter - Alcoa	Joint action plan with Icelandic government on new 320 000-t/y smelter.	
	Noral Project - Reydaral hf/Hydro Aluminium	Construction decision postponed to September 2002 for a new smelter with 240 000-480 000-t/y capacity.	
	Norðurál - Columbia Venture	Completed expansion of the capacity of Grundartangi smelter to 90 000 t/y.	30 000
	Columbia Venture Corp -	Possible expansion to 180 000 t/y and later to 300 000 t/y.	
India	Angul - Nalco	Expects completion of expansion to 345 000 t/y from 230 000 t/y in 2002.	115 000
	Renukoot - Hindalco	Completed 33 000 t/y expansion, plans further 100 000 t/y by 2003.	133 000
	Korba - Bharat Aluminium	Possible expansion of smelter from 100 000 t/y to 300 000 t/y by 2005.	200 000
	Orissa - Hindalco	Possible 300 000-t/y smelter.	
Indonesia	Perak Smelter	Proposed new smelter with capacity of 500 000 t/y.	
Iran	Iran Aluminium Company	Currently working on proposal for Arak smelter (110 000 t/y).	
Kazakhstan	Pavlodar - Aluminum of Kazakhstan	Financing completed for new 80 000-t/y smelter associated with the Pavlodar alumina refinery. Environmental and socio-economic discussions with public held in 2001.	80 000
Malaysia	Perak State Development Corporation / Charus Development Corporation	Potential new 500 000-t/y smelter to start construction in 2002 with completion in 2005.	
Mozambique	Mozal - Billiton and partners	Expansion of capacity of the Mozal smelter under way from 250 000 t/y to 500 000 t/y. Management contract awarded to SNC Lavalin of Canada and Murray and Roberts Engineering Solutions of South Africa.	250 000
Nigeria	Ikot-Abasi	Work under way to re-open the 193 000-t/y smelter.	
Netherlands	Vlissingen - Pechiney	Contract to SNC-Lavalin for modernization.	80 000
Norway	Sunndal - Hydro Aluminium	New prebake potline, closure of older potline.	168 000
	Mosjøen - Elkem	Modernization and expansion under way, 60% complete in early 2002.	75 000
	Lista - Elkem	Modernization completed.	
Qatar	Ras Laffan - United Development Co, Ferrostaal/ JGC Corp	Consortium's proposal for smelter in NE Qatar, has received licence to build smelter.	500 000
Romania	Alro smelter	To be sold by tender.	
Russia	Bratsk Aluminum smelter - Russian Aluminium	Feasibility studies and tests under way for conversion to prebaked anodes.	
	Komi	Hatch and Associates awarded contract for prefeasibility and engineering work on alumina refinery and smelter. Smelter capacity expected to be 500 000 t/y.	
	Leningrad - Vsevolozhsk Aluminum Smelter	Proposed smelter with a capacity of 147 000 t/y did not receive government approvals.	
	Leningrad - Sosnovy Bor Aluminum Works/Alutec Inc	Proposed new smelter, USTDA grant for research and design. Construction could start in 2003 on smelter. First stage of 24 000 t/y could be operational in 2004, with expansions thereafter to over 400 000 t/y.	
	Leningrad Volkhov Aluminum and Glinozyom.	Possible expansion and proposal for a new 200 000-t/y smelter.	

Country	Project/Company	Remarks	Near-Term Change Amount (t/y)
Russia	Sayansk - Russian Aluminium	SNC-Lavalin-Russian Aluminum Memorandum of Cooperation on expansion study and feasibility study for expansion of smelter from 400 000 t/y to 660 000 t/y.	
	Irkutsk - Alucom-Taishet	Pilot smelter start-up early 2002. Proposal for new 250 000-t/y smelter.	
	Irkutsk smelter - Sual Group	Modernization under way will increase capacity. Company plans additional potline to raise capacity by additional 75 000 t/y.	
	Bogoslovsk smelter - Sual Group	Modernization under way. Feasibility study on a new 300 000-t/y smelter.	
	Kandalaksha smelter - Sual Group	Replacement of older cells with prebaked anode cells to start in 2002.	
	Krasnoyarsk - Russian Aluminium	Modernization under way.	50 000
	Urals smelter - Sual Group	Potlines being replaced.	
Slovakia	Ziar-nad-Hronom - Slovalco A.S.	Expansion of smelter under way, completion expected 2003.	50 000
Slovenia	Kidricevo Talum d.o.o. smelter	Expansion of smelter under way, completion expected 2003.	80 000
Ukraine	Pervomaisk - Russian Aluminium	Planning for a new smelter.	
	Zaporozhye Aluminum Combine	Installation of prebaked anodes to increase capacity to 157 000 t/y from 110 000 t/y.	47 000
Undetermined	Pechiney	New US$2.2 billion AP50 smelter planned for one of several countries, 460 000 t/y.	
United States	Alcoa - Warrick	Power failure - loss of capacity to be rebuilt in 2002.	-75 000
Vietnam	Government of Vietnam	Start of new 75 000-t/y smelter planned in 2002.	
Venezuela	Alcasa - CVG Glencore	Restarting closed potline (50 000 t/y); considering an additional potline with additional 200 000-t/y capacity.	50 000
	Purerto Madryn smelter - Aluar	A planned expansion from 260 000 t/y to 410 000 t/y is currently on hold.	
Total			5 504 000

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