Aluminum

Wayne Wagner
Metal Materials Division
Minerals and Metals Sector
Telephone: (613) 996-5951
E-mail: wwagner@nrcan.gc.ca

2003 primary metal production:	$5.6 billion (e)
World rank (2003):	Third
2003 exports (unwrought):	$4.8 billion
Installed capacity:	2.72 Mt/y

Canada	2003	2004 (e)	2005 (f)
		(000 tonnes)	
Primary aluminum			
Production	2 792	2 590	3 000
Use	1 000	1 050	1 075

(e) Estimated; (f) Forecast.

Aluminum, in both its pure and alloyed form, is used to make a wide variety of products for the consumer and capital goods markets. Alcan reports that aluminum's largest markets are transportation (30%), packaging (17%), building and construction (18%), electrical (8%), consumer goods (6%), and machinery and equipment (9%). North America uses the largest amount of all regions in the world, accounting for 34% of total world demand. Asia accounts for 27% and Europe accounts for another 31%.[1]

AVERAGE (THREE-MONTH) ALUMINUM PRICES, LONDON METAL EXCHANGE

2001	2002	2003	2004 (f)
	(US$/t and US¢/lb)		
1 440 (65¢)	1 350 (61¢)	1 430 (65¢)	1 715 (78¢)

(f) Forecast.

[1] www.alcan.com/web/publishing.nsf/AttachmentsByTitle/Annual+Reports/$file/AR_2003.pdf.

CANADIAN OVERVIEW

- Canada's production of primary aluminum is expected to decrease by 7% to 2.6 Mt in 2004 from 2.791 Mt in 2003. Monthly Canadian production statistics can be obtained on Natural Resources Canada's Internet site at http://mmsd1.mms.nrcan.gc.ca/mmsd/production/default_e.asp.

- Aluminerie Alouette is nearing completion of a $1.4 billion investment to expand capacity to 550 000 t/y. The first metal is expected in early 2005 with full capacity to be reached later in the year. At that time, this smelter will be the largest in North America. Partners include: Alcan Inc. (40%), Aluminium Austria Metall Québec (20%), Norsk Hydro ASA (Hydro Aluminum - 20%), Société générale de financement du Québec (13.33%), and Marubeni Québec Inc. (6.66%). Further details are on the company's web site at www.alouette.com.

- 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 expects to receive regulatory approvals on the spin-off late in 2004. Novelis will officially start operations on January 1, 2005.

- Alcoa has participated in discussions on power with the Quebec government and Hydro-Québec over the past two years to obtain a block of power 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.

- Employees represented by the Syndicat des Employés de l'Aluminerie de Bécancour, United Steelworkers' Local 9700, started a strike on July 7 at the Bécancour smelter owned 75% by Alcoa and 25% by Alcan. 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.

- Alcan announced the closure of the four Söderberg potlines at the Jonquière smelter in early 2004, affecting 90 000 t/y of production capacity. The remaining 161 000 t/y of prebake capacity at the smelter remains in operation.

- 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.

WORLD OVERVIEW

- China became the largest producer of primary aluminum in the world in 2001 (3.4 Mt). Production increased by 28% in 2002 (4.3 Mt), 25% in 2003 (5.4 Mt), and is expected to increase a further 25% in 2004 (6.5 Mt).

- North American smelter production rates have fallen during 2004 due to closures and strike action. While a near-term rebound is expected, closures of Söderberg facilities expected in the next decade and high costs for, and limited availability of, power are expected to keep production at or near the current level for the medium term.

- Noranda Inc. and Century Aluminum Company completed the acquisition of Kaiser Aluminum's Gramercy alumina plant in Gramercy, Louisiana, and related bauxite assets in Jamaica for approximately US$23 million. Each company now owns a 25% stake in St. Ann Bauxite, formerly known as the Kaiser Jamaica Bauxite Company.

- Cambior Inc. has concluded an agreement with the Government of Guyana on the privatization of certain assets of Linden Mining Enterprises Ltd., a bauxite mining and processing operation wholly owned by the Government of Guyana. Omai Bauxite Mining Inc. has been created to revitalize and expand operations.

- Global Alumina Products Corporation (Global Alumina), a Canada-based company, has started work to develop, finance and construct a 2.8-Mt/y alumina refinery in the Boké region of the Republic of Guinea.

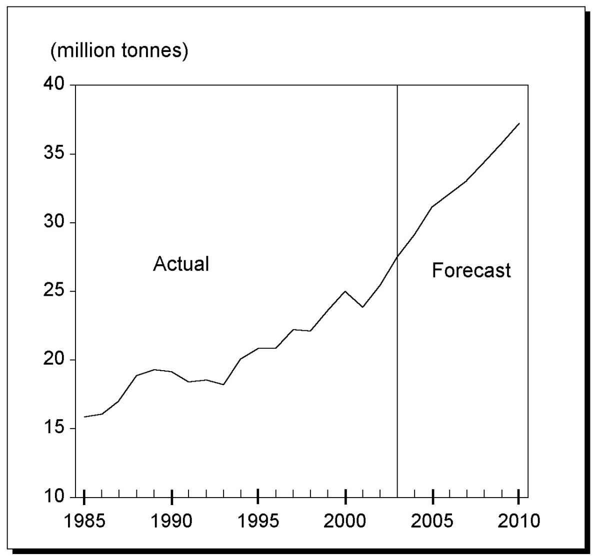
- New and expanded smelters and refineries around the world will increase global production capacity in 2005 by approximately 1.4 Mt (5%). For details, see the Aluminum chapter of the *Canadian Minerals Yearbook* (at www.nrcan.gc.ca/mms/ cmy/com_e.html) and company web sites listed in Table 1.

DEMAND OUTLOOK

The world's apparent use of primary aluminum is estimated to be approximately 29 Mt in 2004, about 6% higher than the 27.5 Mt used in 2003. In 2005, world demand for aluminum, dependent on the world economy, is expected to continue to be above its long-term trend of 3% annual growth.

Canada's reported use of all forms of aluminum decreased slightly in 2003 to 1.007 Mt from 1.019 Mt in 2002, and is expected to remain about the same in 2004. Over the longer term, use has increased at a rate of about 3% annually.

Figure 1
World Primary Aluminum Use, 1985-2010



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

CANADIAN AND WORLD PRODUCTION OUTLOOK

Canadian installed capacity for the production of primary aluminum is now 2.7 Mt/y and, with the completion and ramp-up in production from the expanded Alouette smelter at Sept-Îles, installed capacity will reach 3.0 Mt in 2005. Although production is expected to decline in 2004 to 2.59 Mt, Canada is expected to maintain its rank as the third largest primary producer after China and Russia. Canada is expected to produce approximately 3 Mt of primary aluminum in 2005 and a slightly higher amount in 2006 due to capacity creep in existing smelters.

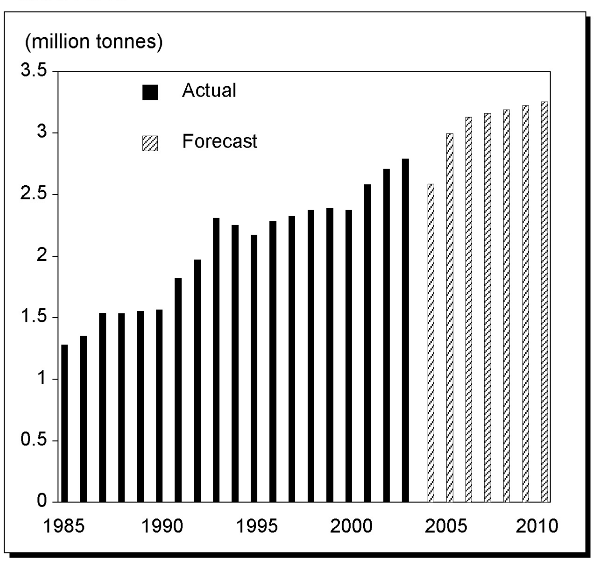
Production growth will flatten over the next few years, depending on production at Kitimat and closures of Söderberg capacity in the next decade (not included in Figure 2), which will lower Canadian installed capacity should modernizations not occur at these facilities. Smelter expansion projects in Quebec are dependent on the construction of new power generation facilities and/or the negotiation of additional long-term power supply contracts.

World production of primary aluminum increased to an estimated 27.9 Mt in 2003, up 7.4% from a revised figure of 26 Mt in 2002. Production is expected to increase by approximately 5% in 2004 to about 29.2 Mt.

The International Aluminium Institute (IAI) indicates that members' world daily average primary aluminum production for the year to October was 79 300 t, up 4600 t/d from a comparable period in 2003. Additional information can be obtained from the IAI's web site at www.world-aluminium.org.

IAI inventories of unwrought aluminum have remained relatively stable over the last year and were reported at 1.66 Mt in September 2004, up from 1.55 Mt in September 2003. IAI total inventories have also remained stable and increased slightly from 2.93 Mt last September to 3.00 Mt in September 2004. On the other hand, primary aluminum inventories at the London Metal Exchange (LME) warehouses have substantially declined throughout the year from 1.423 Mt in December 2003 to 0.681 Mt at the end of September 2004.

Figure 2
Canadian Primary Aluminum Production, 1985-2010



Source: Natural Resources Canada.

Price Outlook

Sales of aluminum, alumina and bauxite are generally valued in U.S. currency. The rapid changes in the relative value of other currencies to the U.S. dollar seen in the last two years have resulted in the potential for diverging conclusions on prices dependent on the currency considered.

Cash prices for primary-grade aluminum (in U.S. dollar terms) on the LME have trended upward during the year. LME cash prices started 2004 at approximately US$1601/t (73¢/lb) and have since risen approximately 12% to US$1800/t (83¢/lb) at the beginning of November. The Canadian currency equivalents for the start of the year at C$2062/t (94¢/lb) and the end of the year at C$2145/t (97¢/lb) represent a rise of about 4% in Canadian dollar terms.

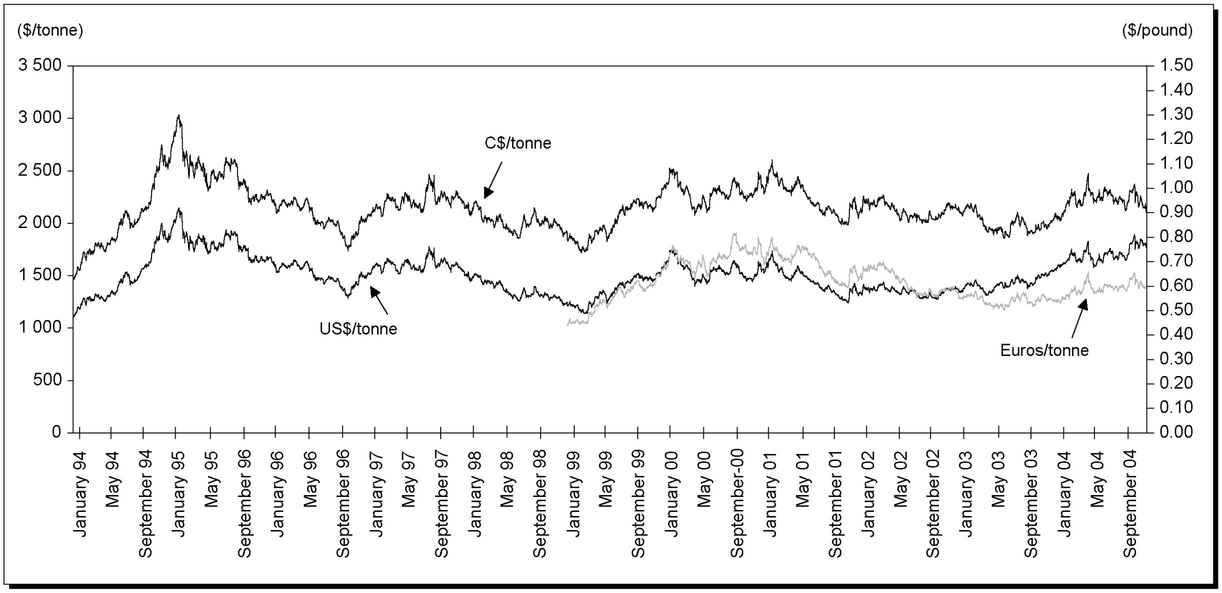
In U.S. dollar terms, cash prices set new nine-year highs of US$1894/t in early October. However, current cash prices in Euro equivalents (about 1400) are well below highs (about 1900) established in September 2000.

U.S. dollar-denominated prices appear to have broken out of a longer-term price range of between US$1200 and $1800/t (55¢/lb and 82¢/lb). Given the current strength of demand and pressure from existing higher prices for alumina, aluminum prices are expected to remain strong in 2005. On a longer-term basis, however, once Söderberg closures and expansions of existing operations have been completed in China and the expected new alumina and smelting capacity comes on line around the world, prices are likely to soften.

Note: Information in this article was current as of November 15, 2004.

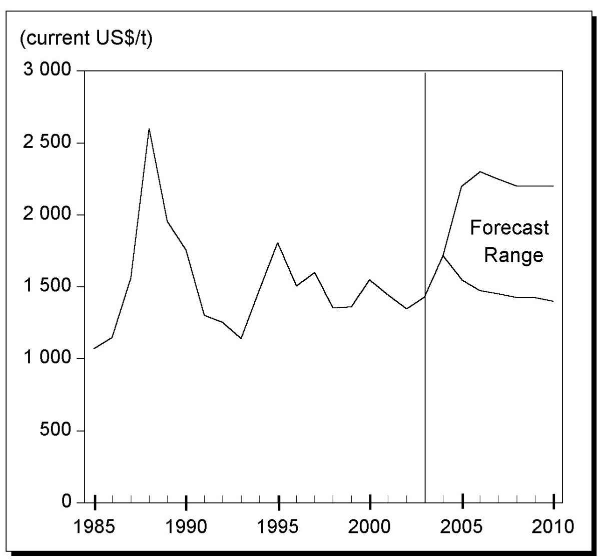
Note to Reader

Figure 3
Aluminum Prices, 1994-2004



Source: Natural Resources Canada

Figure 4
Aluminum Settlement Price, 1985-2010
Annual LME Settlement



Source: Metalprices.com.

TABLE 1. COMPANY WEB SITES FOR FURTHER INFORMATION

Company	Web Site Address
Alcan Inc.	www.alcan.com
Alcoa Inc.	www.alcoa.com
Alcoa World Alumina and Chemicals	www.alcoa.com
Aldoga Aluminium Smelter Pty Ltd.	www.aldoga.com
Aluar Aluminio Argentinio S.A.I.C.	www.aluar.com.ar
Alumina Limited	www.aluminalimited.com
Alumina do Norte do Brasil S.A.	www.cvrd.com.br
Aluminerie Alouette Inc.	www.alouette.com
Aluminerie de Bécancour Inc.	www.alcoa.com
Aluminium Association of Canada	www.aia.aluminium.qc.ca
Aluminium Bahrain B.S.C.	www.albasmelter.com
Aluminium Company of Egypt, The	www.egyptalum.com.eg
Aluminium Corporation of China Limited	www.chinalco.com.cn
Alumina Partners of Jamaica	www.kaiseral.com
Atlantsal hf	www.atlantsal.is
Bharat Aluminium Company Limited	www.balcoindia.com
BHP Billiton	www.bhpbilliton.com
Brunei Economic Development Board	www.bedb.com.bn
Cambior Inc.	www.cambior.com
Century Aluminum Company	centuryca.com
Coega smelter	smelter.csir.co.za
Columbia Ventures Corporation	www.nordural.is
Comalco Limited	www.riotinto.co
Companhia Brasileira de Alumínio	www.aluminiocba.com.br
Companhia Vale do Rio Doce	www.cvrd.com.br
Corporaciòn Venezolana de Guayana	www.cvg.com
CVG Alcasa	www.aluminio.com.ve
Dubai Aluminium Company Limited	www.dubal.ae
East Hope Group	www.easthope.com.cn
Elkem ASA	www.elkem.com
Federation of Aluminium Consumers in Europe	www.facealuminium.com
Global Alumina Products Corporation	www.globalalumina.com
Grupo Votorantim	www.votorantim.com.br
Hindalco Industries Limited	www.adityabirla.com
Indian Aluminium Company, Limited	www.indal.com
International Aluminium Institute	www.world-aluminium.org
KTD L.L.C.	www.ktdal.com
Marubeni Corporation	www.marubeni.com
Minmetals Nonferrous Metals Co., Ltd.	www.minmetals.com
National Aluminium Company Limited	www.nalcoindia.com
Noranda Inc.	www.noranda.com
Norsk Hydro ASA/Hydro Aluminium a.s.	www.hydro.com
Ormet Corporation	www.ormet.com
Pechiney SA	www.aluminium-pechiney.com
PT Antam Tbk	www.antam.com/News/news.htm
Queensland Alumina Ltd.	www.qal.com.au
Russian Aluminium (Russky Aluminii)	www.rusal.com
Saudi Arabian Mining Company	www.maaden.com.sa
Siberian-Urals Aluminium Company	www.sual.com
Sibirsky Aluminium	www.sibirskyaluminum.com
Slovalco A.S.	www.slovalco.sk
Société générale de financement du Québec	www.sgfqc.com
Sterlite Industries (India) Ltd.	www.balcoindia.com
The Aluminum Association, Inc. (USA)	www.aluminum.org
Tomago Aluminium Company Pty Ltd.	www.tomago.com.au