POTASH

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Overall, the potash market continued to firm during 2003 as evidenced by increased production and, importantly, by higher capacity utilisation rates. Although reported fob prices generally remained steady through the year, this apparent stability masked the effect of significantly increased ocean freight rates which producers were not able to recoup fully. As a result, while delivered prices increased because of the freight component, producers' netbacks have been eroded. The weakness of the US dollar, used as the basis for potash pricing, has further impacted producer netbacks.

On the demand side, however, buyers enjoyed increased purchasing power due to their own stronger currencies and this may have contributed to higher potash imports in certain markets (in China, the currency is pegged to the dollar). For the important potash-consuming crops, corn and soybeans in particular, but also oil palm and rice, prices were generally firm and allowed increased potash applications.

While world grain production and consumption have increased, in the past five years there has been a net shortfall so that world stocks of coarse grains are close to the levels last seen in the mid- to late-1970s. The 'stocks to use' ratio is at an historic low and has fallen sharply since 2001-02. Record high temperatures throughout Europe in mid-2003 particularly affected the year's wheat crop. Future increased crop acreage combined with increased intensity of fertiliser application will be required in order to reverse the decline.

World potash production is estimated to have exceeded 28 Mt K_2O in 2003, with all of the major producers recording increased output. Potash Corp of Saskatchewan (PotashCorp) in Canada and PO Belaruskali in Belarus each produced approximately 4.3 Mt K_2O (7.1 Mt KCl). IMC Global reported sales of 7.8 Mt of potash products (potassium chloride and potassium magnesium sulphate), equivalent to approximately 4.2 Mt K_2O, from its mines in Canada and the US, and K+S Kali GmbH produced a range of potassium and potassium/magnesium products in Germany, equivalent to 3.6 Mt K_2O. These four companies account for about two-thirds of world potash production. PotashCorp continued its acquisition of interests in other producers with the purchase in October 2003 of 26% of Arab Potash Co of Jordan from Jordan Investment Corp. In a number of countries, Belarus, Germany, Israel, Jordan, Spain, the UK and Brazil, the potash industry consists of a single company.

Potash is recovered from evaporite deposits and from surface and subsurface brines. About 93% of world potash production is used by the fertiliser industry to provide potassium, which is an essential plant nutrient.

In order to allow comparison of the potassium content of marketable products, production and consumption are often expressed in terms of the oxide, K_2O. Potassium chloride is the principal fertiliser product, containing 60-62% K_2O. Other salts for fertiliser use are potassium sulphate, potassium magnesium sulphate and potassium nitrates, in which the sulphate, magnesium and nitrogen contents are also valued as plant nutrients. Potassium chloride and potassium nitrate are used in a wide range of non-fertiliser applications including glass, ceramics, soaps and detergents, synthetic rubber and chemicals.

Bedded evaporite deposits are mined using conventional underground techniques in Canada, the US, Brazil, Russia, Belarus, Germany, Spain and the UK. The principal ore is sylvinite, a mixture of sylvite (KCl) and rock salt (NaCl). Langbeinite, potassium-magnesium sulphate, is mined in the US, where it is beneficiated for fertiliser use. Potassium sulphate and/or magnesium fertiliser products are also recovered from polyhalite and kainite, principally in Germany.

Solution mining techniques, based on sylvinite, are used at operations in Canada and the US. Surface and subsurface brines are the source of potassium chloride, principally in Israel and Jordan and, more recently, in China. Potassium sulphate is also recovered from brines in the US. Potassium nitrate is recovered from the mining of natural caliche in Chile. Both potassium nitrate and potassium sulphate for fertiliser use are recovered as secondary products through the reaction of potassium chloride with a source of sulphur or nitrogen.

Americas

Canada has ten potash-mining operations located in Saskatchewan and one in New Brunswick, and is the world's largest producer. Sylvinite resources are mined using both conventional and solution extraction techniques to produce a wide range of potassium chloride grades for fertiliser and industrial use. Modification of Saskatchewan provincial potash resource taxation has encouraged capital expenditure on existing operations, and the overall potash taxation scheme is to be simplified.

PotashCorp produced 3.7 Mt K_2O from its six mines in Canada, and received a further 571,000 t K_2O from its interest in IMC Global's Esterhazy mine. Overall, this was an increase of 10% in output compared with 2002. The company maintained its policy of adjusting production to meet market demand. Approximately 56% of output came from its Rocanville and Lanigan mines in Saskatchewan, with Allan and Cory in Saskatchewan and Sussex in New Brunswick accounting for most of the balance. The Patience Lake solution mine in Saskatchewan produces less than 200,000 t/y K_2O.

Although the company has unused capacity amounting to about 3 Mt K_2O, PotashCorp announced an expansion of 400,000 t/y (240,000 t/y K_2O) at its low cost Rocanville mine in Saskatchewan, at an investment of US$80 million. Capacity for compacted product will also be increased, to a total of 1.5

Mt/y. In 2003, Rocanville operated at 87% of capacity and accounted for 28% of PotashCorp's total production. In New Brunswick, where PotashCorp operates the Sussex mine and the surface facilities of the former Potash Company of Canada mine (where the underground operation was lost to a water inflow in 1997), production was just over 450,000 t K_2O and capacity utilisation was 95%. The Sussex mine continues to be affected by a water inflow that started in 1998. During drilling for a potential brine disposal well, an economic source of natural gas was discovered that provides a local energy source for PotashCorp operations.

PotashCorp acquired an interest of 26% in Arab Potash Co of Jordan from Jordan Investment Corp in October. Jordan Investment Corp retains an interest of 26.9%, with Arab Mining Co 21%, and a number of banks and companies holding the balance. The location of this investment will allow PotashCorp significantly easier access to markets in south Asia. Potash Corp also holds 9% of Israel Chemicals Ltd, which controls Dead Sea Works in Israel, and an interest of 20% in Soc Química y Minera de Chile.

Agrium Inc produced 1.67 Mt of KCl in 2003 from its conventional mine and processing facilities at Vanscoy, Saskatchewan.

IMC Global Inc reported total potash production of just over 8 million short tons, and sales of 8.6 million short ton (7.8 Mt), comprising potassium chloride from its Belle Plaine, Colonsay and Esterhazy mines in Saskatchewan and at Hersey, Michigan, and both potassium chloride and potassium magnesium sulphate from Carlsbad, New Mexico. This was an increase of over 600,000 t on 2002. Following the sale of its potassium sulphate line to Compass, IMC no longer produces potassium sulphate for its own account. It is estimated that IMC produced approximately 4 Mt of K_2O from its mines in Saskatchewan at Esterhazy, Colonsay and Belle Plaine (solution mine), including the volume produced on behalf of PotashCorp. In January, 2004, IMC and Cargill Inc announced the formation of a new company comprising the potash, phosphate and feed phosphate businesses of IMC with the phosphate, feed phosphate and nitrogen business of Cargill Crop Nutrition. The interests of the two companies will be 33.5% and 66.5%, respectively. Potash will account for about 20% of sales of the combined entity.

Canpotex Ltd, representing Saskatchewan producers (PotashCorp, IMC and Agrium) in offshore markets, achieved record sales over 6 Mt of KCl in 2003. In May 2004, PotashCorp, the largest participant in Canpotex, projected exports of 7.5 Mt over the coming calendar year.

Intrepid Mining LLC, the privately-owned company that acquired the small Moab solution mine and solar evaporation facility from PotashCorp at the beginning of 2000, purchased the potash assets of Mississippi Chemical Corp early in 2004 at a price of approximately US$27 million. Mississippi Chemical had filed for reorganisation under Chapter 11 in May 2003. Its two potash mines, East and West, produced 872,000 short ton of KCl in fiscal 2003 (to

June 30, 2003). Included in the sale was Eddy Potash, Inc, which suspended operations at the end of 1997. Capacity at the East and West mines is 560,000 short ton/y and 538,000 st/y, respectively. Reilly Industries Inc continued to recover KCl and low-grade potash salts from sub-surface brines near Wendover, Utah. In February 2004, Reilly announced that it had concluded an agreement for the sale of its operations to Intrepid Wendover Potash LLC. Production during 2003 was 86,000 st of potash (KCl) and 245,000 t of magnesium chloride brine. Reilly had owned and operated the facilities near Wendover since 1988, when they were purchased from Kaiser Aluminum & Chemical Corp. Intrepid is now the largest producer of potassium chloride in the US, and also the largest in terms of total nutrient (K_2O).

In Utah, Great Salt Lake Minerals Corp, formerly operated by IMC Global, reported sales in 2003 of 228,000 t of potassium sulphate, a marginal increase on the previous year. Great Salt Lake is a subsidiary of Compass Minerals International. In addition to acquiring IMC's potassium sulphate production facilities in Utah at the end of 2001, Compass gained IMC's domestic potassium sulphate marketing business and its potassium sulphate product line at the Carlsbad, New Mexico operations in mid-2003. At the same time, IMC sold most of its remaining minority interest in the Great Salt Lake operation to Compass. Through acquisitions, Compass has become a major salt producer, with mines in North America and the UK.

CVRD in Brazil reported production of 658,000 t of KCl in 2003, a modest increase from the previous year. Plans to expand capacity at the Taquari-Vassouras mine, to 850,000 t/y by the end of 2005, will continue with the expenditure of US$21.2 million in 2004 within a total budget for the expansion of US$67 million. The mine is expected to be in operation until 2017. The Brazilian potash market is growing rapidly and CVRD plans to capture part of that growth.

In Chile, SQM sold 284,000 t of KCl and 144,000 t of potassium sulphate to third parties in 2003. The production of secondary potassium and sodium-potassium nitrates increased by more than 20%, to 677,000 t (which reduced the amount of primary potassium chloride available for sale). The company reported increased sales volumes for its nitrate products, particularly in Brazil and China. SQM's principal production facility is based on the subsurface brines of the Salar de Atacama. Natural potassium-sodium nitrate (caliche) is mined by SQM at three smaller operations.

The Yumbes facility, which produces secondary potassium nitrate based on caliche and imported KCl, will be acquired by SQM from PotashCorp on exercise of its option. During 2004, PotashCorp will operate Yumbes on a breakeven basis and will draw down the existing product inventory prior to the closing of the sale.

Europe and Former Soviet Union

K+S KALI GmbH produced approximately 3.6 Mt of K_2O equivalent in 2003 from its six mines in Germany. In addition, the development of a new zone of

sylvinite at Unterbreizbach is proceeding, with the construction of haulage and ventilation drifts that will link it with the Merkers and Hattorf-Wintershall mines. The total capital expenditure for this development is €40 million. Annual production from the new zone will be 1.5 Mt and the ore will be processed at the Wintershall and Hattorf plants. The sylvinite ore will provide significantly higher-grade material for processing compared with the mixed potassium and magnesium minerals that provide the majority of ore in the Werra district. K+S holds approximately 13% of the world potash market and is the leading producer of potassium and magnesium sulphate fertilisers. K+S operates six mines: Bergmannssegen-Hugo, Sigmundshal, Neuhof-Ellers, Hattorf-Wintershall, Unterbriezbach and Zielitz. The interest of BASF in K+S has been reduced from 17.6% to just over 10%. Deusa International GmbH produces potassium chloride and co-product industrial magnesium chloride at its solution mine at Bleicherode.

Cleveland Potash Ltd, which operates the Boulby mine in northern England, is a subsidiary of ICL Fertilizers of Israel. Capacity is approximately 900,000 t/y KCl. The mine is located within the North Yorkshire Moors National Park and, at over 1,000 m, is the deepest potash mine in Europe.

The Suria and Cabanasas/Vilafruns mines in Spain are located in Catalonia and owned by ICL Fertilizers of Israel. Nominal capacity is over 1 Mt/y KCl but recent output is estimated in the range between 660,000 t and 700,000 t. ICL reported total potash production from its operations in Israel, the UK and Spain at approximately 5 Mt/y, all of which is potassium chloride.

Potash production in France ceased at the end of 2002, ahead of the planned closure schedule at the end of the year, as a result of a fire in October. The Marie-Louise Ouest mine of Mines de Potasse d'Alsace had been scheduled to close in 2002, followed by Amélie in 2004, under a long-term plan for the industry that was initiated over 25 years ago. Annual production of 1.5-2.0 Mt/y K_2O was maintained between the late-1950s and early-1990s from a number of mines near Mulhouse in Alsace.

Total production in Russia reached 4.6 Mt K_2O in 2003. JSC Uralkali, the larger of the two producers, increased output by 8% to 2.6 Mt K_2O. The company won the tender for the right to develop potash resources in the area of Ust-Yaivinsk, near to the oldest of its operations at Berezniki and where reported reserves are sufficient to support production until 2015. It is planned that 3.3 Mt/y of sylvinite will be produced, starting in 2009. Overall, production is scheduled to increase to 7 Mt/y KCl (4.2 Mt/y K_2O). Uralkali is also investing in a dedicated, natural gas fuelled power generation unit, as well as mining equipment, warehousing and rail cars. The European Bank for Reconstruction and Development is supporting Uralkali with a seven-year loan. The marketing agreement between Uralkali and Canpotex, in place since January 2001, was terminated in April, 2003 with effect from June 1.

JSC Silvinit, the second producer in Russia, also recorded increased production in 2003, to 2.1 Mt of K_2O.

In Belarus, where PO Belaruskali increased production by nearly 0.5 Mt K_2O compared with 2002, the company plans to develop a new mine, Number 5 or Krasnoslobodski, for the supply of 6 Mt/y ore for processing at the Soligorsk 2 plant. This will replace ore presently mined at the Soligorsk 1 and 2 mines. The project is part of the 2002-10 development plan for Belaruskali, which will provide potash resources for more than 40 years at approximately the current rate of production. The cost of the new mine is reported at just over US$180 million. The overall investment plan for Belaruskali is US$1,000 million. JSC Silvinit and PO Belaruskali are represented in export markets by International Potash Co (IPC).

Minor quantities of potash are produced in Ukraine, south of Lvov, where output appears to be declining steadily.

Middle East and Asia

Israel's Dead Sea Works is part of the ICL group, which also owns Cleveland Potash Ltd in the UK and Iberpotash in Spain. Production in Israel was just over 2 Mt K_2O. Dead Sea Works extracts potash salts by solar evaporation of brines from the Dead Sea.

Arab Potash Co in Jordan reported sales of 2.05 Mt of KCl in 2003 from its solar evaporation system, also based on Dead Sea brines. Production is estimated at the same level. The company's planned capacity expansion is scheduled for completion in 2007. APC has an interest of 55% in Jordan Magnesia Co Ltd and provides magnesium chloride-rich brine feedstock for the new magnesia plant at Al-Safi commissioned at the end of 2003.

Qinghai Salt Lake Industry Group will commission the new 1 Mt/y capacity KCl plant in March 2004 and plans to increase capacity to 1.6 Mt/y. Sinochem has a 21% interest in Qinghai Salt Lake Potash Co Ltd and has contracted to receive 500,000 t product in 2004.

Capacity utilisation and new projects to meet world demand

Total world potash fertiliser demand, reported by the FAO for 2001, was 22.7 Mt of K_2O, an increase of 1 Mt K_2O over 2000. It is estimated that total demand (fertiliser plus industrial use) was just under 24.5 Mt of K_2O in 2001 and that it increased to approximately 27.6 Mt in 2003. Potash demand is expected to increase steadily over the remainder of the decade, at a rate of just over 2%/y, principally in South America and Asia. PotashCorp indicates that in 2003 the average rate of utilisation of capacity, excluding its own, was about 94%. (As noted above, PotashCorp average utilisation of its own capacity was 55%).

Excess production capacity in the potash industry currently amounts to about 7.2 Mt KCl (4.3-4.4 Mt K_2O), of which PotashCorp reports that it owns about 69%. IMC Global owns about 14% of excess capacity. The producers in Russia and Belarus are now considered to be operating essentially at full capacity utilisation (although production in 2003, at 8.8 Mt K_2O, is lower than the record of over 10 Mt K_2O that was achieved immediately prior to the

break-up of the former Soviet Union), and are making significant investments in order to maintain productive capability. Elsewhere, the ability to utilise excess capacity fully may be limited, or require significant investment. Investment in incremental capacity expansion is already taking place, as noted above, as producers see the opportunity both to reduce operating costs and to participate in the market, which is growing slowly but quite steadily. PotashCorp believes that there are few geographic opportunities and that, with the high capital cost and long lead time, new grass- roots capacity is not justified at current price margins.

Among the projects on which technical and economic analyses have been carried out, the Udon South (Somboon) project, owned by Asia Pacific Potash Corp, a subsidiary of Asia Pacific Resources, continues to be advanced in Thailand. Asia Pacific signed a memorandum of agreement in November, 2003, with China State-Owned Enterprise Investment Co in respect of co-operation between the two to develop the project. Asia Pacific completed its review of the technical and economic aspects of the Udon South project and concluded that, from an initial production rate of 1 Mt/y, the project could be expanded as market share was gained, to reach 2 Mt/y. In addition, while the first phase would require a capital investment of over US$300 million, the expansion cost of US$220 million could be funded from cash flow. The company has applied for mining leases covering the Udon South project area under the terms of its concession agreement. Securing both product offtake agreements and the necessary financing for the project will be needed in order to develop Udon South. The company indicates that the mine will be brought into production in 2008. The adjacent Udon North tract remains under exploration.

Potasio Río Colorado SA entered into an agreement with Rio Tinto Minerals Development Ltd for an exclusive option to acquire 100% of its potash project in northwestern Argentina. The project is located on the border between the provinces of Neuquen and Mendoza. Production is likely to be by solution mining with initial output of 0.5 Mt/y of KCl, doubling within five years, and destined principally for the Brazilian market. Early in 2004, the authorities in Nuequen announced an international tender for the exploration and development of potash resources located in the department of Pehuenche.

The Russell project, owned by Manitoba Potash Corp (Government of Manitoba and Entreprise Minière et Chimique of France), remains dormant. It is located in western Manitoba at the southeastern edge of the Prairie Evaporite Basin, which hosts the Saskatchewan potash mines.

Australian company, Admiralty Resources NL, reported that it continued to work on its Salar de Rincón project in Salta Province, Argentina. Bulk samples were collected for test work to be completed by Hazen Research in the US. The project is based on the recovery of lithium, magnesium and potassium values from the brines of the salar, using solar evaporation.

It has been reported that the development of sylvinite resources is under way and that a second project is planned in the area of Lop Nur, in Xinjiang Uygur Autonomous Region, China. Although China is developing its domestic potash resources, the output will remain low compared to projected requirements. The geological potential for extraction of potash from underground, bedded deposits, appears low.

Potash exploration in the Vientiane basin in Laos was initiated in 2003 under the auspices of an agreement between the Chinese Province of Yunnan and the Lao Government.

In 2003, Vulcan Minerals Inc, an exploration company focusing principally on oil and gas, reported the intersection of a potash horizon at Flat Bay, Newfoundland.

Trade Issues

Potash entering the European Union from Russia, Belarus and Ukraine remains subject to anti-dumping duties (although volumes exported from Ukraine are insignificant). Among the ten countries that joined the EU in May 2004, Poland, in particular, along with Hungary and the Czech Republic, are important markets for potash from Russia and Belarus. The total volume of imports from the Central European countries joining the EU exceeds 1 Mt/y. Discussions in the early part of 2004 have resulted in a transition period of one year before duties apply in these markets. Potash production in the EU, from Germany, the UK and Spain, is insufficient to meet demand within the enlarged community.

Prices

Prices reported by Fertecon for spot standard potash, fob Vancouver, were approximately US$115/t KCl, and some US$10/t higher for granular grade, throughout 2003. These were essentially unchanged from the previous year. In April, 2004, however, Fertecon reported a sharp increase in fob prices, to about US$127/t KCl for standard material out of Vancouver, reflecting the acceptance among buyers of tight supply conditions, notwithstanding freight costs which have doubled since the second half of 2003.

Industry average prices were reported by the USGS at US$155/t K_2O (US$94/t KCl), fob mine, in the US for potassium chloride. The average, across all products (including potassium sulphate and potassium magnesium sulphate) in the US, was US$230/t K_2O fob mine, for the 12 months ending June 30, 2003. Natural Resources Canada reported that the average value of Canadian output in 2003 was C$180/t K_2O, or US$128.5/t K_2O (US$77.75/t KCl).

PotashCorp reported an average of US$80/t KCl sold in 2003. Although the average price per tonne increased for sales in North America (compared with 2002), the decline in offshore sales revenue was nearly US$5/t. IMC reported an average sales price of US$73 per short ton in 2003, compared with US$74 in 2002.

In May 2004, PotashCorp announced its new listed prices for domestic North American deliveries, citing extraordinarily tight supply and demand conditions. Granular grade was quoted at US$118/st of KCl (US$130/t), fob Saskatchewan mine, an increase of US$10/st for sales to mid-July. For July 19, 2004 and forward, granular grade is listed at US$133/st of KCl fob mine.

World potash production ('000 t K_2O)

	2001	2002	2003[p]
Belarus	3,687	3,791	4,229
Brazil	357	376	390
Canada	8,152	8,502	9,145
Chile	365	390	420
China	395	450	450
France	250	100	-
Germany	3,551	3,450	3,600
Israel	1,774	1,930	2,050
Jordan	1,197	1,200	1,200
Russia	4,258	4,400	4,600
Spain	471	407	400
Ukraine	15	10	10
UK	532	540	610
US	1,200	1,200	1,100
Total	**26,204**	**26,746**	**28,204**

Sources: UN Food and Agriculture Organization; Fertecon; United States Geological Survey; Natural Resources, Canada; British Geological Survey; Corporate reports; Potash & Phosphate Institute.