

## ISRAEL

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Since its formation in 1948, the Jewish state's location on the eastern shore of the Mediterranean Sea surrounded by Arab and predominantly Islamic countries has influenced its foreign relations, demography and economic policy. Problems with national security and the need for a strong military force has necessitated dependence on foreign economic aid, particularly from the US, and continuing political conflict has isolated Israel economically from the region. This continues in 2004, with uncertainty over the future of Iraq and the violent battle between Israel and opposing organisations like Hamas. The economy was adversely affected by the global downturn in the high tech sector and a marked decrease in tourism. There appears to be some signs of recovery, although set backs are common and investment skittish.

The country's minerals industry is based largely on the production of industrial minerals and related inorganic chemicals and metals from the mineral-rich saline waters of the Dead Sea. Exploitation has allowed Israel to become a large-scale producer of potash, salt, bromine, magnesia and magnesium metal, plus numerous downstream products. The country is also a significant supplier of fertiliser and chemicals based on the minerals and chemicals from the Dead Sea, plus phosphate rock. Commercial production is dominated by the subsidiary companies of Israel Chemical Ltd (ICL), in particular Dead Sea Works (potash and salt), Dead Sea Bromine (bromine and bromine derivatives), Dead Sea Periclase (magnesia-based precuts), Dead Sea Magnesium (magnesium metal), Rotem Amfert Negev (phosphates, phosphate chemicals and fertilisers), Rami Ceramic Industries (ceramics and refractories), Negev Industrial Materials, Fertilisers and Chemicals, and PAMA (oil shales).

ICL is organised into four core segments: ICL Fertilizers, ICL Industrial Products, ICL Performance Products and ICL Metallurgy. Of particular interest is ICL Fertilizers, which combines Dead Sea Works Ltd (DSW) and Rotem Amfert Negev Ltd. Subsidiaries include Iberpotash SA in Spain, Amsterdam Fertilizers BV (Amfert) in the Netherlands, Cleveland Potash Ltd (CPL) in the UK, and Fertilizers & Chemicals Ltd. This company produces approximately 5 Mt/y of potash at DSW, Iberpotash and at CPL, as well as 4 Mt/y of rock phosphate mined at the Zin, Arad and Oron mines in Israel, which is used for the production of 1.7 Mt/y of granular fertilisers and 550,000 t/y of P<sub>2</sub>O<sub>5</sub> for phosphoric acid. ICL Fertilizers' phosphate-mining operations in Israel, along with its fertiliser production facilities at Rotem, Israel, and at Amfert, Netherlands and Germany, produces a variety of phosphate fertilisers.

ICL Fertilizers accounts for 11% of world potash production and 13% of international potash trade (excluding the cross-border trade between the US and Canada), 3% of world phosphate-rock production and 3% of international phosphate rock trade.

In Israel, DSW is also one of the lowest-cost potash producers in the world and its geographic location allows shipment westwards through the Mediterranean Sea and eastwards through the Red Sea. Overseas, ICI controls significant potash capacity outside Israel. ICL Fertilisers now owns CPL in northeast England, which produces approximately 1 Mt/y of potash and over 500,000 t/y of by-product road salt from underground mines. The company has annual sales of £90 million. In addition, through the acquisition of the Spanish potash production facilities of Grupo Potasas, ICL owns 100% of Iberpotash SA in Spain. Overall, DSW potash production in Israel, the UK and Spain is approximately 5 Mt/y, making it one of the five largest producers in the world and the second-largest producer in Europe. In late 2003, ICL signed a US\$160 million deal to supply 1.6 Mt of potash to China's Sinochem over a three-year period.

Rotem Amfert Negev Ltd produces 1.3 Mt/y of fertilisers, 340,000 t/y of P<sub>2</sub>O<sub>5</sub> fertiliser-grade phosphoric acid, 80,000 t/y (as P<sub>2</sub>O<sub>5</sub>) of food-grade phosphoric acid, 4 Mt/y of phosphate rock, 50,000 t/y monopotassium phosphate, and 12,000 t/y of liquid detergents for the dairy products industry. Production is based on the Zin, Oron, and Arad phosphate-rock mines in the northern Negev. Overall, ICL is one of the world's most integrated manufacturers and suppliers of phosphate products and one of the five largest fertiliser companies in the world, with manufacturing facilities in Israel, Spain, England, Holland, Germany, Turkey, and Belgium.

Dead Sea Bromine Group's (DSBG) bromine and bromine compounds account for about 25% of ICL's revenues; at Sdom on the Dead Sea the group operates the world's largest elemental bromine production plant having a capacity of more than 200,000 t/y of bromine, equivalent to about 35% of world bromine production. Production in 2003 was estimated at 206,000 t, just short of the US output of 216,000 t. About 90% of Israel's bromine production is for export and accounts for some 80% of the international trade, with shipments to over 100 countries. The main markets for ICL's bromine-based products are in industrial chemicals, flame retardants (FRs), soil and space fumigation, organic intermediates for numerous industries, monomers for specialty polymers, chemicals and inorganic salts for oil drilling, and products for the photographic, cosmetic and air-conditioning industries.

ICL is also expanding and diversifying its chemical product lines into downstream value-added products, which represent about 30% of sales. Magnesium chloride flakes and pellets have helped increase revenues, as have sales of aluminium chloride used as a catalyst in organic production processes. Through a joint venture with Volkswagen AG, it additionally produces pure magnesium metal and magnesium alloys, representing about 45% of sales, and accounting for about 9% of total primary magnesium production in the world. Lower prices for magnesium and high-energy

demand present challenges, and the company is in the forefront of negotiations about new gas finds in the Mediterranean.

Dead Sea Periclase has the capacity to produce 100,000 t/y of high purity, sintered magnesia at Mishor Rotem, as well as 13,000 t/y at the extremely high-purity fused magnesia plant operated by Tateho Dead Sea Fused Magnesia Co, a 50:50 JV between DSP and Tateho Chemical Industries Co of Japan (TCI). Magnesium hydroxide for use in FRs is also produced and marketed by Dead Sea MFR, a 50:50 JV between DSP and sister company, Dead Sea Bromine Group.

ICL is also involved in the development of new domestic gas fields through the installation of the production infrastructure. It is hoped that access to the natural gas will improve the profitability of some ICL operations, in particular the energy-intensive magnesium plant. This natural gas supply should also have a positive impact on the domestic energy market since more gas and less coal would be used in Israeli power stations.

Climate and topography, as well as geographic conditions, make Israel an ideal location for solar salt production. Israel Salt Industries operates highly mechanised solar evaporation plants that produce pure, high-quality industrial and edible salts, and over 15% of annual production is exported to the Far East, Africa, and Europe from three plants (Atlit on the Mediterranean, Eilat on the Red Sea, and Kalia on the Dead Sea). These plants process seawater into table salt as well as salt for the food industry, water softening, and for other industrial applications. Costing almost US\$10 million, new evaporation ponds have been built at Ein Evrona north of Eilat for mainly export production. A US\$3 million salt-washing and packing plant operates at Eilat, and the company has a significant interest in one of Israel's leading redistributors to the institutional market and intends to invest in further real estate projects

The domestic cement industry has faced problems, including a decline in demand and cheap material coming in from Jordan and Turkey. One plant has closed and clinker is only produced in the Ramle plants. Neshor Israel Cement Enterprises has been the country's cement producer and has traditionally accounted for over 7 Mt/y of cement. Production of flint clays and most kaolin has ceased so that only brown clays are mined (in the Ramon Crater). There is, however, an increase in production of the Mamshit clays (carbonatic), which supply the raw materials for two tile plants, one of which is new facility in Yeroham and a joint Italian venture.

With the opening of two flue-gas desulphurisation (FGD) units in Ashqelon, there has been an increase in the consumption of industrial limestone. Negev Industrial Minerals (NIM) closed its activity in Makhtesh Ramon (flint clays and kaolinites) so that only the 'chocolate' kaolinitic clays are still mined. Along with lime (at least 275,000 t/y), there is also production of gypsum (50,000 t/y), silica sand (230,000 t/y), crushed stone (35,000 t/y), and caustic soda (15,000 t/y). There is new sand extraction activity in Mishor Rotem intended

for the building sector but increasing amounts are going to industrial uses (providing competition with sands supplied by Negev Industrial Minerals).

Israel's diamond industry, with annual exports valued at more than US\$1 billion, suffered some setbacks in 2003 as the fear of SARS undermined the market in the Far East, which accounts for 15-20% of Israel's diamond exports. However, the market appears to be recovering, along with the economy. At the same time, it was announced that Emaxon Finance International Inc, a member of the DGI Group of companies located in Israel's Diamond Exchange, would invest US\$15 million to help finance Société Minière De Bakwanga (MIBA), the largest diamond mining company in the Democratic Republic of the Congo (DRC).

MIBA is 80% owned by the DRC Government and 20% by Belgium-based Sibeka, a major percentage of whose shares are held by De Beers. Under the agreement, US\$10 million will be used to enable MIBA to acquire capital equipment and plant and so expand production, and an additional US\$5 million loan will be used for MIBA's working capital requirements. Over the course of the next four years, the DGI Group will acquire 88% of MIBA's diamond production, thereby virtually eliminating MIBA's sales and marketing risks and thus encouraging procurement of further financing. The purchase price of MIBA's diamonds will be established by independent London-based professional evaluators, with 5% discounts to Emaxon in return for the offtake obligation. The remaining 12% of MIBA's output will be sold to JFPI Corp and on the free market at international market prices.

In September 2003, MIBA delivered the second shipment of diamonds under the new agreement and after appraisal by the independent evaluators in London the parcel of diamonds was shipped to Emaxon's offices at the Israel Diamond Exchange. Then, in April 2004, MIBA announced plans to increase its production of rough diamonds and to attract new joint venture partners. The diamond producer plans to spend about US\$15 million in 2004 on digging and processing rough diamonds in order to raise production to 8.5 Mct in 2005, from 6.7 Mct in 2003.