

ISRAEL

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Recent turbulence in the Middle East has not helped the tourist industry in Israel nor the once booming high-tech sector. The latter, which has accounted for roughly 75% of export growth in recent years, has also suffered from the worldwide tumble in high-tech stocks and has lowered foreign investment which had been up 63% in the first half of 2000 over the same period in the previous year. Increasing violence, the US slowdown, and the Japanese financial situation can't help but cast a pall over the economy. Expectations are that the shekel will depreciate this year and a gentle decline could leave some pleased as exporters at least might welcome devaluation to enhance trade. During the past ten years, Israel has certainly moved towards a more open and competitive market-oriented economy and has also privatised some government-owned companies, yet public spending remains over half of GDP, the top marginal income tax rates are over 60%, and there is considerable opposition to tax reforms. Fending off recession will depend on the financial scene internationally, but also on internal dynamics - Israel's own competitiveness and perhaps most significantly what little remains of the peace process.

In the meantime, Israel is fortunate to have a strong mineral sector. Mineral/chemical production of interest includes flint clays and kaolin (40,000 t/y each), gypsum (50,000 t/y), silica sand (230,000 t/y), crushed stone (35,000 t/y), caustic soda (15,000 t/y), and lime (275,000 t/y). Diamond cutting and jewellery fabrication have also become significant and several years ago Israel opened an exchange for rough diamond in Tel Aviv; worked and rough diamonds account for almost 20% of imports. Yet it is the very much alive Dead Sea that really animates this sector. Its mineral-rich saline waters have made Israel a major producer of

potash, salt, bromine, magnesia and magnesium, and numerous downstream products. The country is also a significant supplier of fertiliser and chemicals with large-scale phosphate production.

Commercial production is dominated by subsidiary companies of the Israel Chemical Ltd Group (ICL), in particular Dead Sea Works (potash and salt), Dead Sea Bromine (bromine and bromine derivatives), Dead Sea Periclase (magnesia-based products), 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, PAMA (oil shales). Overseas involvement includes PM Chemicals of Italy, BK Giulini Chemie of Germany (through Rotem-Amfert-Negev), and SQM of Chile (potash, nitrates, and lithium products). ICL accounts for 35% of world bromine production, 9% of world potash production, and 16% of international potash trade (excluding the US and Canada), and 9% of the Western world's production of magnesium metal products.

Dead Sea Bromine is organised into four divisions -- Industrial Chemicals, Flame Retardants, Fine Chemicals, and Biocides. More than 90% of the output is exported accounting for 60% of international trade in bromine and bromine derivatives serving more than 100 countries. In the first half of last year the sales of the Bromine Group, controlled by Israel Chemicals Corp., amounted to about US\$278 million compared to approximately US\$235 million in the corresponding period last year. The growth of about 18% is partially due to the full consolidation of Clearon, starting from July 1, 1999 (when DSW sold its 50% stake in Clearon, a producer of chlorine-based

products in the US), that increased the sales by about US\$22 million. The surge is also caused by a rise in sales and increased demand for flame retardant products, owing to the increased demand for personal computers, electronics and telecommunication products, as well as the rise in calcium bromide sales to the oil-drilling industry. DSB has launched an e-commerce initiative for the sale of specialist chemical products to the oil drilling service industry currently handled by two subsidiaries - Synergy Fluids in Houston, and Bromine Chemicals in London.

Earlier in 2001, Dead Sea Works and Rotem re-organised their marketing and logistics divisions by merging the Rotem Amfert Negev marketing activities into the DSW headquarters at Beer Sheva. At the beginning of this year DSW, through its subsidiary Ashly Chemicals, increased its share in Iberpotash SA in Spain by purchasing the 20% owned by the Catalanian chemicals company, La Seda de Barcelona thus giving DSW an 80% ownership share, with the Spanish sepiolite producer Tolsa holding 20%. DSW acquired its 60% share in 1998. Overall, DSW potash production in Israel and Spain is some 3.75 Mt/y, which makes it the fourth largest potash producer in the world contributing approximately 10% of world production. In Israel, DSW is also one of the lowest-cost producers of potash in the world, and its geographic locations allow shipment westwards through the Mediterranean Sea and eastwards through the Red Sea. The group's Chemical Products Division markets a variety of salts and chemical products extracted from the minerals of the Dead Sea. Magnesium chloride flakes and pellets spearheaded a significant increase in sales revenue for this sector. Production from the aluminium chloride plant last year increased to 3,000 t, up from 1,000 t in 1998, its first year of operations. Sales of aluminium chloride, used as a catalyst in organic production processes, reached a level of 2,600 t. Overall, direct export sales accounted for 69% of the division's output,

while most of the remainder was directed at local industries for use as raw material for export-oriented products.

Rotem Amfert Negev Ltd. is an integrated, multinational phosphate group manufacturing and marketing a comprehensive range of products based on phosphate rock as raw material and leading to downstream derivatives including phosphoric acids, fertilisers, specialty chemicals and phosphate salts. The group, formed through a merger of Negev Phosphates, Ltd and the Rotem-Amfert Group in 1991, is the ninth largest industrial group in Israel producing 1.3 Mt/y of fertilisers, 340,000 t/y of P_2O_5 fertiliser grade phosphoric acid, 80,000 t/y (as P_2O_5) of food-grade phosphoric acid, 4 Mt/y of phosphate rock, 50,000t/y of 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.

Dead Sea Magnesium (DSM), a joint venture between the Magnesium Division of DSW (65%) and Volkswagen AG of Germany (35%), continues to operate a magnesium metal plant at Sedom through the electrolytic decomposition of carnallite. After the plant start up in 1996, production has ramped up from 7,000 t in 1997 to 25,000 t in 1998 to 28,000 t in 1999 and further increases were planned for last year. Spectrum Arabieh of the US announced that test results show magnesium production costs are 60% less than those of solar evaporation and that it was negotiating a joint-venture agreement with a Jordanian company to conduct a feasibility study on locating a large commercial magnesium extraction facility on the Jordanian side of the Dead Sea.

Dead Sea Periclase Ltd (DSP), an associate company of DSW, has the capacity to produce 100,000 t/y of high-purity, sintered magnesia at Mishor Rotem as well as the 13,000 t/y of extremely high-purity fused magnesia plant, operated by Tateho Dead Sea Fused Magnesia Co., a 50-50 joint

venture between DSP and Tateho Chemical Industries Co. of Japan (TCI). The products, based on TCI's fusion technology combined with DSP's premier sinter MgO raw material, are sold crushed, sieved and packaged according to customer requirements, enabling clients to produce a range of top quality refractory products. At the same time, magnesium hydroxide for use in flame retardants is produced and marketed by Dead Sea MFR, a 50-50 joint venture between DSP and sister company, Dead Sea Bromine Group.

Nesher Israel Cement Enterprises is the country's sole cement producer and accounts for over 7Mt/y of cement. Proposed modifications to the company's plant in Haifa would see the site's three conventional wet kilns replaced by one energy-efficient dry kiln bringing significant reductions in NO_x, SO₂ particulates and CO₂ emissions. Environmentally conscious, Nesher is set to invest US\$200 million in the new dry line depending on approvals. It is also liaising with county and state officials to begin burning refuse-derived fuel from municipal waste at the company's Ramla plant to reduce energy costs there and waste to landfill sites. The company is currently involved in a plant to recycle municipal sewage sludge - to sterilise sludge with cement kiln dust. The new plant to be operated by Nesher has been designed to treat 40 t/d of sewage sludge from the end of last year.

Until recently Israel has had essentially no commercial fossil fuel resources and has been dependent on imports to meet its energy needs, although it has tried to use alternatives such as solar and wind energy. Israel imports around 9 Mt/y of coal and demand is growing largely due to the rapid growth in electricity consumption. With the coming expansion of Israel's fourth coal-fired power plant at Ashkelon, Israeli coal imports could rise to over 10.5 Mt/y by 2002. Little progress has been made on energy sector

privatisation since the late 1980s, when Paz Oil Co. (the largest of three main oil-marketing companies in Israel) and Naphtha Israel Petroleum (an oil and gas exploration firm) were sold to private investors. Other energy companies such as the Oil Refineries Co., which operates Israel's two refineries (at Haifa and Ashdod), and the Oil Products Pipeline Co., which operates Israel's oil pipelines, remain state-owned. Although oil exploration in Israel has not proven successful in the past (current output is less than 1,000 bbl/d), drilling is being stepped up. Israel's Petroleum Commission has estimated that the country could contain 5 billion barrels of oil reserves, most likely located underneath gas reserves, and that offshore gas potentially could supply Israel's short-term energy needs.

Geologically, Israel appears to be connected to the oil-rich Palaeozoic petroleum system stretching from Saudi Arabia through Iraq to Syria. In late September 2000, a contract was signed between U.S.-based Ness Energy International and Lapidoth Israel Oil Prospectors Corp. to commence further work on the Har Sedom 1 well. Isramco (a private company which absorbed the Israel National Oil Co. when it was privatised in 1997), Delek, and Naphtha Israel Petroleum Corp. are partners in the Gevim 1 oil well being drilled near Sderot in the Negev desert. Isramco is optimistic that the Gevim field will yield significant amounts of oil. In 1996 oil was discovered near the Dead Sea town of Arad and is currently flowing at the rate of about 600 bbl/d. Several energy companies (Israel's Yam Thetis group, Isramco, BG -- formerly British Gas, and U.S.-based Samedan) have discovered significant amounts of natural gas off the coast of Israel and the Gaza Strip as well. Israel's petroleum commissioner has estimated that there are 3-5 trillion ft³ in proven reserves. BG has also signed a 25-year contract to explore for gas and set up a gas network in the Palestinian Authority.