

NAMIBIA

By Roger Murray

Production at most Namibian mines recorded an increase in 2003, including the main rough-diamond producers, Namdeb Diamond Corp (Namdeb) and De Beers Marine Namibia (DBMN), despite a fall in overall diamond production, while output of copper and zinc rose substantially. The Skorpion zinc mine and refinery was commissioned in during 2003, adding a new product (high grade zinc metal) to the range of mineral commodities exported by Namibia, although full output was not due to be achieved until the second half of 2004 or early 2005.

The main factor directly influencing the performance of the mining industry during 2003 and the wider Namibian economy was the sharp appreciation in the value of the South African rand (to which the Namibia dollar is linked at par) against most major currencies, especially the US dollar. The Namibia dollar appreciated by an average 39% against the US dollar in 2003, and as the prices of Namibia's most valuable mineral exports – diamonds, uranium, gold and copper – are priced in US dollars, this had an adverse impact on local currency earnings, depressing profitability (eliminating it entirely in the case of Rossing Uranium) and reducing the tax revenues paid by the industry to the government. The appreciation in the local currency effectively wiped out the benefit that would otherwise have been derived from appreciably higher rough diamond and metal prices during 2003.

The net result was that, once again, Namibian mining operators had to contain costs while making provision for plant and equipment maintenance and replacement, pursuing essential development and exploration programmes, and seeking to improve conditions of service and skills development for employees. The latter, together with initiatives in favour of black economic empowerment (BEE), and increased local processing of raw materials, have been adopted as priorities by the government in pursuit of national development strategies that aim to transform Namibia into an industrialised society under the 'Vision 2030' goal adopted at the turn of the 21st century.

Despite the difficult financial conditions during 2003, Namibian mining companies remained committed to ensuring the long-term sustainability of the industry through investment in new technologies, development and expansion programmes. Total capital spending by members of the Chamber of Mines of Namibia (CMN) totalled a record N\$2.3 billion (US\$304 million) in 2003, of which just over half was spent on the onshore and marine diamond sector. The CMN had a corporate membership of 63 at the end of 2003, comprising 30 full members and 33 associate members, up from 59 at the end of 2002. Its full members comprise all Namibia's main operating mining firms – the main exceptions being smaller mining and quarrying undertakings – together

with foreign and locally-owned exploration companies; its 33 associate members are mainly involved in upstream activities, or are suppliers of equipment and other services.

Namibia's real GDP grew by an estimated 3.1% in 2003, slightly below the 3.3% growth rate in 2002. Data published by the Bank of Namibia indicated that the mining sector had contracted by 7% compared to positive growth of just over 4% in 2002, with diamond mining recording an 11% production decline, in contrast to a growth of just over 4% in the preceding year. No detailed breakdown of sectoral contributions to GDP were available at the time of publication of this review but in 2002, mining contributed just over 13% of the total GDP of N\$30.1 billion (US\$2.9 billion) at current prices, diamonds alone accounting for 9.6%. In 2004, overall GDP growth is officially projected at just under 4%, based on modest diamond output growth of 4.4% and higher zinc production at Skorpion as it builds towards the design capacity output of 150,000 t/y.

In local currency terms, the total value of mineral and other exports fell by 16% to N\$9.5 billion in 2003, down from N\$11.3 billion in the preceding year. In US dollar terms, the value of exports rose by 18% to US\$1.3 billion (US\$1.1 billion). Similarly, whereas diamond exports fell by 30% in local currency terms to N\$3.9 billion in 2003, or 41% of total exports, in US dollar terms the decline was only 2%, to US\$516 million. Other mineral exports fell more sharply, by 33% in local currency terms to N\$1.4 billion and by 5% in US dollar terms to US\$185 million. The overall fall in mineral exports was 31% in local currency terms to N\$5.3 billion and by 4% in US dollar terms to US\$701 million. However, both exports of smelted copper and refined zinc are classified as manufactured exports, and if these are included, the overall value of mineral exports for 2003 is estimated at N\$6.1 billion (US\$806 million), compared with N\$7.7 billion (US\$732 million) in 2002, representing a 21% decline in local currency terms, but a 10% increase in US dollar terms.

The mining industry continued to be the largest source of corporate tax revenue to the government, although its contributions were substantially lower than in 2002 for the reasons cited above. Growth in tax revenues from the mining industry is likely to slow in the next few years due to the provisions for offsetting capital expenditure against tax liability as substantial expenditure has been committed to capacity expansion by Namdeb and some other operators, while new developments which involve significant value-adding (such as refineries and gem cutting and polishing plants) qualify for export processing zone (EPZ) status, under which zero income tax (but not royalties) is payable for the life of the project. Thus, the major proportion of earnings generated by Skorpion will not be subject to income tax, as the refinery, where the major proportion of profits will be earned, has EPZ status. The granting of EPZ status was a key incentive motivating the project developer, Anglo Base Metals, to locate the refinery on site at the mine rather than outside Namibia.

Having contributed a record N\$1.45 billion in tax (N\$1.0 billion) and royalty receipts (N\$450 million) in the 2002/03 fiscal year (March 31-April 1),

equivalent to 14% of total government revenue, diamond receipts slumped to only N\$770 million in 2003/04. For 2004/05 diamond receipts are forecast to decline even more sharply to only N\$552 million, reflecting the impact of reduced profitability by both Namdeb and DBMN due to the appreciated local currency, and extensive capital write offs in respect of onshore and offshore capacity expansions.

The fall in revenues from diamond mining since 2002 has provided a further impetus to the government's determination to secure a greater degree of diamond beneficiation. This will be achieved mainly through the expansion of local gem cutting and polishing plants, with a view to diversifying the economy and increasing the number of skilled jobs. The government has described the current arrangements, whereby all diamonds produced are exported as rough stones to the global market, as unfavourable as they provide Namibians with only a small share of the sector's potential value. The preferred model appears to be Canada, where the provincial government of the diamond-producing region requires producers to allocate a proportion of locally-mined stones to domestic cutting and polishing firms.

Given the global competition from low-cost cutting centres, a crucial factor in the commercial viability of a local cutting and polishing industry is judged to be the availability of sufficient quantities of rough goods at an affordable price. A briefing paper published in September 2003 on Namibia's diamond sector by the Windhoek-based Institute of Public Policy Research (IPPR), an independent body, analysed the potential for expanding the local cutting and polishing industry. As of 2003, this included seven factories employing some 350 persons, and all rough goods were obtained from either De Beers' Diamond Trading Co (DTC) or elsewhere on the global market rather than from local producers. Given De Beers' preference to retain exclusive access to all rough diamonds produced by companies in which it participates, such as Namdeb, for marketing to the global diamond industry via the DTC, the government has kept under review the option of enforcing a section of the Diamond Act of 1999. Section 58 of this Act provides the Minister of Mines and Energy with powers to ensure a regular supply of unpolished diamonds for local cutters by requiring any producer to make available suitable quantities and qualities up to 10% of the value of its output.

For these reasons, the declared intention of the Israeli diamond billionaire, Lev Leviev, to make Namibia a centre for integrated diamond-mining and gem-cutting operations, has had a strong appeal to the Namibian Government. Mr Leviev's commercial rivalry with De Beers, especially in Angola, has also gone down well as, despite the government's equal share in Namdeb, President Nujoma and many of his ministers still regard De Beers as essentially a South African-based company which exploited the country's diamond wealth inequally before independence. The government has, therefore, strongly encouraged Mr Leviev's ambitions towards Namibia. He made these clear during 2003 by founding Sakawe Mining Corp (Samicor), a subsidiary of the Leviev group's main mining arm, LL Mining Corp (LLM).

Samcor is to resume mining in the concessions of the liquidated offshore mining firm Namibian Minerals Corp (Namco) in which LLM had become the largest shareholder in 2001), and has begun construction of a large gem cutting and polishing plant in Windhoek. In early 2004 the Leviev group announced that all production by Samcor, expected to be some 150,000 ct/y initially, would be channelled to the new cutting factory, which would become the first such operation in Namibia to be directly supplied with rough goods mined in the country.

The N\$40 million (US\$5.3 million) factory, owned by LLD Diamonds Namibia, has a capacity to process 25,000-30,000 ct/mth, and once fully operational will employ 500 people. It was officially opened in June 2004 by President Nujoma. He made it clear that this would only be the first step in expanding local diamond processing. He said the factory's opening represented a dynamic shift in Namibia's diamond sector, adding that: "For more than a century our diamonds were mined and exported in raw form to other countries without adding value. This will not only enhance our national efforts to promote value-addition to our natural resources but also create employment opportunities and enhance the transfer of skills and appropriate technology to the country." For his part, Namibia's Prime Minister, Theo-Ben Gurirab, confirmed that the government wanted to do "what the Canadians are doing" and stated "we would revisit" the 10% clause of the Diamond Act 1999 as a way forward to ensure the new factory was sufficiently supplied with rough goods.

The new Minerals Policy drafted by the Ministry of Mines and Energy (MME), with the assistance of South Africa's Minerals and Energy Policy Centre (MEPC) and in consultation with the local industry, was approved in principle by the government in March 2003 and finally endorsed by parliament in November 2003. The MME is devising specific measures to give effect to the main policy provisions, most of which are not covered by the existing Minerals (Prospecting and Mining) Act of 1992 which mainly deals with mineral licencing and tenure issues. The policy commits the government to maintaining a conducive and enabling legislative and fiscal environment to attract private-sector investment in mining and exploration, and also provides guidelines for local black economic empowerment (BEE) initiatives, tighter environmental controls, value-adding of raw material resources and downstream processing. Unlike the new South African mining legislation, no specific empowerment targets are set out in the policy, such as a timetable for progressive localisation of ownership or minimum equity requirements for empowerment groups. However, more specific provisions are likely to be introduced as the policy is progressively implemented.

It was originally intended that the Mineral Policy provisions would be incorporated into a revised Minerals Act, for which final drafting was scheduled to have been completed in 2003. This did not take place due to a number of unforeseen problems, according to the CMN, although a draft amendment bill was finalised in early 2004. The CMN says special attention has been given to simplifying the language of the existing Act and the introduction of a "use it or lose it" principle in cases of unworked licence

areas. In an effort to avoid potential conflicts of interest between licence holders for different mineral groups within the same area, a new principle whereby only one licence may have validity over a particular geographic area has been introduced. In addition, the scope of the law is widened to include materials such as sand, clay and other quarrying operations, and the provisions relating to environmental protection and rehabilitation are enhanced in line with the Minerals Policy. Licence holders will henceforward be required to enter into an environmental contract with the government, and the requirements for licence holders to furnish impact assessments, management and closure plans have also been strengthened.

Rather than proceeding with an amendment bill, the Minister of Mines and Energy, Nicky Iyambo, has said that the government now intends to introduce a new Minerals Act, to be tabled in parliament during the latter part of 2004. The fundamental principles of the existing law, providing for security of tenure and protection of private investments in line with Namibia's constitution and the Foreign Investment Act of 1990, will remain the same, and the "user-friendliness" of the provisions have been improved.

In addition, Mr Iyambo said the government was preparing the way for implementation of BEE programmes in the mining sector, as laid out in the Minerals Policy, "to ensure that Namibians, and particularly the previously-disadvantaged members of our society, participate fully in the economic development of the mining sector". To this end, the MME's Directorate of Mines is drawing up a mining charter to facilitate the implementation of BEE in consultation with the CMN. As in South Africa, the introduction of a mining charter incorporating a formal commitment to BEE seems likely to be supported by the local industry; a growing number of partnerships between BEE undertakings and local and/or foreign companies have been formed in other sectors of the economy, especially the financial and fishing industry sectors.

Total employment by CMN members rose by 15% to 7,029 in 2003, up from 6,099 in the previous year, the highest number employed since 1998. The increase reflected the recruitment of full time staff for the Skorpion zinc mine and refinery, to a total workforce of just under 600, which more than offset the loss of jobs from the suspension of mining and subsequent liquidation of offshore diamond producer, Namco, in 2003. Although the accident rate rose slightly in 2003 to 51 reported accidents (47 in 2002), the rate per 1,000 employees was down to 7.26 (7.71). There was one fatality during the year, compared with five in 2002.

Diamonds

Production of mainly gem-quality rough diamonds in 2003 was only slightly down on the preceding year. The major producer, Namdeb Diamond Corp (Namdeb), the 50:50 joint venture between the government and De Beers SA, and De Beers Marine Namibia (De Beers 70% and Namdeb 30%) increased output (onshore and offshore) substantially, and this was almost sufficient to offset the loss of production caused by the suspension of marine mining operations by Namco at the end of 2002 and a six-month hiatus in

mining activities by Namibia's third offshore producer, Canada's Diamond Fields International (DFI).

Sakawe Mining Corp (Samicor), established by Israel's Leviev group during 2003, was scheduled to resume production on Namco's former concessions in May 2004, and DFI formed a joint venture with another Leviev group subsidiary early in 2004 to recommence mining on its Marshall Fork concession.

Namibia's total production in 2003 dipped by 4% to 1.48 Mct (1.55 Mct), but Namdeb recoveries rose by 14% to 1.45 Mct (1.27 Mct). If Namco's 2002 production of 236,000 ct is set aside, on a like-for-like basis, total recoveries in 2003 were 13% higher. Offshore recovery accounted for 46% of the total compared with 55% in 2002, the fall due almost entirely to Namco's non-production.

Namdeb's onshore production increased by 16% to 807,139 ct (696,914 ct) but beach and shallow water recoveries fell by 30% to 45,580 ct (65,932 ct in 2002). Namdeb continued its BEE initiatives through sub-contracting beach and shallow water operations to previously-disadvantaged small contractor groups. Offshore production in the deep waters of the Atlantic 1 concession by De Beers Marine Namibia (DBMN) exceeded 600,000 ct for the first time, with recoveries up by 17% to 602,037 ct (513,053 ct). The increase reflected the deployment of two additional mining vessels in the latter part of 2003: the leased mining ship *mv Ya Toivo*, equipped with the Nam II seabed crawler mining system (purchased from the liquidators of Namco for US\$20 million), and the *!Gariap*, which was re-equipped with a vertical drilling system after a successful conversion completed well ahead of schedule at a UK shipyard.

The two vessels have a combined capacity to recover 200,000-300,000 ct/y, and their first full year of operation during 2004 is expected to boost production by DBMN to around 800,000 ct. As a result, overall production by Namdeb is expected to increase to over 1.6 Mct in 2004. Together with resumed production on Namco's former concessions by Samicor, and expanded recoveries by DFI, this could lift Namibia's overall diamond output to some 1.8 Mct in 2004. During 2003, the remaining divisions (security services, materials management and information technology) of De Beers' South African subsidiary Debmarine, which formerly conducted offshore mining in the Atlantic 1 concession, were transferred to DBMN in Windhoek.

Namdeb had a difficult year financially in 2003, currency appreciation wiping out some 60% of the expected diamond revenue account. Five key areas have been identified to maintain profitability and the sustainability of mining operations. These comprise: expanded production from both land and sea resources; acceleration of projects with quick returns and raising of external finance for others; reduction of operating costs; elimination of diamond theft and diamond trafficking; and harnessing employee knowledge through an employee suggestion scheme with appropriate rewards. These aims will require extensive capital investment. The main new onshore developments

are a US\$53 million resource extension project at Elizabeth Bay mine near Luderitz, and a US\$11 million pocket beaches project.

Completion of the first, which involves upgrading the existing treatment plant to a wet processing system was scheduled for mid-2004; the system will enable the extraction of a substantial resource of cemented and clay-based material that was not previously treatable, thereby providing an initial increase in production and extending the mine's life by an estimated ten years to 2013. The existing plant could only handle dry gravel, and much of this has already been extracted. Since being commissioned in 1990 Elizabeth Bay has contributed some 8% of Namdeb's annual output, and the extension project should double production to just over 220,000 ct/y in the first three years. Carat production will then decrease, but is expected to remain 56% above the previous output level or around 170,000 ct/y for the remainder of the mine's lifespan. The effect would be to increase its contribution to Namdeb's onshore output to 35% for three years, falling to 16% subsequently.

The pocket beaches project involves mining a number of small bay deposits between prominent rocky headlands; Mining will be in stages with the possibility of two such areas coming into production during 2004. Ore will be processed on-site using modular mobile units with final sorting at Oranjemund.

Namdeb's capital spending in 2003 totalled N\$594 million (US\$79 million) and included N\$438 million on the above two projects, N\$32 million on sampling and prospecting, N\$93 million for research and development and N\$30 million on additional/replacement plant and equipment.

During 2003, Namdeb's wholly-owned diamond cutting and polishing subsidiary, NamGem Diamond Manufacturing Co, exported 30,000 polished stones from its Okahandja plant north of Windhoek. The company diversified its output by manufacturing fancy cuts but the adverse impact on its financial position caused by increased local costs and devalued stock due to the exchange rate appreciation, along with relatively flat prices for polished goods, led Namdeb to conduct a review of NamGem's operations. It was decided there was a need for financial restructuring and enhanced marketing and in January 2004 the US firm, Lazare Kaplan International (LKI), a De Beers shareholder, was appointed as technical and marketing partner for an initial two years, with Namdeb retaining ownership of NamGem. LKI was selected because of the strength of its global diamond marketing and distribution network, and the agreement provided for additional funding to install the latest technology and to introduce new skills into the operation.

The liquidation of Namco's former assets was completed during 2003, and Samicor was established by the Leviev group to exploit the offshore concessions previously held by Namco, and purchased for US\$3 million from Namco's liquidators. The concessions comprise 13 offshore mining licences and 23 exploration licences totalling 14,000 km², and estimated to contain a diamond resource of 1.2 Mct. Samicor intends to conduct a 30-month exploration programme to delineate additional reserves and support a

sustainable mining operation producing some 150,000 ct/y. Mining by Samicor commenced as scheduled in May 2004.

During 2003, Samicor assembled its new vessel fleet, purchasing the *Namibian Gem* (renamed *mv Sakawe Miner*) and re-chartering the *mv Kovambo*, equipped with the Namssol seabed crawler mining system purchased from the Namco liquidators. It also purchased advanced sampling equipment for the chartered *mv Sea Span* (renamed *mv Sakawe Explorer*), and purchased the *mv Nora Java* (renamed the *mv Sakawe Surveyor*), together with the requisite geophysical exploration equipment. At the end of the year, new airlift equipment was purchased for *mv Sakawe Miner*.

At a February 2004 briefing, Samicor's chief executive officer, Eli Nefussy, announced a US\$46 million three-year investment programme, including US\$7 million for acquisition of a third mining vessel in 2006, and US\$10 million for repairing and modifying its two existing mining vessels. Samicor also estimates it will spend some US\$2 million on survey and sampling operations over the period 2004/06. A 24% shareholding in Samicor has been allocated to local partners, including the Namibian Government (8%), a BEE group, Long Life Mining Corp (10%), the staff pension fund (4%) and the Namibia Youth Service (2%).

All rough production will be cut and polished locally by LLD Diamonds Namibia at a large new US\$5.3 million cutting and polishing factory under construction in Windhoek, making the Leviev group the first to both mine and process Namibian diamonds, and the only cutting and polishing plant to source its stones from local production. The LLD plant is the biggest and most advanced in Africa, with the capacity to process between 25,000-30,000 ct/mth. Once in full operation, the plant will also cut and polish stones from other Namibian producers. The plant's capacity is likely to be greater than the supply of rough stones mined by Samicor, at least initially, and the Namibian Government has accordingly indicated it may seek to enforce a clause in the Diamond Act of 1999 which would require other producers to offer up to 10% of their output for local cutting and polishing.

Recoveries by Canada's DFI from its Marshall Fork licence area offshore Luderitz fell to 16,762 ct in 2003, down from 25,401 ct in the previous year. Operations by its mining contractor, Gemfarm of South Africa, were suspended between April and September 2003 because the company sold its mining vessel *mv Anya* to a South African BEE firm, Lazig. Mining on Marshall Fork was resumed in October 2003 with Gemfarm as the vessel manager but at the end of the year DFI announced a further suspension of mining operations owing to the effect of local currency appreciation on its operating costs. The company was to investigate alternative production operations, and conduct further exploration and sampling to add value to the established 1 Mct resource at Marshall Fork.

In February 2004, DFI signed a 50:50 JV agreement with Samicor whereby diamond production revenues are to be divided equally between the two parties, with DFI's share of operational costs capped to a fixed US dollar

amount. Mining operations are to be carried out by Samicor's *mv Kovambo*, which is equipped with the Namssol seabed crawler mining system. The Namssol had previously been successfully deployed by Namco in its Luderitz Bay licence area adjoining Marshall Fork. DFI hopes the JV will optimise its high-grade concession by deploying technology specifically designed to operate in a similar geological environment. Mining was scheduled to recommence at the end of May 2004 and the initial period of the JV is six months, with DFI having the sole option to renew it on the same terms for a further six months.

Diamond production by a fourth operator, Diaz Point Exploration, which recovers diamonds as a Namdeb contractor from a small coastal area in the north of the *Sperrgebiet*, was lower in 2003 at 9,971 ct (12,683 ct). It has installed a 30 t/h DMS plant, together with a 60 t/h wet screen, and has also established a second prospecting unit in the Bogenfels area.

Recoveries by another small operator and Namdeb contractor, Sonnberg Diamante, from its 120 km Pomona concession on the *Sperrgebiet* coastline, have been hampered in recent years by inadequate equipment and lack of financing. Pomona has been worked intermittently since its discovery during Namibia's German colonial era in 1908, but recoveries are estimated at only some 2,000 ct/y in recent years. In 2001, Sonnberg became a subsidiary of a UK-registered company, Namibian Resources (NR), via a £1 million purchase from Namibian Bermuda, which had acquired Sonnberg in 1999. NR was specifically incorporated to purchase Sonnberg and to refinance the operation; in February 2004, it listed on London's Alternative Investment Market (AIM) with an initial £4.7 million capitalisation.

The proceeds of the AIM flotation were to be used for further exploration and the purchase of more new equipment. Production is forecast to rise to 7,000 ct in the first year and to over 10,000 ct/y subsequently. Identified reserves amount to 63,000 ct valued at some US\$6.5 million but a large part of the concession, containing an estimated 3.6 Mt of diamond-bearing gravels is under-explored. Namdeb contracted rights to Pomona, which falls within its Bogenfels mining licence, for a ten-year period from May 2002, with provision for a further ten years provided additional resources are identified. Under the current arrangements, Namdeb has agreed to purchase all diamonds produced by Sonnberg at 80% of the price it is paid for its sales of rough diamonds to the DTC.

Despite the very tight security maintained over diamond mining operations in Namibia and frequent 'sting' operations by the Namibia Police Protective Resources Unit (PRU) to intercept diamond traffickers, diamond theft, usually by employees, continues to be a problem for most operators. In January 2004, it was disclosed that two parcels containing 631 unpolished diamonds had been found concealed beneath the seat of a helicopter carrying ten employees on a regular crew change to three of DBMN's mining vessels. The discovery followed a random search conducted by Namdeb security and the PRU of hired helicopters used to transport staff. This was the second such incident within a period of two weeks. Four DBMN employees subsequently

appeared before the Oranjemund magistrate's court on charges of stealing the diamonds, valued at over N\$1 million (US\$130,000). The Namibia police had also requested the co-operation of the public in tracing three suspects believed to have stolen 18 containers of rough diamonds from Namdeb's Daberas mine at the end of 2003.

Junior exploration companies remain active. Afri-Can Marine Minerals Corp (Afri-Can), which is listed on Canada's TSX Venture Exchange, continued with its extensive offshore sampling programme during 2003, including further work on the promising 994 km² Block J located some 105 km north of Luderitz, one of six concessions held in partnership with local BEE concerns. During the past three years, Afri-Can has accumulated an extensive exploration portfolio, including 28 exclusive prospecting licences (EPLs) covering 26,500 km² (including Block J) comprising its shallow water and medium depth 'northern concessions', and deepwater 'southern concessions' (Namibian Gemstones), covering 23,000 km², with water depths from 168 m to over 500 m.

The company has also acquired a majority interest in an inland diamond concession near Gibeon in south-central Namibia, and has entered into an agreement to acquire a majority interest in the Haib copper deposit. Afri-Can planned to commence exploration in mid-2004 of four exclusive prospecting licences (EPLs) covering known kimberlite pipes northeast of Gibeon. In January this year, the company paid C\$72,000 for a 75% undivided interest to Deep South Mining Corp and South-End Mining Corp, both reportedly new BEE undertakings, combined with the issuing of 400,000 new shares. The EPLs cover a concession area of 4,000 km² on which 49 known kimberlite pipes occur.

Further encouraging discoveries of kimberlite indicator minerals, including diamond and pyrope garnets, were made by MTB Namibia from drilling and sampling work within the Kalahari formation at its Tsumkwe diamond project in northeast Namibia near the border with Botswana. Australia's Mount Burgess Mining holds 90% of the Tsumkwe project, and a local firm, Kimberlite Resource, holds the remaining 10%. The project covers some 5,000 km² held under five EPLs. MTB spent some N\$8 million (US\$1 million) on exploration during 2003.

During 2003 and early 2004, Reefion Mining NL of Australia, through its wholly-owned Namibian subsidiary Storm Diamond Mining Co (Pty) Ltd, continued evaluation work in respect of its Skeleton Coast diamond project, which covers 310 km of diamond-bearing modern and fossil beach deposits along Namibia's northern coast around Mowe Bay. Diamonds occur in at least four major palaeo-shorelines located above the present sea level, and the deposits contain well-defined continuous gravel zones with little or no overburden in many places. As of April 2004, Reefion had recovered 878 diamonds weighing 208 ct, the largest being 2.3 ct, of which 85% were high-quality gemstones, including several fancy yellow stones. A promising development was an increase in the average size of the most recent diamonds discovered to 0.3 ct. Of the total concession, 45 km or 13% has

been tested so far by trenching and sampling, with diamonds recovered at all the test sites.

During the first quarter of 2004 work was concentrated on the Westies site within the 28 km long Mowe Bay sector, where four trenches were excavated, including one on a newly-discovered beach, from which preliminary samples returned five diamonds weighing 0.95 ct. Excavation and sampling was specifically carried out on a gravel beach that had been partially excavated by prospectors during the 1950s, to characterise the nature of the diamond distribution and trap sites in this mineralised zone. During this period, 67 diamonds weighing 22.8 ct were recovered from flanking gravels where representative grades were up to 9.5 ct/100 m³ for a 45 m³ sample. Reefton said this confirmed that earlier prospecting targeted a narrow high-grade section only. In addition it was found that diamond distribution was well-defined and laterally continuous over a broader area than had been previously anticipated. A total of 51 diamonds weighing 12.7 ct were recovered along strike on the northern edge of the earlier excavations, with calculated grades of up to 0.22 ct/ m³ for an 8 m³ sample.

Gold and copper

Namibia's gold production in 2003 was down by 14% to 2,425 kg, owing to reduced output at Navachab, the country's sole primary gold producer, and less by-product gold recovered by Ongopolo Mining & Processing (OMP) at its Tsumeb smelter. Navachab production fell to 2,298 kg (2,650 kg), and Tsumeb recovered 127 kg (165 kg).

Production at Navachab is also projected to decline during 2004 due to a suspension of open-pit mining in the early part of the year, pending the installation of new mining equipment acquired by AngloGold following its decision during 2003 to reorganise operations on an owner-mining basis. As part of a re-investigation of the viability of the phased pit expansion project approved at the end of 2002, and taking into account the results of an extensive drilling programme and improved geological information, options regarding the continuation of the existing contract mining or a conversion to owner-mining were evaluated by AngloGold.

The original decision to employ a mining contractor, Karibib Mining & Contracting (KMC), when Navachab first came on stream in 1989, reflected the initial expectation that the mine's lifespan would be short. However, with the eastern pushback project expected to extend mine life from 2005 to at least 2013 (with a possible further extension to 2020), and more than triple the amount of gold produced, AngloGold has decided the best option is owner-operation. KMC was given notice with regard to the main mining operation but was retained to supply ore from existing stockpiles to the concentrator plant until mid-2004, pending the deployment by AngloGold of new mining equipment. The cost of new equipment and expanded facilities was an estimated US\$100 million, with open-pit mining due to resume in the second half of 2004, and a substantial production increase scheduled for 2005. Most of the workforce previously employed by KMC is being re-employed by Navachab, along with recruitment of an additional 120 workers.

The weaker US dollar had a strongly adverse impact on the profitability of Namibia's sole copper producer, OMP (formerly Tsumeb Corp), testing its production processes and cost structures to the limit. However, increased copper prices in the latter part of 2003 boosted revenue and profitability was expected to improve in 2004. Production of blister copper and by-product silver from the Tsumeb smelter increased substantially in 2003, augmented by external sources of concentrate feed, which more than offset a decline in supplies from OMP's own mines. OMP, which is owned by a consortium including the former Tsumeb Corp management and the Mineworkers Union of Namibia (MUN), remains Namibia's most diversified metals producer, although no longer the largest since the commissioning of the Skorpion zinc mine and refinery in the latter part of 2003.

Production of blister copper rose by almost half to 26,306 t (17,850 t), together with 18 t of silver (12 t), 127 kg of gold (165 kg) and 880 t of arsenic trioxide (880 t). It is planned to refurbish the whole smelter complex and, ultimately, recommence the treatment and refining of lead. In addition to concentrate feed from OMP's own mines, copper concentrates from the Democratic Republic of Congo (DRC), South Africa, Zambia and Zimbabwe were treated during 2003. The new Nam-Zam bridge across the Zambezi opened in May 2004, is expected to lower the cost and reduce delivery times for imported concentrate feed, the volumes of which are projected to expand significantly. Negotiations were also reported to be under way for joint mining ventures with Zambia and other central African states, involving the mining and processing of copper-bearing material, with, ultimately, the potential for construction of a custom refinery in Namibia. Refurbishment of the Tsumeb concentrator, which ceased operations when the mine was closed at the end of the 1990s, was completed during 2003.

At the Kombat mine near Tsumeb, concentrate production decreased to 16,701 t (23,836 t). Satisfactory progress was made with the Asis Far West exploration shaft, which had reached a depth of 412 m below surface by the end of 2003; the shaft system was 60% complete and was scheduled to be fully equipped and operational by the end of 2004. At the Otjihase mine near Windhoek, presently the main source of local feed for the smelter, copper concentrate production fell slightly to 35,511 t (39,125 t), but 31,786 t of pyrite concentrate was produced for export, a substantial increase on the 3,633 t produced in 2002. The possibility of using the product at the Rossing uranium mine if the cost of imported acid escalates further, remains under active consideration, provided re-establishing a local processing plant proves viable. An exploration drilling programme was completed at Otjihase during 2003, with production from this source due to commence in the early part of 2004. A small open-pit operation was also commissioned.

During 2003, the establishment of the new Tsumeb West mine, development of which had started the previous year, was completed as a replacement for the small Khusib Springs mine, where exploration is still continuing. An initial 12,657 t of copper concentrate were produced, and the mine has a conservatively-estimated 15-year lifespan. The first phase of mining at the new Tschudi mine near Tsumeb, using a pyrometallurgical ore treatment

process, was also completed during 2003. Although recovery rates were initially low, this was in line with expectations. Laboratory testing for the hydrometallurgical process to be subsequently introduced was completed by Chile's Indec Engineering and proved to be highly successful. Column testwork was begun during the latter part of 2003 to simulate the future heap-leaching process and was due for completion in mid-2004. Work on the Tsumeb germanium/zinc slag dumps recovery project also progressed, with a feasibility study on extraction of metals due to be completed by the end of 2004. In association with local entrepreneurs and a German firm, OMP is also investigating the potential for re-processing the old tailings dams around the Tsumeb and Kombat mines.

Prospects for the long-mooted development of the large low-grade porphyry copper-molybdenum deposit at Haib, 8 km north of the Orange River, received a boost in mid-2004 with the signing of a letter of intent between Canada's Afri-Can Marine Minerals Corp (Afri-Can) and a local BEE firm, Deep South Mining (DSM). The former will make an initial C\$600,000 cash payment to the latter for the option to acquire a 70% undivided interest in the 2,000 km² EPL over Haib.

DSM appears to have been allocated the rights to Haib after these had been reverted from the previous holder, Perth-based Rusina Mining, formerly Great Fitzroy Mines (GFM), which had completed a bankable feasibility study on Haib in 1997. This had confirmed the viability of an open-pit mine producing 115,000 t/y of cathode copper, but GFM and its project vehicle, Namibian Copper Joint Venture (NCJV), decided not to proceed with development because of the then low prevailing copper price. Rusina subsequently disputed the validity of a mid-2002 heads of agreement, proposing Haib's exploitation by in-heap bioleaching technology, between Haib Copper Co, a company owned by the deposit's original discover, George Swanson, Canada's BacTech Environmet Corp and South Africa's Mintek.

In September 2002, Rusina announced through a letter to the Australia Stock Exchange that it was in contact with the Namibian Government to assert its claim to valid title over Haib, and was hopeful that the negotiations would result in the benefits of the involvement of Bachtech/Mintek being developed by itself, free of what it described as invalid and speculative claims. The rights to Haib had been purchased by GFM from Mr Swanson for US\$1 million in 1995 with the consent of the Namibian Government. Rusina made no subsequent announcement of any progress with its claim, and it would appear that the Namibian Government decided that neither party should have any further involvement with Haib.

In May 2004, Afri-Can's president and chief executive, Pierre Léveillé, said the agreement with DSM demonstrated that the company's planned diversification of its holdings in Namibia was beginning to take form. He added that Haib was a major copper porphyry deposit whose value had been "significantly enhanced" by the current conditions and future outlook in the copper market. Of the initial C\$600,000 being paid by Afri-Can to acquire the option, C\$100,000 is payable on regulatory approval of the agreement by the

Canadian and Namibian authorities, and C\$500,000 on completion of a favourable due diligence within 120 days. To exercise its option, within two years of completion of due diligence Afri-Can must spend C\$2 million on exploration to prepare an updated bankable feasibility study, and after completion of a positive study issue within 30 days C\$5.5 million worth of its common shares to DSM, at a 10% market discount, along with 2 million warrants exercisable at a market premium of 30%, exercisable for a period of three years. A final cash payment of C\$5 million to DSM is payable on completion of project financing. DSM will have the option to sell its remaining 30% in consideration of a cash payment of C\$5 million and a 2% net smelter royalty.

Haib is estimated to have a minimum reserve of 374 Mt at 0.37% Cu and a maximum of 832 Mt at 0.27% Cu. Indicated resource estimates have ranged from 244 Mt at 0.37% Cu to 1,352 Mt at 0.23% Cu.

Zinc

The successful commissioning of the Skorpion zinc mine and refinery on the southeastern edge of the *Sperrgebiet*, near to the existing Rosh Pinah lead/zinc, mine was the major event in 2003. At full capacity Skorpion will produce 150,000 t/y of high-grade zinc metal, substantially boosting and diversifying Namibia's mineral export earnings. The mine is owned and operated by the Anglo Base Metals (ABM) division of Anglo American Corp, with two separate subsidiaries for the mining and refining operation. The refinery (but not the mine) has export-processing zone (EPZ) status, which means that profits from operations incur no corporate tax for the duration of the project (estimated at a minimum of 15 years). Mine output is to be sold on an arms-length basis to the refinery for processing into metal. During 2003, a further N\$667 million (US\$88 million) was spent on capital works, bringing the final project cost to N\$3,570 million (US\$472 million), only slightly above the US\$454 million target.

The first zinc metal was produced in May 2003, and the phased ramp-up programme to design capacity proceeded smoothly until mid-year when the mine plant suffered a series of equipment failures, including pumps, pipes and valves, which necessitated the introduction of a revised ramp-up schedule. The failures were attributable to some sub-standard components, along with inferior construction materials and poor quality of construction work, while mechanical damage was also incurred during the installation and commissioning phases. A major project to replace critical components had to be implemented and by the end of 2003 the project had achieved 75% of design capacity. However, the duration of the revised ramp-up programme has had to be extended beyond the initial target of March 2004. Despite the replacement of all the defective components, as of April 2003 Skorpion was producing at about 80% of its design capacity. In 2003, Skorpion produced 47,436 t of special high-grade zinc, all exported to the global market through Luderitz harbour.

At Rosh Pinah, mine output increased by almost 44% during 2003. However, this resulted in a transport bottleneck developing despite a 24% increase in

dispatch levels. Options are being investigated to solve this problem. Rosh Pinah is owned and operated by Rosh Pinah Zinc Corp, a JV between South Kumba Resources of South Africa and the local firm PE Minerals which, under an agreement in the mid-1990s, contributed the mineral rights to the undertaking in return for a guaranteed royalty payment.

Zinc concentrate output rose by 39% to 107,920 t (77,587 t) at an average grade of just over 54% Zn. Contained zinc metal output rose by 42% to 58,352 t (41,012 t), with shipments mainly to Kumba's Springs refinery in South Africa's Gauteng Province. The zinc concentrate also contained 1.99% Pb and 75.3 g/t Ag, equivalent to 2,137 t of lead and 8 t of silver. Lead concentrate production rose by 30% to 31,453 t (24,140 t) averaging just under 53% Pb, and contained metal was up by 41% to 16,635 t (11,809 t). The lead concentrate also contained 6.8% Zn and 599 g/t Ag, equivalent to 2,148 t of zinc and 19 t of silver.

Production at Rosh Pinah is now outpacing the rate of reserves replenishment, and both prospecting and drilling programmes were intensified at a cost of N\$9 million during the year. Kumba also intensified its exploration programme to delineate additional reserves on several of its 16 EPLs in the vicinity. Also, N\$12 million was spent on one underground fleet replacement unit and a further N\$5 million on plant upgrading.

Uranium

Despite a strong improvement in uranium prices on the spot market during 2003, the financial position of Rossing Uranium Ltd came under renewed pressure, due to the adverse exchange rate and the temporary closure of the main plant at the start of the year. The stronger Namibia dollar reduced uranium sales by 14% in local currency terms, and this factor, together with higher unit costs and higher charges for imported acid, electricity and water supplies, resulted in a financial loss in 2003. As a consequence, the board of directors adopted the existing phase one, life-of-mine plan under which it will cease operating in 2007. However, if the situation improves significantly, Rossing will proceed with its phase two life-of-mine plan, which would extend operations until 2017. A decision was expected in the latter part of 2004.

According to Rio Tinto plc, Rossing's largest shareholder with a 69% equity interest, Rossing's sales fell by almost a quarter to US\$86 million in 2003, and incurred a total net loss of US\$41 million compared with a net profit of US\$49 million in 2002. Because Rossing's sales are made under long-term contracts, negotiated when the uranium market was weaker, prices received do not reflect recent increases in the spot market price. However, new contracts obtained by Rossing (as negotiated by Rio Tinto's UK-based Mineral Services) in coming years would be based on higher prices, and the company – subject to a decision to extend the mine's operation – should be well-positioned to take advantage of the projected shortage of uranium during the latter part of the current decade.

Rossing has operated at only two-thirds of its 4,500 t/y design capacity in recent years and would be able to raise output accordingly, according to

Rossing's managing director, David Salisbury. Current customers include power utilities in Japan, South Korea, Sweden and the US, and conversion of the uranium oxide is conducted by converters in Canada, France and the US.

In 2003, 18.8 Mt of material were extracted from the open pit (21.8 Mt) of which 8.3 Mt (8.8 Mt) was ore. The amount of ore processed was some 1 Mt below target and the amount of waste rock was 0.6 Mt above target. Production of uranium oxide was lower, at 2,401 t (2,751 t) as a result of a three-month shutdown in the first quarter when a new overland, dewatered sand conveyor was installed. Uranium output increased during the latter part of 2003 and fourth quarter production of 548 t was almost two-thirds higher than during the same quarter of the preceding year. The installation of the conveyor was a significant technical improvement designed to reduce costs as it provides for the more reliable and less expensive transport of tailings. Capital spending totalled N\$35 million (US\$5 million) during 2003, of which N\$21 million was for the conveyor and N\$13 million for vehicle and other equipment replacements. In view of the escalating price of imported sulphuric acid, consideration may be given to restarting the on-site acid plant mothballed during the 1990s; the resumption of pyrite production by the Otjihase mine would provide an available local source of raw material.

A rationalisation of the labour force was introduced in October 2003 to reduce costs, and affected employees were to be absorbed into other areas to avoid retrenchments and maintain job security. The entire open-pit shift panel was integrated into the mainstream workforce, no longer receiving shift allowances. In addition, all weekend and overtime work was rescheduled to weekdays, and hiring of contract labour to assist with certain functions was suspended, as was all contractor work not contributing directly to production. The 2004 operating plan provides for a reduction of the seven-day week to a five-day week in the mining area, with no salary increases to be paid. In 2003, the total number of employees was 817 (771), of whom 96% were Namibians.

If the life-of-mine extension option is adopted, a key element will be expanding the current open pit to access additional reserves, along with upgrading the crushing plant, replacing the solid/liquid separation equipment with horizontal belt filters, and expanding the mining vehicle fleet. Should the mine continue in operation, the total value of additional uranium production is projected at US\$650 million, with about US\$305 million going on wages, taxes, rents and interest, as well as profits distributed to shareholders. Employment would be expected to be around 930 jobs annually.

Higher uranium prices have improved the prospects of developing a second uranium mine at Langer Heinrich, located some 80 km to the south of Swakopmund and southeast of Rossing. The Langer Heinrich deposit is smaller but of higher grade than Rossing, and is located in calcrete, rather than alaskite, as is the case with the latter. The project owner, Australia's Paladin Resources Ltd, commenced a nine-month bankable feasibility study in April 2004, and anticipates a construction start-up early in 2005 and the first production in 2006. Paladin says a major international uranium trading firm agreed in 2003 to purchase a significant proportion of production.

Paladin acquired Langer Heinrich Uranium Ltd, the company owning the mineral rights to the deposit, from another Australian firm for an undisclosed cash payment in 2002. The results of a pre-feasibility study announced in February 2003 indicated that Langer Heinrich contains a geological resource of 50 Mt averaging 0.06% U_3O_8 , and a mineable resource of 10.1 Mt at 0.11%, containing 11,200 t of recoverable uranium, using a 344 ppm cut-off grade. This forms the basis of the project prefeasibility assessment and financial modelling. The bankable feasibility study will concentrate on confirming the viability of an operation producing some 1,000 t or 2.2 Mlb/y of U_3O_8 for a minimum of ten years.

The study is being carried out at a cost of US\$2.5 million with Perth-based GRD Minproc as the project engineer, and completion is expected in January 2005. Funding is through an A\$2 million loan from Societe Generale in Australia, and in February 2004 Paladin raised US\$500,000 through a share placement by Denver-based Resource Capital Funds (RCF). In early 2004, in response to strong interest by European investors, Paladin's shares were listed on four German stock exchanges, Berlin-Bremen, Frankfurt, Munich and Stuttgart.

Other minerals

A number of other minerals continued to be produced during 2003, of which the most important were fluor spar, salt, dimension stone (marble and granite) and a range of semi-precious stones, including tourmaline, rose quartz, amethyst and blue-lace agate. Most of the companies producing dimension stone and semi-precious stones are small, locally-owned open-pit and/or quarrying operations situated mainly in central and west-central districts. As they are not members of the Chamber of Mines of Namibia (CMN) recent output data are not available. Annual production of marble and granite, including white, black and coloured varieties, has averaged some 10-15,000 t in recent years, with Italy as the main export market.

Tourmaline is the most valuable semi-precious stone found in Namibia and is normally produced in the largest quantities, including recoveries by small-scale artisanal miners, from various deposits in the vicinity of Karibib and Usakos. Plans announced several years ago for the establishment of a semi-precious stone cutting and polishing plant in Windhoek by foreign investors, mainly to process tourmaline, have not come to fruition, in part because access to the large Neu Schwaben deposit was impeded by a protracted dispute with an established community of artisanal miners.

An ongoing expansion programme by Belgium's Solvay at its Okorusu fluor spar mine, some 50 km north of Otjiwarongo (between Okahandja and Tsumeb), encountered a setback during 2003 due to technical problems and an unresolved access dispute with a landowner in respect of the largest orebody. Production of acid-grade fluor spar (acid spar) by Okorusu Fluor spar was slightly lower in 2003 at 79,349 t (81,084 t), and exports to Italy and Germany decreased to 76,987 t (90,216 t). Difficulties were experienced in achieving production targets owing to limonitic contamination of ore from the mine's A pit; however, research and development work both locally and in

Germany produced a solution to the separation problem at the end of 2003 and production in the final two months of that year was reported to have improved to an average 2,000 t/mth of acidspar. In consequence, Okorusu raised its 2004 production target by 25% to some 100,000 t. A life-of-mine plan, utilising the information and ore reserves derived from an orebody definition exploration programme on the A and C deposits, was also completed during 2003.

However, a definitive resolution of the dispute over access to the B orebody had yet to be achieved as at the end of 2003, placing Okorusu's future operations in jeopardy as B is the largest deposit and will be required for mining within the coming years. Pending a resolution of this dispute, mining has had to be restricted to the small B zone owned by Okorusu itself. Although the larger adjacent area is within the company's mining licence, unimpeded access has been delayed pending agreement on the amount of compensation to be paid to the landowner. The Mineral Ancillary Rights Commission (MARC) assisted the company in obtaining an interim agreement to access the area during the latter part of 2003. During the year Okorusu spent some N\$7 million on equipment replacement and renewals, and N\$2 million on exploration, including further evaluation of the Omburu deposit near Omaruru. The preliminary indications are that ore reserves are insufficient to support a viable operation.

By volume, salt is Namibia's largest bulk mineral commodity and the country continues to maintain its position as the largest producer in sub-Saharan Africa. Both output and sales increased in 2003. There are two main producers and they operate coastal brine pans at the country's main harbour of Walvis Bay, and near Swakopmund to the north. Production of coarse salt was 8% higher at 614,100 t in 2003, of which 567,000 t was produced by Walvis Bay Salt Refiners, up 3% on 2002. Sales to its main customer, the South African chemical industry, remained constant as did bagged salt exports to West Africa, although a shortage of available bulk cargo vessels during the year meant that sales to West Africa and the Arabian Gulf were lower than forecast.

Most remaining output was by Swakopmund-based Salt Co, the only company also producing fine grades of salt. Output rose by 55% to 84,818 t in 2003, reflecting strong demand in Angola, Democratic Republic of Congo (DRC) and Zambia. Production of rock salt more than doubled to 11,421 t (5,631 t), most of which was exported to Botswana, Lesotho and South Africa. Of the 11,099 t of fine salt produced (9,640 t in 2002), 58% was exported, with South Africa and Zambia being the main customers. Most of the 9,188 t of table salt produced in 2003 (none in 2002) was for the domestic market, but just over 12% was exported to Angola, South Africa and Zambia.

The new Nam-Zam road bridge across the Zambezi between Namibia and Zambia is expected to open up further export markets for Namibian salt in central and southern Africa. A third company, Cape Cross Salt, which operates to the north of Swakopmund, also increased production and sales in 2003. Output included 13,308 t (7,323 t) of coarse salt and 1,080 t (836 t) of

rock salt. During 2003 the company secured financing from the African Development Fund (ADF) for road transport and the construction of additional on-site facilities.

Exploration

Exploration spending by CMN members reached a record N\$264 million (US\$35 million) in 2003, almost 80% higher than in the preceding year. In US dollar terms the growth in exploration spending was even more impressive as due to the sharp appreciation in the South African rand/Namibia dollar during 2003. Offshore diamond exploration accounted for 81% of total spending and over half of all onshore expenditure took place in southern Namibia, mainly for zinc and other base metals in the *Sperrgebiet*, the restricted diamond area which the government opened-up to non-diamond prospecting three years ago. The concentration of resources on offshore diamond exploration, inclusive of equipment costs and trial sampling operations, reflected the awareness that Namibia's future diamond production will be increasingly dependant on marine operations and the development of suitable technologies to realise these resources.

The principal diamond exploration activities during 2003 have already been outlined; elsewhere, the main exploration programmes included further evaluation by Ambase Exploration of the northern extension of its *Sperrgebiet* EPL area, in the search for additional zinc oxide reserves on which it spent N\$10 million during 2003. Ambase is part of Anglo American's Anglo Base Metals division, which operates Skorpion, close to the southeastern edge of the *Sperrgebiet*. Additionally, BHP Billiton and Teck Cominco concluded a joint venture agreement over three *Sperrgebiet* EPLs. Teck spent some N\$5 million on exploration drilling; BHP Billiton worked mainly through Rio Algom Exploration Inc and plans to conduct a drilling programme on its other licence areas, further inland near Karasburg, during 2004.

Avdale Namibia, a subsidiary of South Africa's Anglovaal Mining, commenced a pre-feasibility study on its Otjikoto gold prospect some 50 km south of Otavi in the northeast, which it had discovered in 2001. Avdale spent N\$9 million on the project during 2003, with the pre-feasibility study scheduled for completion in the third quarter of 2004. During 2003, Westport Resources continued to hold an EPL under option to Teck Cominco in the *Sperrgebiet*, with exploration results sufficiently encouraging to warrant additional drilling. Accordingly, Westport planned to commence its own exploration drilling programme in the latter half of 2004.

The number of mineral exploration licences applied for and granted by the Mining Commissioner's office remained stable in 2003, with almost no change in the number of EPLs awarded compared with the previous year, but a slight increase in the issue of non-exclusive prospective licences. However, these levels remained well below the record number of EPLs and non-EPLs awarded and issued in 2001 when a major stimulus was provided by the opening up of the *Sperrgebiet* to non-diamond exploration for the first time. In addition, twelve new mining licences were granted in 2003 (nine in 2002), along with seven Exclusive Reconnaissance Licences, the same number as

in the previous year. Although there were 119 applications pending (new and renewals) at the end of 2003 compared with none a year earlier, the CMN stated that 80% had in fact been processed but were awaiting responses by applicants to notices of preparedness to grant issued by the Mines and Energy Ministry (MME).

	2002	2003
Non – exclusive prospecting licences issued	379	363
Exclusive prospecting licences awarded	70	71
Claims registered	231	243

The local mining industry remains concerned at the continuing uncertainties caused by access/rights disputes between landowners and mining/exploration firms, which tend to become protracted because of the many decisions by the Minerals Ancillary Rights Commission (MARC), which has powers to set compensation levels, being referred on appeal to court. During 2003 the existing MARC was disbanded and a new commission was appointed, and it was anticipated that reinforced provisions in the new Minerals Act due to be promulgated during 2004 will assist in expediting the resolution of such disputes.

The CMN's standing committee on prospecting and the environment, which includes representatives of the Namibia Geological Survey (NGS) and the Office of the Mining Commissioner, continued to focus on issues relating to proposed new environmental legislation during 2003. The committee had been appointed by the Ministry of Environment and Tourism as consultants to compile standard guidelines for environmental impact assessments in 2002. But although draft guidelines have been completed, they had not as of the end of 2003 been made available officially for general use. The committee also reviewed a draft Parks and Wildlife Bill, and its recommendations included a request for the mining industry to be represented on the proposed Nature Conservation Council (NCC). With regard to provisions of the draft bill relating to the declaration of protected areas, the committee proposed the establishment of a standing committee on the designation of these, including representatives of the mining industry, and reporting to the NCC.

This proposal was viewed by the CMN as dovetailing with the ongoing contributions made by its exploration members to the finalisation of a Land Use Plan for the *Sperrgebiet*, drawn up under the auspices of the Ministry of Environment and Tourism. As mining has only been conducted in a small part of the 26,000 km² area, concentrated along the coast of the southwestern Namib desert, and because there are no permanent settlements apart from the diamond-mining town of Oranjemund, most of the *Sperrgebiet* has remained a pristine wilderness and its proclamation as a national park is seen as the best way on ensuring the region's biodiversity can be maintained.

The former Diamond Area No 2, north of Luderitz, was reclassified as the Namib Naukluft Park in the 1980s, and in April 2004 the government formally designated the *Sperrgebiet* as a new national park, under a name yet to be decided. It is expected that, in line with the recommendations of an independent environmental study, the *Sperrgebiet* will be divided into a

number of separate zones, each with specific management regimes, with mining subject to strict environmental controls.

Table 1 Diamond production ('000 ct)

	2001	2002	% change
Namdeb	1,276	1,455	14.0
of which:			
Onshore ^a	697	807	15.8
Offshore ^b	513	602	17.3
Beach & marine contractors	66	46	-30.3
Other offshore producers ^c	274	27	-90.1
Total	1,550	1,482	-4.4
of which:			
Offshore recoveries	853	675	-20.9
% recovered offshore	55	45.5	---

a Includes Mining Area No.1, Daberas and Elizabeth Bay, all within Diamond Area 1, the *Sperrgebiet* (prohibited area). b Recoveries from the Atlantic 1 deep-water concession mined by De Beers Marine Namibia (DBMN). c Mainly Namibian Minerals Corp (Namco) in 2002.

Source: Chamber of Mines of Namibia, 2003 Annual Report; De Beers SA, Annual Review 2003.

Table 2 following page

Table 2 Namibian Mineral Production (t, except where stated)

	2002	2003
Diamonds ('000 ct)	1,550	1,482
of which marine	853	675
Uranium oxide	2,751	2,401
Gold (dore/blister) (kg)	2,815	2,425
Silver	36	45
Copper (blister 99% Cu)	17,850	26,306
Zinc refined (99.9% Zn)	35	47,436
Zinc (conc. 52% Zn)	77,587	107,920
(contained metal)	42,685	60,500
Lead (conc. 30% Pb)	24,140	31,453
(contained metal)	13,190	18,782
Pyrite (conc. 50% S)	3,633	31,786
Arsenic trioxide (75% As)	880	389
Fluorspar (97% conc)	81,084	79,349
Salt (coarse)	614,052	665,126
(rock)	5,631	11,421
(refined)	9,640	20,287
Value (N\$ million)^a	2002	2003
Diamonds ^a	5,205	3,865
Gold ^d	240	190
Copper ^b	262	310
Zinc ^d	140	480
Uranium ^c	1,180	650
Total (incl other)^a	7,714	6,095
Value (US\$ million)^e	732	806

a Export sales; total figure, and diamonds, is as reported by the Bank of Namibia for mineral exports, but with addition in 2003 of estimated value of refined zinc which it classifies as a manufactured product. b Copper is as reported in a fuller export breakdown provided by the Central Bureau of Statistics for 2002 and extrapolated for 2003. c Uranium represents gross sales as reported by Rio Tinto. d Other values are estimates. e Based on annual average N\$:US\$ exchange rate.

Source: Bank of Namibia; Chamber of Mines of Namibia; De Beers SA; Namdeb Diamond Corp (Namdeb); Rio Tinto plc; Rossing Uranium Ltd.