

## EGYPT

*By Gavin Bowyer*

**P**resident Mubarak was re-elected in 1999 for his fourth term of six years. The ruling National Democratic Party (the NDP) has control of the 454-seat house with the support of 213 of the independent members. The opposition includes a 17-strong Muslim Brotherhood faction. So, with its reliance on the support of independent members of parliament and a more vocal opposition, the government has to be more responsive to other points of view. The next presidential election is due in October 2005 and the next parliamentary elections will be held at the same time.

In 2003, Egypt's real GDP growth rate is estimated to have risen slightly to 1.8%, from 1.6% in 2002. It is expected to rise to 2.8% in 2004.

### **Oil and Gas**

The production of crude oil continued to fall, to an average of about 620,000 bbl/d in 2003, down slightly from 632,000 bbl/d in 2002 and 750,000 bbl/d in 2001. Two-thirds of the crude production is refined domestically. Almost 80% of production comes from the long-established oilfields of the Gulf of Suez, with exploration concentrated on fields in the Western Desert and the Red Sea Coast south towards Sudan. Crude oil reserves were reported in September 2001 as some 3.75 billion barrels but it is considered that if advanced extraction techniques are employed a further 10 billion barrels could be recoverable.

A concession was awarded in August 2002 to Dover Petroleum of Canada for the East Wadi Araba area in the Gulf of Suez. Dover announced in January 2003 that its initial well had shown oil, though assessment of the well is still under way. In May 2003, a larger new find, Saqqara, was announced by BP. The field could reach a production level of 40,000-50,000 bbl/d. This represents the largest new crude oil discovery in Egypt for some 15 years.

The most exciting planned developments are in the exploitation of natural gas. Natural gas resources and reserves were estimated in mid-1999 at 1,100- 1,700 billion m<sup>3</sup>.

In June 2001, Egypt signed a 30-year agreement to supply Jordan with 1.1 billion m<sup>3</sup>/y of gas from 2003, rising to 2 billion m<sup>3</sup>/y by 2008. The pipeline was under construction, and set for completion in late 2003. Egypt is building the section from the existing pipeline terminus at El-Arish to Aqaba in Jordan, with a subsea section in the Gulf of Aqaba bypassing Israeli waters. From Jordan, pipelines could be extended to supply Syria and Lebanon, and even ultimately Turkey and Europe. This scheme appears to replace, or at least provide an alternative to, the previous plan to lay an 800 km pipeline, of which the first 400 km would be under the sea, to transport natural gas from Egypt to Lebanon and Syria, with possible extensions to Jordan and Turkey.

In January 2002, the Egyptian LNG Co, a JV between BG Group (UK), Edison (Italy) and the Egyptian Natural Gas Co, signed a provisional agreement with Gaz de France to supply it with 3.6 Mt/y of gas. In November 2000, the Spanish Egyptian Gas Co (Segas) was formed to establish a liquified natural gas plant at Damietta. The plant was scheduled to begin production in 2004, and to supply 4 billion m<sup>3</sup>/y of natural gas to new power stations in Spain.

### Gold

Centamin Egypt Ltd, formerly Centamin NL, through its wholly-owned subsidiary Pharaoh Gold Mines NL, holds three gold concession areas, Sukari, Barramiya and Abu Marawat/Hamama in the Eastern Desert. It has concentrated its exploration and evaluation activities on its Sukari gold project in the Eastern Desert, near Marsa Alam on the Red Sea coast. In its 2002 annual report, Centamin reported mining reserves at Sukari (above a cut-off grade of 1.0 Au g/t) of 5.06 Mt of proven reserves at 2.07 g/t Au and probable reserves of 4.83 Mt at 2.07 g/t Au.

The company has completed a bankable feasibility study based on a 2 Mt/y production. Engineering studies are continuing to upgrade and refine the feasibility study. Centamin has an agreement with the Egyptian Geological Survey and Mining Authority, (EGSMA) which, if mining goes ahead, allows for a 30-year mining lease, renewable for a further 30 years, with a 15-year tax holiday and a 3% royalty payable on net proceeds.

However, in 2003, there was a hiatus of activities in Egypt because of a refusal to authorise the renewal of security permits for staff and contractors to work on site. EGSMA and the Ministry of Industry had alleged that the company continued to operate at Sukari illegally pending renewal of the permits. In March 2004, the company reported that the Egyptian Attorney General had concluded an investigation and had affirmed that the company had acted legally. These findings would be submitted as part of the continuing arbitration process with EGSMA.

In March 2003, prior to the interruption, the company had raised A\$22 million in options.

### Other Minerals

In October 2001, Gippsland of Australia signed a US\$40 million 30-year agreement with the EGSMA to form a JV company, Tantalum Egypt, to exploit tantalite deposits at Abu Dabbab in the Eastern Desert. In 2002, the company undertook a bankable feasibility study, which showed that Abu Dabbab has the capacity to produce tantalum pentoxide (Ta<sub>2</sub>O<sub>5</sub>), niobium pentoxide (Nb<sub>2</sub>O<sub>5</sub>) and tin, as well as some 500,000 t/y of by-product high-grade feldspar.

The study was carried out by the Australian engineering group Lycopodium Pty Ltd, and is based on an initial throughput of 1 Mt/y, (with expansion to 2 Mt/y), to produce 420,000 lb/y Ta<sub>2</sub>O<sub>5</sub> (with expansion to 840,000 lb/y). The initial stage of the study focused on the metallurgy of the resource in order to

establish the most appropriate process flowsheet to maximise the yields of the metallic products  $Ta_2O_5$ ,  $Nb_2O_5$  and tin. The majority of the  $Ta_2O_5$  will be extracted by use of enhanced gravity separation techniques, and the balance would be recovered during the tin smelting process. This would yield metallic tin plus  $Ta_2O_5$  in the form of a glass, which will ensure that the optimum  $Ta_2O_5$  recovery would be achieved. As yet, no offtake agreements have been reported, but it is understood that the company has been approached by a number of interested parties in the Italian ceramics industry for the feldspar.

In the second half of 2003, Lycopodium was carrying out pilot plant testwork, in Western Australia, on a 40 t bulk sample from Abu Dabbab.

In October 2003, Tantalum Egypt was granted an exploration licence of 16 km<sup>2</sup> over the Nuweibi deposit, which is connected to Abu Dabbab by a 25 km hard desert track. The deposit had been investigated in the 1970s by a joint Egyptian and Soviet Russian team. It is estimated to contain indicated resources of some 48 Mt averaging 147 g/t  $Ta_2O_5$  at a cut-off grade of 100 g/t, plus some 51 Mt of inferred resources.

### **Ilmenite**

In the Nile Delta, to the east of Alexandria, Centamin Egypt Ltd and Kara Gold NL each owns 50% of Egyptian Pharaoh Investment (EPI). This is an Egyptian company that has an agreement with the Egyptian Government to develop a heavy minerals project at Rosetta. The government estimated the area to contain resources of some 37 Mt of heavy minerals. Under the agreement, EPI and the government will share the profits from the mining and separation of the heavy minerals, after EPI recovers all of its development costs. EPI then plans to upgrade the ilmenite to pigment-grade titanium oxide.

### **Iron Ore**

Iron ore is mined near the Baharia oasis in the Western Desert, and the Lakah Group, with Hysla of Mexico, are reported to be considering constructing a sponge iron plant in the New East Port Said industrial zone.

### **Coal**

Coal resources in Sinai are estimated at some 50 Mt. To exploit some of these resources, the Maghara mine was re-opened in 1996 at a production rate of 125,000 t/y of coal, which was targeted to rise to 600,000 t/y in five years. However, it is doubtful as to whether this expansion is economically viable and in mid-2002 it was reported that the mine's debts were approaching the limit of its loan facilities.

### **Phosphate**

The Abu Tatur phosphate mine, northwest of El Kharga, was planned to produce 4.5 Mt/y at 31%  $P_2O_5$ , yielding 2.2 Mt/y of concentrate. An associated chemical fertiliser plant was planned. Reportedly, some US\$1.5 billion has been spent on developing the mine and possibly twice as much again on infrastructure. However, the project has been beset by cost and management

problems. Elsewhere, phosphate and limestone are mined near Bur Safaga and Quseir on the Red Sea Coast.

Egypt also has deposits of manganese, potash, sulphur and uranium.