SUDAN

By Neil Scott

Few would disagree that Sudan lacks considerable mineral exploration and production potential. Although this potential has been stunted over the past decade by self-imposed political isolation and a much longer-running civil war, it is showing signs of fruition - at least as far as the oil and gas sector is concerned. In fact, the revenue provided by oil and gas may have been partly instrumental in the government adopting a more conciliatory stance to the outside world.

Of course, the conflict in the south of the country continues - directly affecting oil production - and few would be rash enough to predict its early settlement, particularly in view of continued reports of the government's scorched earth policy toward inhabitants of the oil exploration areas. But there are some promising signs. The US Government has helped in getting UN sanctions lifted and has persuaded Congress not to proceed with a proposed Sudan Peace Act. This would have provided substantial support to Sudan's Christian opposition groups and penalised companies seeking US funding for operating in the country. The reason for this volte face was the Sudanese Government's collaboration with US authorities in providing information following the September 2001 suicide attacks in New York and Washington: an ironical development, in view of the Pentagon's long-held belief that Sudan was itself a perpetrator of international terrorism.

The impact of oil and gas production on the Sudanese economy can be measured in dramatically increased export earnings and the spawning of associated industries, such as a new gas-fired power station north of Khartoum. Oil output reached an average of 185,000 bbl/d in 2000, and was predicted by the Economist Intelligence Unit to reach 230,000 bbl/d in 2001. Most of this production comes from the Helig and Unity fields operated by the Greater Nile Petroleum Operating Co. (GNOC), a consortium between the Sudanese Government, Petronas (Malaysia), China National Petroleum Corp., Sudapet and Arakis of Canada. GNOC's exploration efforts have increased oil reserves from 417 Mbbl in 1997 to 800 Mbbl in early 2001 - although many in GNOC are reported to believe that the final figure could exceed three billion barrels. This potential is attracting other overseas companies including International Petroleum Co. (IPC) of Canada, which has signed an exploration and production-sharing agreement for the Thar Jath field, and Lundin Oil, a subsidiary of IPC. The French firm TotalFinaElf is rumoured to be in negotiation with the government, as are several Arab, Russian and East European firms.

The Ariab gold mine is Sudan's principal metal producer. Owned 40% by Cominor (formed by BRGM to manage its African mining assets) and 60% by the government, Ariab Mining Co. had resources of 5 Mt at 8.1 g/t gold in June 1998. With production by open-pit mining from the supergene zones of four closely located massive sulphide deposits, this is clearly a very interesting deposit. Its heap leach plant capacity is 600,000 t/y of ore.

Apart from cement raw materials (limestone, clay and gypsum), the only other significant mineral production is of chromite, which is worked using labour-intensive methods from three small-scale mines in the Ingessana Hills. Resources in podiform-type deposits are reported to be of the order of 2 Mt of high quality, hard, lumpy, metallurgical grade chromite at 54% Cr_2O_3 with a chrome/iron ratio of 3:1. Production is estimated to be 10,000 t/y.

There is clearly substantial gold and base metal exploration potential in the Ariab-Arbaat volcano-sedimentary belt. Undeveloped industrial mineral deposits of commercial interest include the Dirbat Well wollastonite deposit, with an estimated 300,000 t of 70-90% wollastonite, the Jebel Gerein kyanite deposit containing an estimated 450,000 t of kyanite, the Qala en Nahl talc-magnesite deposit, and semi-precious stones - notably agate, chalcedony and carnelian - with an alluvial production history dating from Neolithic times.