

## BULGARIA

*By John Menzies and Dimitar Dimitrov  
Cmi Capital Ltd, Sofia Bulgaria*

**M**ining and metalworking in Bulgaria has a long history with spectacular gold treasures dating from as early as the Neolithic being periodically unearthed. By Roman times the area was an important sources of base and precious metals. The region is largely under-explored and offers attractive opportunities for foreign investment.

During 2003 the Bulgarian economy improved, with reasonably high growth, stability at the macro level, modest inflation, credit expansion and increasing incomes and consumption.

GDP growth for 2003 was a respectable 4.3%. Consumption up 6.6%, was strong throughout the year, being underpinned by higher real incomes and increased bank lending. Driven by strong foreign direct investment (FDI), fixed investments grew at nearly 14% and exports stabilised at 8% year-on-year. Imports however grew by 14.8%, contributing to the near doubling of the current account deficit, which was mostly covered by FDI inflow. Industrial sales and output performed well, supported by the strong FDI. Average inflation during the year was 2.3%. At the end of December 2003 gross external debt was €10.3 billion, or 58% of GDP, and unemployment in December was a seasonally high 13.5%.

Fitch and JCRA increased Bulgaria's credit rating during 2003 to BB+ (outlook positive) and it is expected that the country will achieve an investment-grade rating in 2005. On the political front there were a number of opposition-sponsored no-confidence votes in the government of Saxe-Coburg - all were defeated.

Bulgaria's minerals industry includes the mine output of ferrous and nonferrous metals, mineral fuels (mainly coal), and clays, gypsum and rock salt. Additionally, several smelters produce refined copper, gold, iron and steel, lead, silver and zinc. Cement, dimension stone and other construction materials are also widely produced. In recent years there has been a drive to privatise the industry and now the majority of saleable mining operations are in private hands. The industry employs 23,000 people with the majority in the coal mining sector.

The most significant development in the industry in Bulgaria in 2003 was the purchase by Dundee Precious Metals Inc of Navan Mining Plc and the announcement of plans for significant investment, reportedly US\$150 million. Legislative change is also planned for 2004 including amalgamation of all exploration and production licensing into a single ministry streamlining the cumbersome licence issuing process. The requirement for tender on many licence applications remains a major obstacle in an internationally competitive environment.

## **Gold**

Bulgaria produced 2,270 kg of gold in 2003 principally from the Chelopech underground mine and as a by-product of base metal mining operations. During 2003 Dundee Precious Metals Inc. (DPMI) acquired Navan Mining and announced plans to redevelop the underground operations at the Chelopech copper-gold mine expanding production from 0.6 Mt/y to 1.5 Mt/y with an investment of US\$40 million. DPMI reports gold production from Chelopech is expected to increase to 4,700 kg/y within two years. In other developments, DPMI is completing a feasibility study on the Ada Tepe gold deposit, containing 31 t gold, in southern Bulgaria where it expects to invest US\$45 million and achieve production of more than 3,400 kg/y. A small scale underground gold mining operation at Challa commenced during the year.

## **Copper**

Bulgaria mined 24.5 Mt/y of moderate-grade copper ore from two open pit and one underground operations during 2003 to produce 401,000 t/y of 20% copper concentrate. The Chelopech mining operation works a high sulphidation epithermal copper-gold deposit. Although the mine is primarily a gold producer owing to the much higher value of gold it produces, copper production was expected to reach about 10,000 t. Chelopech concentrate is exported to foreign smelters. Bulgaria's major copper deposits are in the Srednogorie-Panagjurishte region at the Assarel-Medet (10 Mt/y) and the Elatsite (15 Mt/y) open pits. Both open-pit operations mine 0.5% Cu porphyry ore with gold and PGM credits. Concentrates are sold to the Pirdop copper smelter and traded internationally.

The Pirdop copper smelter and refinery located near the Chelopech mine is owned and operated by Umicore of Belgium (formerly Union Minière) and accounts for more than 90% of the country's total smelter copper production, of which the bulk is exported to Belgium as anode feedstock to Umicore's refinery at Olen. Capacity at the time of Union Minière's acquisition in 1997 was 120,000 Mt/y which was subsequently increased to 150,000 Mt/y. A US\$109 million expansion to 185,000 Mt/y of anode and 45,000 Mt/y of cathode is underway.

## **Iron and Steel**

Bulgaria has two steel plants, Kremikovtzi and Stomana, which produced 1.9 Mt/y of steel and related products in 2003. Both plants have been privatised. Some 466,000 Mt of low-grade high sulphur iron ore was mined for domestic consumption in 2003.

Kremikovtzi is Bulgaria's largest steel plant with a capacity of 1.2 Mt/y and is owned by Finmetals Holding with 71% and the State of Bulgaria and minority shareholders holding 29%. The company is seeking new investment to increase capacity to more than 2 Mt/y and mitigate some of the plants' environmental issues. In this regard, Kremikovtzi was in discussion with Indian steel producer Ispat International.

Stomana produces 700,000 Mt/y of heavy plate, merchant bar, special profiles and grinding balls. In 2001, Sidenor SA of Greece acquired 75% of

Stomana with the balance held by Eurometal SA.

### **Lead and Zinc**

Lead and zinc in Bulgaria is mined at Madan, Luki, Zlatograd and Kardzali in the Rhodope Mountains in southern Bulgaria. Production from underground operations totalled 759,000 Mt during 2003 with the largest producer Gorubso-Madan JSC being successfully privatised in 2001. These ores are smelted at KCM SA outside Plovdiv and at Kardzali. KCM produced 72,000 Mt of zinc ingots and 60,000 Mt of refined lead during 2003. Both smelters have seen considerable investment in both production and environmental facilities in the past few years.

### **Manganese**

Bulgaria has the largest manganese reserves in Europe and has previously produced up to 1.5 Mt/y of high-grade ores. The state company Evromangan Ltd halted manganese mining at its large Obrochishte pit in 1999. There are plans to re-open this operation at a rate of 400,000 t/y with the introduction of new equipment and a Western European investor.

### **Coal and Lignite**

Bulgaria produces 27 Mt/y of coal and lignite from open pit operations at Maritsa, Chukurovo, Belibryag, Stanyanci and Vetren and from seven smaller underground mines. The largest however, Maritsa, is responsible for 80% of the total. Reserves total 2,500 Mt of lignite and 250 Mt of bituminous coal. The State has retained significant control of production because of its strategic importance (45% of the nation's electricity is provided by coal-lignite fired thermal power stations). There have also been a number of issues in relation to the privatisation of some of the operations and a lack of investor interest in others. The systematic closure of less profitable coal mines in the past decade has seen a significant decrease in the labour force. Job security issues created minor work stoppages during 2003.

### **Industrial Minerals**

Bulgaria produced a broad range of industrial minerals for the construction industry and as chemical plant feedstock including clays, barytes, silica sand and salt. The major focus of foreign investment in this sector has been the privatised cement industry. During 2003 Silver & Barite SA of Greece acquired Bentonite SA, the main Bulgarian producer of bentonite and perlite at Kardzali. S&B is expected substantially to increase production within two years.

### **Exploration and development**

With the acquisition by DPML of Navan Mining Plc during 2003 there was a significant increase in gold exploration activity in the Rhodope Mountains. Dundee announced development plans for Ada Tepe and a significant new investment in the Chelopech mine. Elsewhere, Hereward Resources announced promising gold exploration results from the Dikanyite and Gornoseltsi permits and commenced a metallurgical study of the Rozino gold deposit. Drilling activity in 2003 was arguably the highest since 1989.

At the beginning of 2002 there were 20 granted exploration licences and by year end there were 27 issued exploration licences with an additional eight in process. Of this total, Dundee Precious Metals Inc and Hereward Resources Plc hold 18. The total area covered by these licences is some 3,800 km<sup>2</sup>. There was a significant increase in application and tender activity towards the end of the year, with new entrants including Omax Resources Ltd.

### **Environmental issues**

Mining practices last century have left a significant legacy of air and water pollution from mine sites, waste and tailings dumps, processing facilities and smelters. Remedial action in recent years has included the clean-up of mine sites and better management of current and historic tailings dams. There has been significant expenditure at all smelters to reduce their environmental impact and these programmes are ongoing.

### **Looking forward**

During 2004 we expect to see an increase in production from Chelopech and the finalisation of the Ada Tepe feasibility study. Positive progress on these two projects could see at least a five-fold increase in gold production over the next few years. A rush of new licence applications in late 2003 should see significantly accelerated exploration efforts in 2004 and new legislation is expected to make exploration licence acquisition easier although the requirement for tender remains a serious obstacle to investment. After a number of slow years the Bulgarian exploration and mining industry seems set for renewed activity.

Table following page.

<b>Annual mineral and metal production</b>					
<b>Commodity</b>	<b>Unit</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
Hard coal /total	'000 t	27,094	27,122	26,556	27,693
- brown coal	'000 t	3,211	3,151	3,232	3,043
- lignite	'000 t	23,765	23,855	23,202	24,597
- black coal	'000 t	100	101	109	44
- anthracite	'000 t	18	14	13	9
Crude oil	'000 t	41	32	33	26
Gas	'000 m <sup>3</sup>	15,300	22,200	10,800	10,600
Oil shale	'000 t				3
Iron ore	'000 t	589	464	373	466
Iron concentrate	'000 t	332	218	167	248
Manganese ore	'000 t	-	1,515	4	4
Dry Mn concentrate	'000 t	-	414	-	-
Steel	'000 t	2,023	1,942	1,860	1,950
Copper ore	'000 t	22,829	24,878	26,030	26,241
Copper concentrate - 20%	'000 t	462	437	422	458
Blister copper	'000 t	178	157	181	185
Cathode copper	'000 t	32	34	40	42
Gold	kg	2,347	2,220	2,310	2,270
Silver	kg	54	57	60	62
Lead and Zinc ore	'000 t	531	662	753	759
Lead concentrate - 70%	'000 t	15	23	28	35
Zinc concentrate - 52%	'000 t	18	21	25	36
Lead, all forms	'000 t	84	83	66	68
Zinc	'000 t	84	88	82	84
Raw kaolin	'000 t	1,011	959	1,026	1,137
Silica sand	'000 t	689	677	607	730
Bentonite clay	'000 t	296	320	211	146
Fireclay	'000 t	34	37	38	31
Raw barytes	'000 t	875	825	656	637
Gypsum	'000 t	170	167	156	166
Perlite	'000 t	17	12	10	17
Na pegmatite	'000 t	22	22	34	4
Rock salt	'000 t	1,700	1,931	1,800	1,900