

SeeNews

• Research
on demand

**GOLD MINING AND
PROCESSING IN BULGARIA**

MARCH 2010

Contents

BULGARIA'S GOLD MINING AND PROCESSING	3
Bulgaria's gold ore deposits:	4
There are also proven gold ore reserves in the following deposits:	4

BULGARIA'S GOLD MINING AND PROCESSING

Bulgaria has very diverse geology. The tectonic settle of the country is presented mainly of four first-order tectonic units and many second and third-order units. In the Central part of the Balkans mostly copper and copper-gold ore is produced which is relatively poor in metal content, but its low price makes it valuable for many foreign mining companies. The Rhodope tectonic zone is rich of ores: polymetallic ore, lead-zinc ore, gold and silver.

In the National Balance of Reserves and Resources of Mineral Resources in Bulgaria are included 27.3 tonnes of proven gold ore. The pure gold metal which would be extracted by them is 128 tonnes.

MAIN OPERATING MINES IN BULGARIA



- | | | |
|---------------------------|-------------------------------------|---|
| ● Chelopech - Au, Cu | ○ Senovo - Kaolin | ■ Kardjali - Zeolites, Bentonite, Perlite |
| ▲ Elatzite - Au, Cu | ▲ Osogovo, Central Rodopes - Pb, Zn | ■ Gotse Delchev - Diatomite |
| ▲ Assarel - Cu | ○ East Rodopes - Au, Pb, Zn | ■ Doubroudza - Black Coal |
| ■ Maritza Iztok - Lignite | ▼ Obrochishte - Mn | ■ Devnja - Limestones |
| ▲ Kremikoczi - Fe, Barite | ◆ Koshava - Gypsum | ● Thulenovo, Dolni Dabnik, Gorni Dabnik - Oil |
| ■ Mirovo - NaCl | ≡ Belitsa - Vermiculite | ⊕ Boutan, Uglen, Galata - Gas |

According to the estimates, Bulgaria's gold reserves and resources amounted to 446 tonnes, concentrated in more than 30 deposits mainly in southern and central Bulgaria. Explored deposits however are only 172 tonnes, or 40% the country's potential. Nevertheless, Bulgaria has the seventh richest gold reserve across Central and Eastern Europe, data from the World Gold Council showed.

The gold, extracted from a tonne of ore amounted to 12 grammes. The highest gold content (8.0 gr/tonne) has the gold ore deposit Chala (operated by Gorubso-Kardzhali). One of the most considerable stocks - 45 tonnes of gold are in the copper ore deposits Elatsite and Asarel operated by Bulgarian companies Elatsite-Med and Asarel Medet, but the gold content in the ore is too low - between 0.120 and 0.145 gr/tonne. After metallurgical processing, this 'cathode' gold is exported mainly to Belgium.

Experts indicate some 50 deposits of gold ore in Bulgaria, of which almost 80% are non-operating. These 50 deposits are predominantly small, with extraction capacity of 0.5 tonnes of ores on average. However, by applying hydrometallurgical (including cyanide) technology, they may be of interest to investors.

In 2011 in Bulgaria were extracted 1.37 million tonnes of gold ores, and the number of employees engaged in the gold mining industry was 30,000. Some estimates show that exports of gold compose nearly 5.0% of country's GDP.

PRODUCTION OF GOLD AND GOLD PRODUCTS (KG)

2010	2009	2008	2007	
Gold	190	244	263	307
Gold products	25	N/A	23	24

Source: Bulgarian Association of Metallurgical Industry

EXPORTS AND IMPORTS OF NON-FERROUS METALS IN BLN BGN

	2009	2008
Exports	2.617	3.960
Imports	0.555	1.080

Source: National Statistical Institute

MAIN EXPORT MARKETS OF PRECIOUS METALS

Country	Share of the total
Belgium	51.00%
South Korea	19.60%
Switzerland	12.20%
Germany	7.80%
Turkey	2.40%

Source: Ministry of Economy, Energy and Tourism

Bulgaria's gold ore deposits:

- Chelopech - the largest deposit of gold, contained in copper ore, is near the village of Chelopech, central western Bulgaria. It is recognized as the largest gold deposit

in Europe. Gold reserves amount to 54,500 tonnes. The deposit in Chelopech has been explored since 1956, initially as a copper ore field. Later it became clear that this is in fact a copper-gold deposit. The site is operated by Chelopech Mining EAD, part of Canada's Dundee Precious Metals. The company extracts annually about 1.5 million tonnes of mixed copper-silver-gold ore and is conducting studies to expand the extraction of precious metals.

- Ada Tepe near Krumovgrad, southeastern Bulgaria. The annual output of the field is estimated at 1.3 tonnes of silver and 3 tonnes of gold. Its reserves are about 27 to 30 tonnes of gold. Proven gold deposits come to 835 thousand ounces. According to the expert estimates, the equivalent of this amount is USD 1.2 bln. In February 2011 the government granted a 30-year concession to Balkan Mineral and Mining EAD, another subsidiary of Dundee Precious Metals that will be extracting the precious metals in six sections united into a deposit field called Khan Kroum. The company plans to invest some EUR 60 million. In October 2011 Balkan Mineral and Mining EAD received a permission to search for and explore precious metals in the municipalities of Topolovgrad, southeastern Bulgaria and Galabovo, southern Bulgaria.
- Bakadzhik - near the village of Ustrem by Topolovgrad, southeastern Bulgaria. This deposit was exploited by the socialist-era enterprise Ustrem.
- Zlata (est. 1939) - near the town of Tran and the village of Velinovo, both in western Bulgaria. The gold (gold nuggets) is found in three mineralization phases. Gold content varies from 15 to 100 grammes a tonne.

There are also proven gold ore reserves in the following deposits:

- Sedefche near Kardzhali, southeastern Bulgaria;
- In the Osogovo mountain, western Bulgaria;
- In the valleys of Ogosta River and its tributary Zlatitsa River, both in northwestern Bulgaria;
- Govezhda ore field - near Montana in the western part of the Stara Planina range, northwestern Bulgaria. The field has a large amount of gold-containing quartz veins;
- Svishtiplaz and other deposits in the region of Srednogorie, Chelopech and Zlatishka Mountain in central western Bulgaria;
- In the valley of Yantra river and its tributaries around the town of Gabrovo in central northern Bulgaria;
- Koljo Marinovo gold deposit near Chirpan, southeastern Bulgaria - the gold is in the form of grains and flakes, reaching 0.3 mm. Average gold content is around 5 grammes per cu m, but in some areas it reaches 20 grammes per cu m;
- Petelevo deposit near Panagyurishte in central Bulgaria - gold reserves are more than 10 tonnes, but gold content in the ores is very low - 0.62 grammes per tonne;
- Kraishte region near Kjustendil, southwestern Bulgaria;
- The whole Rila-Rhodope region in southwestern and central southern Bulgaria - in the valleys of the rivers Vacha

and Arda and their tributaries;

- Dobroselets deposit in Sakar mountain, southeastern Bulgaria - ore bodies have unfavourable morphology;
- Madzharovo deposit in southeastern Bulgaria - technological problems in ore processing, similar to the Govezhda deposit in northwestern Bulgaria;
- Minor deposits around Vitosha mountain in central western Bulgaria;
- Search for gold ores in Milin Kamak near Breznik, southwestern Bulgaria are terminated;
- Ongoing gold ores search near the village of Srebren, Velingrad in southwestern Bulgaria;
- Prohorovo deposit near Nova Zagora in southeastern Bulgaria - the exploitation of the deposit has ceased. The probable gold reserves are 37 tonnes in a large massive with very low gold content.
- In 2011 Canadian minerals exploration company EurOmax Resources Ltd. found gold and silver deposits near Tran,

western Bulgaria and Rakitovo, southern Bulgaria with geological reserves estimated at more than 200 tonnes. The deposits are yet to be registered by the Bulgarian Natural Resources and Concessions Directorate and that will allow the company to continue research activities for another year. According to preliminary data, the Rakitovo deposit has seven tonnes of gold and 100 tonnes of silver, while the deposit near Tran has 100 tonnes of gold.

SeeNews

• Research
on demand

Sales: +43 1 229 7120 *Austria* | +359 2 80 12 850 *Bulgaria* | +44 203 608 1431 *UK* | +1 202 503 9945 *USA*
Editorial enquiries: t. +359 2 80 12 679 | f. +359 2 80 12 801 | 64 Kiril i Metodiy, 1202 Sofia, Bulgaria
sales@seenews.com | research@seenews.com | research.seenews.com

SeeNews: The corporate wire • Power market review • Renewables • Shipping • Energy
Company profiles • Research on demand • TOP 100