

# Kosovo ready to roll

Kosovo hosts some of the world's largest lead, zinc and silver deposits, and the government is ramping up a tendering process to encourage exploration

**K**OSOVO may be one of the smallest countries in Europe, but it is rich in minerals and largely undeveloped. In the Middle Ages, gold was mined – as well as lead, zinc and nickel. After the Kosovo war in 1998, mining activities ceased and nearly all metal mines were closed.

For several years now, the government of Kosovo has invested considerably in geological investigation and the re-evaluation of mineral deposits. This has resulted in a resurgence of mining activity. Since 2005, Kosovo's mining regulator, the Independent Commission for Mines and Minerals (ICM), has issued more than 200 exploration and mining licences for metallic metals, sand and gravel.

As part of the ICM's commitment to increasing foreign investment, German-based Beak Consultants GmbH has developed an inventory of geoscientific data and built the Geodatabase Kosovo Information Management System. The system contains information such as geoscientific maps, airborne geophysical

data, drill hole data and reports. Geological maps have been reviewed and recompiled and a geoscientific atlas – including geology, minerals, metallogeny, hydrogeology, tectonics and landscape – of the country has been created. Geochemical data is also available in the gold prospective area of eastern Kosovo.

Beak Consultants used new neural network-based advance prediction software to construct the maps by analysing the footprints of known deposits. The predictive maps have been verified by comparing the model output with known mineral deposits.

Kosovo has very large deposits of lignite, with reserves of about 14,000Mt, which are mainly located in the Kosovo Basin in the central part of the country. Kosovo depends on these reserves for energy use and only 3% of the reserves in the Central Basin have been extracted. A lignite deposit in the Dukagjini Sub Basin may also provide a potential lignite resource, with a seam thickness of 35m – compared with 41m to 100m in the Kosovo Basin.



Kosovo has highly prospective lignite deposits

## LEAD AND ZINC FINDINGS

Kosovo has very high potential for lead, zinc and silver. The resources amount to a total of almost 50Mt of ore. The main ores are located in the Kopaonik Mountains, with the main prospective area in the Vardar Minerogenic Zone.

The most important lead and zinc mineralisations can be found in the northern and eastern parts of Kosovo. They belong to the Trepça Belt of lead-zinc mineralisations, which extends for over 80km in northern and north-eastern Kosovo and includes numerous mines and mineral occurrences.

The genesis of each deposit is different. The metal content and the relations between the metals are very different, too. From the genetic point of view, the mineralisation is Neogene in age and hydrothermal in fluids. The origin of the metals is uncertain. The lead, zinc and silver could be derived from deep sources of mantle processes. The possibility of the origin of near-metal sources (from older host rocks: Triassic or Jurassic) is under discussion.

In Kosovo, developed mines (also known as *key mines*) and undeveloped mines have to be distinguished. Five important key mines and numerous smaller deposits and occurrences exist. Kosovo requires exploration activity to further investigate mineral potentials.

In the north of Kosovo, the Kopaonik Mountains with volcanic complexes are very prospective. The southern part of the zone is a prospective terrain of high interest, because of the Cenozoic volcanic active centres with ultra potassium magmatism. Unfortunately, no detailed data and information are available about lithological sequences in the depth (such as appearance of carbonatic rocks) and tectonic fracturing.

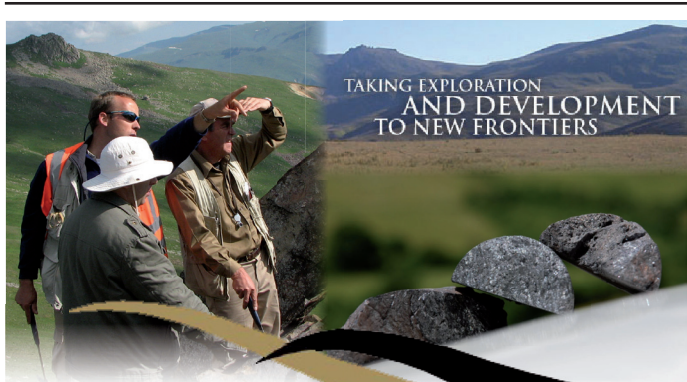
## FUNCTIONS OF THE ICM

ICM is an independent regulatory body responsible for regulating and monitoring the mining industry in Kosovo.

To ensure that Kosovo's mineral potential is adequately promoted and developed, ICM has undertaken numerous technical programs, including:

- Geoscientific maps;
- Explosives security system;
- Kosovo quarry plan;
- Geochemical survey;
- Airborne geophysical survey; and a
- Geographical information system.

The ICM has developed the Geodatabase Kosovo information management system which contains the following information:



**First mover exploration and development company with expertise in emerging environments**

Lydian International is a diversified British based mineral exploration company with expertise employing "first mover" strategies in emerging environments.

- Flagship project new gold discovery in Armenia which after just one season of drilling has a one million ounce oxide inferred resource (NI-43101 compliant) open and untested in all directions and 25 year mining license.
- Advanced poly-metallic (zinc-lead-silver-gold) project at Drazhnje in Kosovo, and an extensive, very high grade, early stage zinc-lead oxide prospect at Crepulje also in Kosovo.

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"Since 2005, Kosovo's mining regulator has issued more than 200 exploration and mining licences for metallic metals, sand and gravel"

- Mining Law administrative issues. These include the handling of exploration and exploitation licences, blasting permits and processing plant operation permits;
- Document handling. All relevant documents have to be visible on screen;
- Storage of all mineral relevant information. For example, deposits and occurrences;
- Management of factual geoscientific data. This includes boreholes, samples, geochemical analyses, geophysical data, contaminated sites;
- Preparation of geoscientific maps. Interactive digital geological maps, soil maps and minerals maps.

### OBTAINING A LICENCE

In principle, there are three ways of obtaining an exploration/exploitation licence in Kosovo:

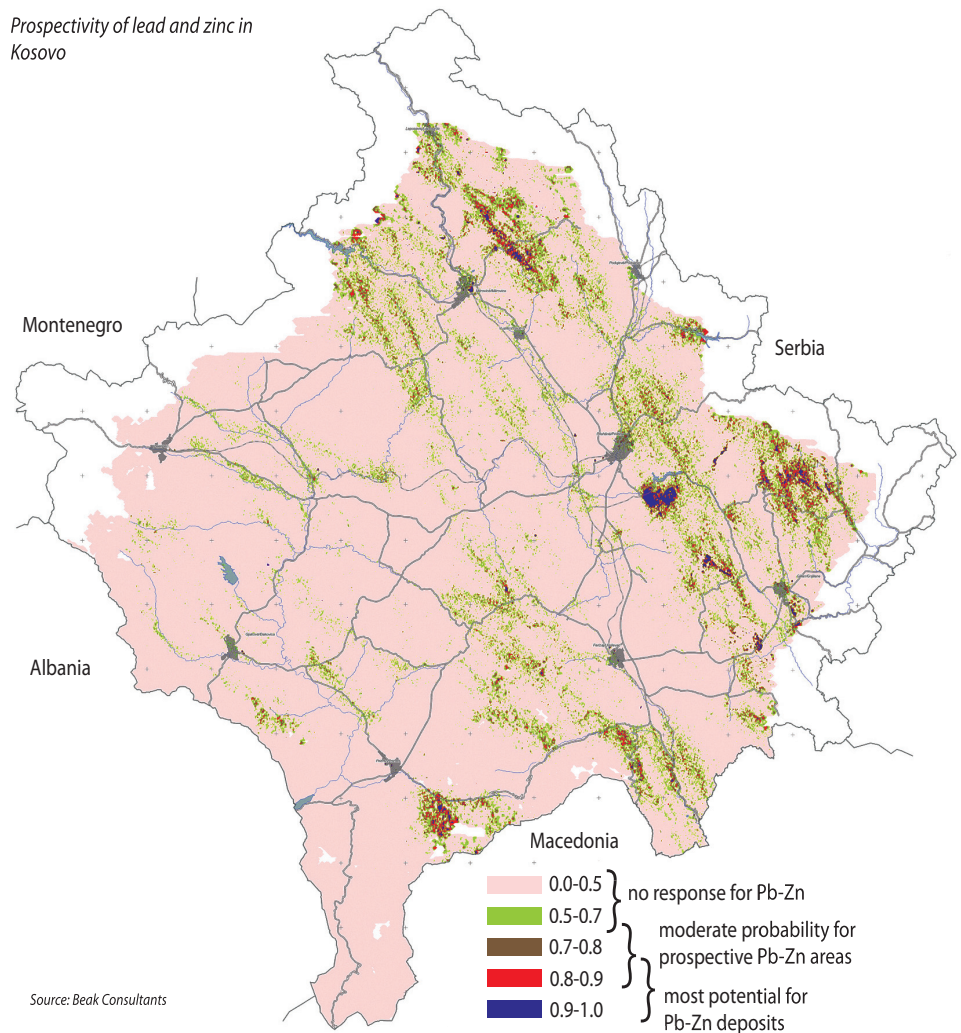
- First come, first served;
- Competitive tendering;
- Mine development agreement.

Tim Coughlin, chief executive and president of Lydian International Ltd – the only active foreign mining company in Kosovo – told *Mining Journal*: “The Kosovo mining law is EU standard and one of the best mining laws I have ever worked with.”

The Ministry of Energy and Mining has identified nine areas or ‘zones of interest’ that it intends to launch for a competitive tendering process. Following the 2006/2007 Airborne Geophysical Survey, it can be confirmed that these areas corresponds with zones with geophysical anomalies. ICM says the areas surrounding the ‘zones of interest’ are highly prospective.

Procedures for competitive tendering are currently being developed, based on the model used for the Sibovc lignite mining area. Sibovc is an ongoing lignite mining/power project being undertaken by the Kosovo government and supported by the World Bank, European Commission and USAID.

Prospectivity of lead and zinc in Kosovo



Source: Beak Consultants

### CASE STUDY: LYDIAN INTERNATIONAL

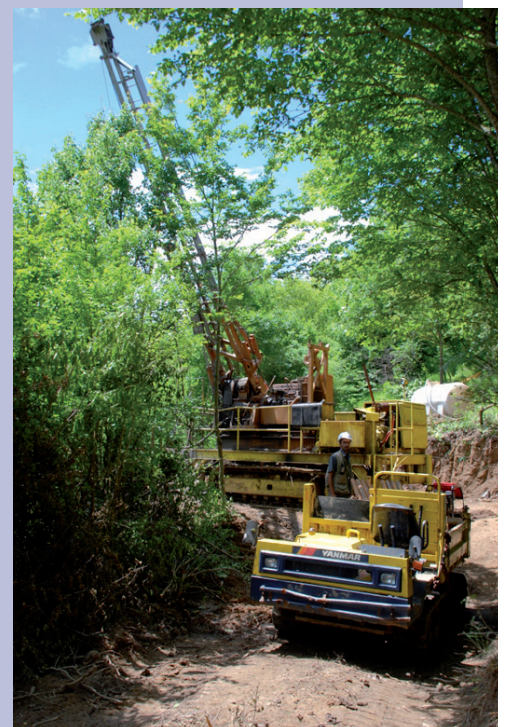
UK-based Lydian International Ltd is the only foreign mining company active in Kosovo. The TSX-listed company has two base metal projects in Kosovo – Drazhnje and Crepulje in the north. Drazhnje is a former exploration project, with potential in zinc, lead, silver and gold. Previous drilling and underground sampling led to the estimation of a Yugoslav resource (not JORC compliant) of 4.7Mt at 4.9% Zn, 2.4% Pb and 45g/t Ag in categories A + B + C1 and a further 2Mt at 5.8% Zn, 3.2% Pb and 45g/t Ag in category C2. The company has been drilling at the project since 2007, and in the September quarter of 2008 intersected some of the best grades yet from the St Barbara area – 13m at 21% Zn, 7.1% Pb, 25.3g/t Ag and 0.5g/t Au.

The company reported in April that drilling had stopped at Drazhnje, with work now focused on accessing the underground exploration development to enable channel sampling and resource calculation.

At the Crepulje high-grade zinc-lead oxide project, the company re-sampled historic trenches and scout diamond drilling. Trench results were significantly higher and more consistent than historic sampling. The most encouraging result was from Trench 2, which assayed 32m at 25.9% Zn, and 3.9% Pb along its entire length.

In its annual report, the company said that in view of the current base-metal markets, efforts had been streamlined and work was focused at Drazhnje and on converting historical Yugoslav resources to National Instrument 43-101 compliant resources.

Lydian chief executive and president Tim Coughlin said in the report: “These projects benefit significantly from access to existing infrastructure such as transport facilities and concentrators, so even a small increase in the lead and zinc prices can mean a lot in terms of profitability.”



Lydian is progressing two projects, with a focus on Drazhnje