Mineral Resources of Kosova

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2. Geological-Geotectonic Setting
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Kosova’s Geography

- Located at the center of Balkans
- Surface - 10,887 km²
- Average altitude - 800 m above sea level
- Continental climate predominates
- Country's infrastructure is well developed
  - A fully developed road network does exist
  - There are several main roads connecting the large towns of Kosova and its territory with the neighboring countries
  - There are railway tracks to Macedonia and Serbia
Geological-Geotectonic Setting

- Very interesting territory characterized by a variety of geological formations:
  - Rocks age ranges from old crystalline Proterozoic to Quaternary
  - Rocks type:
    a) sedimentary,
    b) magmatic, and
    c) metamorphic
Kosova’s Tectonic Complexity in regional aspect

Dr. Zenun Elezaj – ICMM Board Member
Prishtine, 2008
Functioning of Mineral sector in Kosovo

Competent institutions for mineral sector in Kosova are:

- Ministry of Energy and Mining of Kosova
- Independent Commission for Mines and Minerals
Ministry of Energy and Mining responsibility's are:

- Prepares policies, strategies and legislative framework for mining and mineral sector development in Kosovo, and organizes work on their implementation;

- Promotes mineral resources of Kosovo for research and exploitation;

- Monitor the issuance by the independent mining regulator of licenses and permits for mining activities in Kosovo;

- Supports creation of a favorable environment for private investment in the mining field.
Functions of Independent Commission for Mines and Minerals:

- Independent Commission for Mines and Minerals is an independent regulatory body responsible for regulating and monitoring the mining industry in Kosovo;
- The issuing, transfer, suspension and revocation of exploration and exploitation licenses and permits;
- The issuing, suspension and revocation of permits and licenses related to the use of explosives in mining operations;
Main Minerals of Kosova

- Lead, Zinc, Silver, etc.
- Lignite
- Nickel and Cobalt
- Chromium
- Copper
- Magnesium
- Bauxite
- Iron
- Manganese
- Precious Metals,
- Industrial Minerals
- Etc.
Lead and Zinc

- The most important lead and zinc mineralisations are found in the northern and eastern part of Kosova.

- They belong to the Trepça Belt of lead-zinc mineralisations, which extends linear for over 80 km in northern and north-eastern Kosovo and includes numerous mines and occurrences.
Deposits of Lead-Zinc

- **Stantërg**: 31,469,200 t. 3.50% Pb, 2.87% Zn, 67 (g/t) Ag
- **Kizhnica - Artane**: 9,510,024 t. 3.76% Pb, 4.87% Zn, 128 (g/t) Ag
- **Albanik (Leposaviç)**: 8,120,000 t. 7.55% Pb, 3.60% Zn, 107 (g/t) Ag
- **Quka e Batllavës**: 4,700,000 t. 2.44% Pb, 4.92% Zn, 45 (g/t) Ag
The lignite resources of Kosovo are estimated at more than 10 billion tons, with favorable mining conditions. The average calorific value is 7,800 kJ/kg, the average ash content is in the range of 14 – 17 %, and the moisture varies between 42 – 49 %.
2. Dukagjini Lignite Basin is the 2nd largest deposit in Kosova. It covers an area of 95 km².
   - Its resources are estimated around 3 billion t of lignite, and
   - The average calorific value varies between 6,000 and 10,000 kJ/kg, the average ash content is around 20% and the moisture varies between 40 - 50%.

3. Drenica Lignite Basin is divided into two coal plains namely (i) Skenderaj, and (ii) Drenas
   - Its resources are estimated around 90 million t
   - The average heating value is 7300 kj/kg, with an average moisture of 32.46% and an ash content of 25.60%
Nickel

- Silicate nickel deposits genetically belong to the decay of serpentinites.
- In Kosovo there are two ore deposits:
  1. Çikatova (Dushkaja and Suka), and
  2. Gllavica

<table>
<thead>
<tr>
<th>Location</th>
<th>Ni Content</th>
<th>Co Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Çikatova (A+B+C1)</td>
<td>1.253%</td>
<td>0.063%</td>
</tr>
<tr>
<td>Gllavica (A+B+C)</td>
<td>1.463%</td>
<td>0.050%</td>
</tr>
</tbody>
</table>

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Prishtina, 2008
Chromium

- The deposits and occurrences of chrome are mainly bound to the ophiolites of the Western Ophiolite Belt.
- Locations of chromite occurrences are:
  1. Deva region (44% Cr₂O₃)
  2. Brezovica region (43% Cr₂O₃)
  3. Rahoveci region (35-55% Cr₂O₃)
  4. Goleshi region
  5. Dobrosheci region
Even though in Kosova there are a lot of occurrences and mineralization of copper, the scale of exploration is low.

Copper mineralization have been found in:

1. Suvo Rudishte (0.8%)
2. Banjskë
3. Guri i kuq (Rahovec) (1.20 - 2.73 % Cu)
4. Rexhance (Hani i Elezit)
5. Brod polymetallic mineralisations
6. Jabllanicë and Struzhë (Prizren)
7. Mushnikovë;
8. Binaq (Karadak)
9. Pashtriku (1% Cu) etc
Magnesite

- Most deposits and occurrences of magnesite appear to be within the Vardar zone
- Main magnesite deposits and occurrences are:
  1. Golesh-Magurë,
     - (A+B+C1) 2,385,457 t
     - Minable 1,148,457 t
     - (C2) 2,500,000 t
  2. Strezovc-Dardanë (Kamenice)
     - (A+B+C1) 1,653,683 t
     - Minable 1,488,314 t
  3. Dubovc-Vushtrri
  4. Dobroshec-Drenas
  5. Shterpcë
The most important bauxite deposit is situated at Gremnik mountain, Klina Municipality.

The quality of bauxite is:

- $\text{Al}_2\text{O}_3$ (46-52%),
- $\text{SiO}_2$ (1,0-4,5%),
- $\text{Fe}_2\text{O}_3$ (33-38%),
- $\text{TiO}_2$ (1,8-2,2%),

**Reserves:**

- \((A+B)\) $2,064,541$ t,
- \((C_1)\) $1,000,000$ t
- Potentially $4,000,000 - 5,000,000$ t
In Kosova are a lot of occurrences and mineralization of Iron but the scale of exploration it was very low.

Iron ore occurrences and mineralization are discovered in:

1. Carralevë-Petrashticë-Shtime (44%Fe, 2.5% Cr₂O₃)
2. Tërstenik (40%Fe, 3.5% Cr₂O₃)
3. Guri i Kuq (Rahovec)
4. Sedlare (Kamenicë) (40% Fe)
5. Ivajë (40% Fe)
6. Binaç
7. Shatoricë (40% Fe)
8. Dragash
Manganese occurs frequently of lead and Zinc Mineralization.

Deposits and occurrences are located in:
1. NW of Vllahi (25%)
2. Artanë
3. Bolevc (40%)

The most important deposit belong to the North area of Artanë.

The reserves are:

- (B) 790,836 t
- (C₁) 596,350 t
- (B + C₁) 1,387,186 t (22.21 % Mn)

Potentially around 5,000,000 t
Precious Metals - Few occurrences of precious metals are known. Small amounts of gold do appear in the mine Artanë and in the adjacent area. Silver is a typical association in lead and zinc mineralization.

Platinum-Group Metals (PGM) - Near the border of Albanian territory platinum group metal occurrences have been found. Analyses of these occurrences showed a positive correlation between platinum mineralization and chromites.
Kosova is rich in industrial minerals, including:

- Kaolin
- Bentonite
- Halloysite
- Quartz and Quartzite
- Diatomite
- Talc
- Sepiolite
- Leucite
- Garnet
- Asbestos
Technical programs:

- GeoScientific Maps
- Explosives Security System
- Kosova Quarry Plan
- Geochemical Survey
- Airborne Geophysical Survey
- Geographical Information System
- Website ([www.ks-gov.net/mem](http://www.ks-gov.net/mem); [www.kosovo-mining.org](http://www.kosovo-mining.org))
GeoScientific Maps

A series of 1:200,000 scale maps that show:

- Geological Map of Kosova.
- Tectonic Map of Kosova.
- Map of Minerals of Kosova.
- Hydrogeological Map of Kosova.
- Map of Mineral – And Thermal water of Kosova.
- Morpho-Orographical Structure of Kosova.
- Soil Map of Kosova.
- Satellite Imagery Map of Kosova.
Kosova Quarry Plan

A series of 1:50,000 scale maps that show:

- Base Map of the captured Construction Raw Materials.
- Map of Non-Blocked Construction Raw Materials.
- Map of Deposit Mineability.
- Map of Deposit Licence Status.
- Map of Deposit Protection Value.

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Prishtine, 2008
**Geochemical Survey**

Stream sediment sampling for analyzing 53 elements, including:

- **Base Metals** of Zinc, Lead, Copper.
- **Precious Metals** of Gold, Silver.
- **Indicator** elements for mineralization.
Airborne Geophysical Survey

Survey across Kosova to measure:

- **Magnetics** (Earth’s magnetic field)
- Four-frequency Electro-Magnetics
- **Radiometrics** (Potassium, Thorium, Uranium)
Magnetic Survey

Total magnetic intensity nT

46608 46841 46892 46951 47050

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Electro-Magnetic Survey

Electromagnetic RE 12 kHz ppm
Radiometric Survey
GEO-Database Kosova

Mining
- Applications and Licences
- Exploitation Sites
- Processing Plants
- Blasting Permits
- Explosives Register

Economic Geology
- Deposits and Occurrences
- Kosovo Quarry Plan

Environment
- Contaminated Sites

Geology
- Boreholes
- Samples and Analytics
- Geological Fieldwork
- Map Legends
- Legend for DGM100

Metadata Database
- Reports
- Documents

Administration
- Reference Tables
- Definition of Alerts
- User Management
- Database Change Log
- Options

Business Data
- Persons and Companies
- Parcels
- Business Letters
Why to invest in Kosovo

- **Kosova is reach in mineral resources, particularly lead, zink, lignite, ferronickel, bauxites, chromate, etc.;**
- **Existing mining industry represents great potential for private investment. Mining industry is one of our traditions;**
- **Kosova is open to further explore its mineral resources;**
- **Kosova has a very Investor Friendly Mining Regulation;**
- **Low tax regime**
  - Customs duty on imports 10% - a reduced rate of 0% applies to imports of capital goods and agricultural production inputs
    - VAT rate is 15%, 0% taxes on exports
    - Personal income tax rates vary from 0-20%
    - 0% VAT and customs duty on exports
    - Corporate income tax 20%
Stimulating business environment

- Free access to the market of the European Union and the markets of neighbouring countries;
- Simple and quick business registration procedure. Modern and EU compatible legal framework;
- The Euro is the official currency, eliminating Euro zone currency risk.

Law on foreign investments


Population and labour market

- Young and motivated population - 2 million population, 70% under the age of 35. Official languages: Albanian and Serbian. Other European languages mainly English, Italian, German, Swedish, French and Turkish.
- Highly flexible labour force. Average monthly wage 218 Euro, Low income tax - 5%. Mandatory contributions for individual pension saving accounts 10%.
**Mining Legislation**

- UNMIK Regulation 2005/2 created the Independent Commission for Mines and Minerals (ICMM) in Kosovo. After declaration of independence Kosovo Parliament approved the law on Amending UNMIK Regulation 2005/2 on the Independent Commission for Mines and Minerals (ICMM) in Kosovo. This body regulates the mining sector and implements and enforces the Mining Law; handles exploration and exploitation licence applications; approves applications for, and controls the transport and handling of, commercial explosives; provides mines inspectorate services; terminates illegal mining activities; and collects royalties.
LICENCE TYPES ARE:

- **EXPLORATION LICENCE**
  - *Construction minerals*: Valid for two years and may be extended for an additional two years. There is a maximum area of 250 ha per individual licence.
  - All other minerals: Valid for two years and may be extended up to three times at two years per extension, accompanied by a 50% reduction in licence area. There is a maximum area of 100 km² per individual licence.

- **RETENTION LICENCE**
  Construction minerals: A maximum of one year from expiry of the exploration licence. Any other materials: A maximum of five years from expiry of the exploration licence.
**EXPLOITATION LICENCE**

- Construction minerals: This includes existing tailings exploitation, and must have an initial term of no more than 25 years, extendable for terms of up to 25 years. Any other minerals: This includes existing tailings exploitation, lasts for not more than 40 years and can not be extended.

**SPECIAL OPERATIONS PERMIT**

- The term and scope of each special operations permit shall reasonably be established by the ICMM.

**ARTISANAL MINING LICENCE**

- Construction minerals: Valid for two years and may be extended for a further two years. A maximum exploitation is permitted of 12,000m³ in any calendar year. An artisanal mining licence may be issued only to a municipality. Other permits issued by the ICMM include a crushing and milling permit, a processing plant permit (asphalt or concrete), a transport permit, an explosives import permit, a blasting permit and an explosives storage facility permit.
THANK YOU