Overview, Opportunities and Legal Framework on Mining Sector in Albania

Tokyo, August 27, 2008
MINING DEPARTMENT

• Consults and collaborates with relevant government structures, on preparing policies related to mining sector;
• Applies the governmental policies in mining sector;
• Provides the technical expertise, in respect of its institutional obligations, on studies and projects in the mining and post mining activity;
• Promotes mining resources, negotiates mining agreements and monitors the implementation of development programs;
• Supervises mining and post mining activity.
Albania is a very rich country in mineral resources. Exploration, exploitation and processing of mineral ores constitutes in a significant activity in Albanian economy.

In the year 1922, was compiled the Geological map of Albania, the first of such maps in Balkan Peninsula.

In the year 1929, was formulated and approved the Mining Law of Albanian Kingdom, which opened the road towards the initiation of prospecting-exploration-mining of minerals.

In the years 1944-1994, the mining activity has been organized in the stat form entreprises

The process of restructuring of mining activity has passed through different stages:

• Privatisation process (1994 in continuity);
• Restructuring of state enterprises in the chromium and copper sector (1994-1998);
• Administration and legal framework based on the laws of market economy (Albanian Mining Law 1994);
• Concession on the assets of mining industry (1995);
• The closure of the non-effective mines and conservation of the potential mines (1993 in continuity).
The main products realised by this industry during the years:

- Chromium ore, 1948-2007: 26.8 million tons
- Ferrochrome from 1976, about: 720,000 tons
- Copper ore, 1938-2007: 24.4 million tons
- Coal, 1938-2007: 38.7 million tons
- Nickel-Silicate ore till 2007: 1.3 million tons
- Gold: 0.5 tons
- Silver: 2.4 tons
- Olivinite: 0.4 million tons
- Dolomite: 0.1 million tons
- Gips: 0.3 million tons
- Salt: 1.4 million tons
- Phosphorites: 1.2 million tons
- Volcanic glass: 0.3 million tons
- Refined natural bitumen: 0.2 million tons
Chromium ore production in years

Copper ore production in years
Fe-Ni ore production in years

Coal production in years
The private mining activity in Albania started in 1995. Up to 13.12.2007, 600 mining permits are given, from which, 503 are exploitation mining permits.
The regions with more mining permits, are: Bulqizë, Krujë, Tiranë, Vlorë, Tropojë.
In the map and charts 1, 2, 3, are shown the dispersion of exploitation mining permits, according to the kind of mineral, districts and years.
Chart 1. Mining Permits according to the kind of mineral

- chrome
- copper
- Fe-Ni, Ni-Si
- coal
- limestones
- baoxide
- quartz
- gypsum
- clays
- marm. limestones
- baded limestones
- baded sandstone
- plagiogranit
Chart 2. Mining Permits according to the districts
Chart 3. Mining Permits according to the years
THE CONCESSIONS

By the approval of Concession Law in 1998, are given these concessions:

- Bulqiza Massif, to the Italian Company “DARFO”, the Chrome Mine of Bulqiza, concentrator of it, heavy-media suspense concentrator of Klosi, ferrochrome Plant-Burrel-Mat, Chrome Mine of Katjel, Librazhd district, Chrome Mine Pojska, Pogradec and Ferrochrome Plant in Elbasan.

- The Polymetallic Massif of Munella, to the Turkish Company “BER-ALB”.

<table>
<thead>
<tr>
<th>No.</th>
<th>Mineral Production</th>
<th>Production</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chrome</td>
<td></td>
<td>189 531 tons</td>
<td>325 000 tons</td>
</tr>
<tr>
<td>2.</td>
<td>Chromium Concentrate</td>
<td></td>
<td>2 800 tons</td>
<td>2 800 tons</td>
</tr>
<tr>
<td>3.</td>
<td>Copper</td>
<td></td>
<td>0</td>
<td>100 000 tons</td>
</tr>
<tr>
<td>4.</td>
<td>Copper Concentrate</td>
<td></td>
<td>0</td>
<td>16 000 tons</td>
</tr>
<tr>
<td>5.</td>
<td>Fe-Ni and Ni-Si</td>
<td></td>
<td>74 000 tons</td>
<td>370 000 tons</td>
</tr>
<tr>
<td>6.</td>
<td>Coal</td>
<td></td>
<td>3 800 tons</td>
<td>4 000 tons</td>
</tr>
<tr>
<td>7.</td>
<td>Limestones</td>
<td></td>
<td>1 344 890 m³</td>
<td>1 600 000 m³</td>
</tr>
<tr>
<td>8.</td>
<td>Marbled limestones blocks</td>
<td></td>
<td>11 420 m³</td>
<td>20 000 m³</td>
</tr>
<tr>
<td>9.</td>
<td>Beded limestones</td>
<td></td>
<td>22 793 m³</td>
<td>30 000 m³</td>
</tr>
<tr>
<td>10.</td>
<td>Sandstone in blocks and beded</td>
<td></td>
<td>3 200 m³</td>
<td>10 000 m³</td>
</tr>
<tr>
<td>11.</td>
<td>Clays</td>
<td></td>
<td>562 469 tons</td>
<td>800 000 tons</td>
</tr>
<tr>
<td>12.</td>
<td>Gypsum</td>
<td></td>
<td>20 378 tons</td>
<td>40 000 tons</td>
</tr>
</tbody>
</table>
There are three main regions of Ultrabasic Massifs of chrome in Albania:

1. North-East Region (Ultrabasic Massif of Tropoja and Kukës)
2. Central Region (Ultrabasic Massif of Bulqiza).
3. South-East Region (Ultrabasic Massif of Shebenik-Pogradecit)

Present Geologic Reserves of chrome in these regions are:

- **Category B+C₁**: 21.8 million tons
- **Category C₂**: 15.1 million tons
- **Total: B+C₁+C₂**: 36.9 million tons
• **Tropoja Ultrabasic Massif**  
Geological reserves: 6.1 million tons x 26.48% Cr$_2$O$_3$  
Perspective deposits: Zogaj, Vlahnë, Qaf-Perollaj

• **Kukës Ultrabasic Massif**  
Geological reserves: 6.8 million tons x 21.4% Cr$_2$O$_3$  
Perspective deposits: Kalimash, Përroi Batrës

• **Bulqiza Ultrabasic Massif**  
Geological reserves: 12 million tons  
Geological reserves, more than 38% Cr$_2$O$_3$: 7.5 million tons  
Perspective deposits: North Bulqiza, Qaf-Buall, Batër, Krasta in depth, Thekna in depth, intermediate region of Batër-Liqeni Sopeve-Thekën-Tërnovë

• **Shebenik-Pogradec Ultrabasic Massif**  
Geological reserves: 1.2 million tons, more than 38% Cr$_2$O$_3$  
Perspective regions: Katjel-Pojskë; Bushtricë-Përroi Govatës.
Based on the geological conditions of ophiolites position, their morphology, genetic and mineralogical components, etc., are distinguished four main types of copper deposits:

- **Hydrothermal-Methasomatic and Volcanogenic-Sedimentary Deposits**, as: Munella, Qaf-Bari, Gurthi, Rruga Rinise, etc.
- **Main type Volcanogenic-Hydrothermal-Methasomatic Deposits**, as: Tuçi, Spaci, Derven, Paluca, etc.
- **Volcanogene-Sedimentary Deposits**, as: Munella, Gjegjan, Palaj, Karma, Rubik
- **Metasomatic Sulphide Massif Deposits**, as: Kurbneshi, Golaj, Thirra, Nikoliqi, etc.
Based on the data of the Geologic Survey, the geological reserves of copper ores in Albania are calculated about 53 million tons of the categories B, $C_1$, $C_2$ and prognosis categories, from which about 27 million tons are extractable reserves, approximately in 50 deposits.

**The most important copper mining deposits:**

- Munella Deposit,
- Lak Roshi Deposit,
- Karma Deposit,
- Perlati South Deposit,
- Spaçi Deposit,
- Bregu Geshtenjes Deposit.

Geologic reserves in new deposits are about 13,4 million tons of 1.853% Cu, which represents about 50% of total reserves, from which 8 million tons (about 30% of total and 60% of new deposits) are located in Munella deposit.
Fe-Ni and Ni-Si minerals, are located mainly in three regions:

- Devolli (Bilishti, Bitincka, etc).
- Pogradec-Librazhd (Guri Kuq, Cervenaka, etc.), (Prrenjasi, Skroska, Xixillasi, Bushtrica).
- Kukes (Mamez, Trull Surroj, Nome)

The nickel ore is in form of iron-nickel (Pogradec, Librazhd) of a grade of 0.8-1.1 % Ni and in form of nickel-silicate (Devoll, Kukes) of a grade of 1.1–1.4 % Ni.
### NICKEL MINERAL RESERVES ACCORDING TO THE REGIONS

<table>
<thead>
<tr>
<th>No.</th>
<th>Region</th>
<th>Quantity 000/ton</th>
<th>Fe%</th>
<th>Ni %</th>
<th>SiO₂%</th>
<th>Co %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Devolli</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Total Ni-Si</td>
<td>52 179</td>
<td>16.60</td>
<td>1.20</td>
<td>35.12</td>
<td>0.0397</td>
</tr>
<tr>
<td></td>
<td>Total Fe-Ni</td>
<td>59 193</td>
<td>38.66</td>
<td>1.074</td>
<td>12.2</td>
<td>0.056</td>
</tr>
<tr>
<td>2.</td>
<td>Kukësi</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Ni-Si</td>
<td>29 221</td>
<td>21.73</td>
<td>1.057</td>
<td>40.12</td>
<td>0.053</td>
</tr>
<tr>
<td></td>
<td>Total Fe-Ni</td>
<td>65 504</td>
<td>37.22</td>
<td>1.029</td>
<td>26.93</td>
<td>0.0547</td>
</tr>
<tr>
<td>3.</td>
<td>Librazhd-Pogradec</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fe-Ni</td>
<td>105 592</td>
<td>44.72</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Fe-Ni</td>
<td>230 000</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Total Ni-Si</td>
<td>81 400</td>
<td></td>
<td></td>
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</tbody>
</table>
COAL

The coal reserves in our country are approximately 794 million tons, located in three main regions:

- **Tirana region**: 86% of reserves
- **Korça-Pogradec region**: 10% of reserves
- **Memaliaj region**: 4% of reserves

Coals, generally, are of lignite type, with calorific analytical value of 2000-5600 kcal/kg (averagely 3200-3300).

Their calorific value in concentrates up to 4500-5500 kcal/kg.
PEATS

Peats is another energy source, located in the deposit of Maliq. The reserves are 150 million m³, with 2200 kcal/kg. The peats could be used as fuel but also as complex fertilizer in the agriculture.

The characteristics of the peats:
- Calorific value: 2960 kcal/kg
- Moisture: 11%
- Volatiles: 39%
- Sulphur content: 1.1%

BITUMEN AND OTHERS

Natural bitumen of high content is located in the Selenica deposit, in Vlora district. The amount of geologic reserves for Selenica deposit is calculated to be about 520 000 tons.

Bituminous coal, is found together with the natural bitumen in the Selenica deposit. The reserves, according to geological workings carried out, are about 3-4 million tons.

Bituminous sands (tar sands), are located in Patosi, Treblova-Selenica, Selishta, Kucova, Murrizi, Kreshpan, Belishova, Greshica, Makareshti, Thuman-Miloti, deposits. The reserves of bituminous sands are about 246 million tons.
Albania is a rich country on the industrial minerals (non-metalliferous). They constitute a great wealth of the country.

Each non-metalliferous mineral has its particular importance. The most important minerals are:

limestones and dolomites, clays, gypsums and anhydrites, all types of decorative stones, basalts, etc., including and olivinites, kaolins, volcanic glass, granites, phosphorites, etc.
# Non-Metalliferous Minerals Deposits

<table>
<thead>
<tr>
<th>No.</th>
<th>Minerals</th>
<th>Geologic Reserves</th>
<th>Region and deposit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Quantity, Million</td>
<td>Quality, %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tons</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.3</td>
<td>Carbonatic Decorative Stones</td>
<td>700</td>
<td>CaO 50</td>
</tr>
<tr>
<td>II</td>
<td>Phosphorites</td>
<td>57</td>
<td>P$_2$O$_5$ 10-15</td>
</tr>
<tr>
<td>III</td>
<td>Clays</td>
<td>262</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Silica Sands &amp; Quartzites</td>
<td>200</td>
<td>SiO$_2$ 80, Al$_2$O$_3$ 10, Fe$_2$O$_3$ 15</td>
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</tr>
<tr>
<td>V</td>
<td>Gypsum &amp; Anhydrites</td>
<td>85</td>
<td>CaSO(_4)2H(_2)O</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>88-98</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI</td>
<td>Rock Salt</td>
<td>300</td>
<td>NaCl  76-82</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII</td>
<td>River-bed Aggregates</td>
<td>242</td>
<td></td>
</tr>
<tr>
<td>VIII.1</td>
<td>Olivinites</td>
<td>108</td>
<td>MgO  48 SiO(_2) 37</td>
</tr>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>VIII.2</td>
<td>Volcanic Glass</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>VIII.3</td>
<td>Magnesites</td>
<td>1</td>
<td></td>
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<td></td>
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<tr>
<td>VIII.4</td>
<td>Granites</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>VIII.5</td>
<td>Ophiolite</td>
<td>230</td>
<td>SiO(_2) 37-38 MgO 8-47</td>
</tr>
<tr>
<td>Decorative Stones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIII.6</td>
<td>Basalts</td>
<td>1 064</td>
<td>SiO(_2) 47 Al(_2)O(_3) 13</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>
MAIN DIRECTIONS OF MINING INDUSTRY DEVELOPMENT

• The growth of production of traditional minerals as chrome, copper, nickel and energetic minerals, accompanied with a long-term programme for the development of prospection-exploration geologic workings;

• Increase of the processing degree of chrome and copper ores to increase their values and to make them more competitive and supplier of domestic and foreign market;

• Extension of the production and deep processing sorts of energetic minerals as, tar sands, peats, high quality and competitive mining cost, etc.;

• Extension of the production and processing sorts of olivinates, basalts, decorative stones, marbles, etc.;

• Putting into economic circulation (operation) of the vanadium-bearing potential.
LEGAL FRAMEWORK

- The mining activity is performed in accordance with the requirements of “the Mining Law of Albania” No.7796, dt. 17.02.1994, amended by Law No.9261, dt. 22.07.2004 and Law No.9667, dt. 29.12.2007.

- The use of any kind of explosive material during the mining activity, is performed in accordance with the requirements of Law No.9126, dt. 29.07.2003 “For civil using of explosives in the Republic of Albania”, the Decision of Council of Ministers No.52, dt. 29.01.2004 and the Order No.1, dt. 12.02.2004 of the Minister of Economy, Trade and Energy.

- Any kind of mining activity related to engineering, assessment, consulting, monitoring, technical supervision etc. is conducted through a Professional Permit.
THANK YOU FOR YOUR ATTENTION

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