MINERAL POTENTIAL OF ALGERIA
I - INTRODUCTION

Among the many advantages of Algeria:

✓ Geological and mineral potential: rich and various,

✓ Country: vast and underexplored,

✓ A mining law: competitive and incentive,

✓ Geological infrastructure: developed and of quality,

✓ Economic infrastructure: important and diversified,

✓ A workforce: qualified and cheap.
II. MAIN FIELDS

[Map showing various geological formations and regions such as Hauts Plateaux, Atlas Saharien, Plateforme Saharienne, Bassin de Tindouf, Socle Eglab, Tassili, Massif du Hoggar, etc.]
III. GEOLOGICAL INFRASTRUCTURE

1. Geological mapping:
   - 140 maps at 1/200 000 mountainous Hoggar and Eglab that to say 700 000 km².
   - 33 synthesis maps: 1/500 000
   - 132 maps at 1/50 000 to the north that to say 350 000 km².

2. Geophisical surveys: mag+spectro
   - SCALE: 1/200 000 and 1/500 000.
3. Mineral Inventory:
- identified gites, deposits and indices:
  >100 gites and deposits,
  >50 mining districts,
  >3,500 mineralized occurrences.
- numerous studies and syntheses:
  metallogenic, geophysical, geological (2,500 reports)
- publishing booklets, catalogs SUNM for all regions of the country (48)
4. Map of the main deposits
The Metallogenic analysis of various geological environments show that they are potential for the discovery of following mineralization:

1. Precious metals: gold, silver;
2. Precious and semi-precious: diamond, topaz, beryl ...
3. Basic metals: zinc, lead, copper;
4. Ferrous and non-ferrous metals: iron, manganese ...
5. platinum group elements (PGE): platinum, palladium, iridium;
6. Precious metals: tantalum, niobium, beryllium;
7. Rare Earth (REE);
8. Industrial minerals: phosphate, barite, bentonite, diatomaceous earth, ...
1. Tellian CHAIN

- > 3 000 mineralized occurrences
- > 30 mineralized districts: Pb-Zn, Cu, Au, Fe, Hg, Sb, phosphates, barite, bentonite ...

- discovered gites and deposits:
  - O. El Kebir (Pb-Zn-Cu),
  - Boussoufa (Cu),
  - O. Amizour (Zn-Pb), Fendek (Hg),
  - Beni Mansour (SrSO$_4$),
  - Koudiat Safia (BaSO$_4$),
  - Hammam N’bails (Sb) ...
Phosphate: Sea Sedimentary

Iron: Sedimentary, Skarn

Polymetals: VMS, MVT, Sedex, Filons

Or: VMS, Porphyry, Placer

Barite: Filons, conformité, VMS

copper: Filons, VMS, Red bed

Wolfram-Tin: Skarn, greisen

Sb-Zn-Pb: Filons,

Brimstone: Sedimentary, VMS

Mercury: S/Chvt, Filons

Heavy mineral: Placer
2. Mountainious EGLAB and OUGARTA

MOUNTAINIOUS EGLAB AND ITS COVER, CHAIN OF OUGARTA, SEDIMENTARY BASIN.

- > 500 occurrences
- > 10 mineralized districts:
  Diamond, Au, Cu, Mo, Coal, REE
  Iron, barite, Sands.

- Discovered Gites and deposits:
  - Gara Djebilet (Fe),
  - Mechri Abdelaziz (Fe),
  - Guettara (Mn)
  - Draissa (Barytine)...

DIRECTORATE GENERAL OF MINES / MINISTRY OF INDUSTRY AND MINES (Year 2015)
<table>
<thead>
<tr>
<th>Age</th>
<th>Colonne</th>
<th>Lithologie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paléozoique</td>
<td></td>
<td>conglomerats, tillites, grès, argiles</td>
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<tr>
<td>Néoproterozoïque</td>
<td></td>
<td>calcaire à stromatolites, grès</td>
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<tr>
<td></td>
<td></td>
<td>Conglomérats, grès, grossiers, argiles</td>
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<tr>
<td></td>
<td></td>
<td>Ignimbrite, Rhyolite, rhyodacite</td>
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<tr>
<td></td>
<td></td>
<td>conglomerats, arkose, tuf grauwacke, argile, basalte, andésite, dacite, rhyolite</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Série détritique</td>
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<td></td>
<td></td>
<td>Gneiss, migmatite, amphibolite</td>
</tr>
<tr>
<td>Archéen</td>
<td></td>
<td>Nouveaux Archéen?</td>
</tr>
</tbody>
</table>

- **iron**: Sedimentary, Placer
- **Au**: shear zone, Filons, Placer
- **Diamond**: primary, secondary
- **Heavy minerals**: Placer
- **platinoids, Ni-Cu, Cr-Co**: Bushveld Norilsk
- **copper**: volcanogenic, porphyry
- **molybdenum**: Porphyry
CHAIN OF OUGARTA

- **copper**: VMS, Red bed, Filons
- **Heavy minerals**: Placer, sedimentary
- **manganese**: Volcanogène, Sédimentaire
- **Diamant**: Primary, secondary
- **Zn-Pb-Ba**: Filons
- **barite**: Filons

DIRECTORATE GENERAL OF MINES - MINISTRY OF INDUSTRY AND MINES (Jan 2015)
3. mountainious HOGGAR

BOUCLIER TOUAREG and its covert,
SERIES VOLCANO-SEDIMENTARY,
MOLE ARCHEEN IN OUZAL, SHEAR ZONES ...

- > 2000 occurrences
- > 20 Mines districts:
  - Or, Wolfram, Tantalum, Uranium ...
- Discovered deposits:
  - Tirek and Amessmessa (Au),
  - Tiririne - Hanane (Au),
  - Nahda and Bachir (W),
  - Tin Amzi –El Karoussa (Sn-W)
  - Timgaouine-Abankor (U),
  - Ebelekan (Ta-Nb) …….
Mountainious HOGGAR

- Or : VMS, shear zone, Filon, Placer
- Copper-or : VMS, Filon
- Wolfram-tin: Skarn, Greisen
- Uranium : Sedimentary, Filon, unconformity
- Métaux Rares : Pegmatites, Carbonatites
- Platinoides, Ni-Cu, Cr-Co : Bushveld, Norilsk
- Graphite : Skarn
- Diamond: Primary, secondary
- Heavy minerals : Placer
V - SITUATION OF MINES FIELD (2014)

30 Commercial products,
1900 Mining permits,
1370 Mining activity (80% private)
$ 103 Mln US exports
$ 245 Mln US imports
36 Mining titles in partnership,
12 Mln US $ / year mining research of the State.
### VI. Mining production (2013/2014)

<table>
<thead>
<tr>
<th>Substances</th>
<th>2013</th>
<th>2014</th>
<th>Exploitations</th>
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</thead>
<tbody>
<tr>
<td>Iron (t)</td>
<td>1,066,000</td>
<td>900,000</td>
<td>6</td>
</tr>
<tr>
<td>Phosphates (t)</td>
<td>1,150,000</td>
<td>1,400,000</td>
<td>1</td>
</tr>
<tr>
<td>Or (kg)</td>
<td>140</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td>27</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>Salt (t)</td>
<td>172,900</td>
<td>193,000</td>
<td>13</td>
</tr>
<tr>
<td>Barite (t)</td>
<td>30,250</td>
<td>56,800</td>
<td>5</td>
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<tr>
<td>Bentonite (t)</td>
<td>27,700</td>
<td>31,500</td>
<td>0</td>
</tr>
<tr>
<td>Kaolin (t)</td>
<td>42,500</td>
<td>181,000</td>
<td>2</td>
</tr>
<tr>
<td>Sand (t)</td>
<td>15,472,000</td>
<td>17,550,000</td>
<td>113</td>
</tr>
<tr>
<td>Marble (blocs) (m³)</td>
<td>18,000</td>
<td>32,000</td>
<td>16</td>
</tr>
<tr>
<td>Aggregates (m³)</td>
<td>42,000,000</td>
<td>60,000,000</td>
<td>912</td>
</tr>
<tr>
<td>Limestone / cement (t)</td>
<td>21,932,000</td>
<td>24,800,000</td>
<td>21</td>
</tr>
</tbody>
</table>
VII - Mining policy
Ministry of industry and mines

To develop the Algerian mining sector and enable it to play a more substantial role in economic and social development of the country at the height of its geological and mineral potential, the Ministry of Industry and Mines (MIM) decided to mobilize the necessary resources and means to achieve namely:
✓ Valorization all mineral resources in a sustainable development perspective,

✓ Encouragement of partnership in mining investment,

✓ Development of large projects of Gara Djebilet Iron and transformation of phosphates, salt, marble, ... polymetal.

✓ The increase in production of under-exploited mineral resources,

✓ Development of mining industry performance processing,

✓ Satisfying the needs of the national economy by exporting minerals and the generated surpluses,

✓ Capacity building and modernization of public enterprises production tools,

✓ Mine staff training at the Algerian Institute of Mines and the Ecole des Métiers from El Abed Mine.
The expected outcomes of the increased investment in mining will allow during:

1. Research stage:
   - Discovery of new deposits,
   - Discovery of new mineral substances,
   - Deepening of knowledge of soil and subsoil.

2. the Exploitation stage:
   - Satisfy the demand of the national economy,
   - Participate in regional economic development,
     - Export the surplus,
     - Create jobs.