

## OUTLINES OF IRAQ MINERAL AND MINING STRATEGY: A PROPOSAL FOR DISCUSSION <sup>∇</sup>

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### BASIC INFORMATION

- Iraq is rich in mineral resources and industrial rocks, discovered and assessed over half a century of geological exploration works.
- Iraqi native sulfur deposits are the largest in the world and the Iraqi phosphorite deposits come second after Morocco.
- Large deposits of silica sand, kaolin, limestone, bentonite and construction raw materials have been discovered and partly exploited.
- Metallic mineral deposits and occurrences are restricted to the Kurdistan Region including Zn, Pb, Cu, Cr – Ni and Fe. None of which have been exploited.

### SYSTEM TARGETS

- To put a strategic framework for the mineral and mining sector that enables development and growth to support the National economy with new sources.
- To define the necessary steps and measures to ensure a healthy and encouraging investment environment in this sector.
- To stress on the importance of geological survey and mineral exploration in the development of the mineral resources of Iraq.
- To stress on the importance of scientific research and technology in the development of human resources.
- To stress on the principle that investment in mineral resources is an integrated effort of the state represented by federal and local governments from one side and governments versus parliament from the other side.

### STRATEGIC DIAGNOSIS

- Over more than half a century of geological exploration, financed by Iraqi government, the main mineral resources of Iraq have been defined and assessed.

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- At the present time, mineral investment is governed in Iraq by the old legislation (Law no. 91 for the year 1988). This law stresses the control of the state on the investment and does not encourage private sector involvement.
- Several State owned companies are involved in the mineral industry such as: sulfur, phosphates, kaolin and glass-sand (for glass, ceramics and refractories), limestone (for cement), and bentonite.
- The private sector, controlled by local Iraqi investors, is active in quarry extraction of building raw materials.
- Iraq Geological Survey is the authority (by law) to license mineral investment projects.
- The available mineral resources are much larger than exploitation rates.
- Iraqi and non – Iraqi investors in mining face serious problems related to procedures, bureaucracy, legislations, among other obstacles.

### **SUMMARY OF MINERAL RESOURCES OF IRAQ**

<b>Commodity</b>	<b>Reserve/Resource</b>	<b>Established industries</b>
Native sulfur	600 m.t.	Fertilizers & native S
Phosphate	9500 m.t.	Fertilizers
Silica sand	7000 m.t.	Glass, ceramic, refractories
Kaolin	1150 m.t.	Ceramics & refractories
Bentonite	385 m.t.	Drilling fluids
Iron	80 m.t.	Cement
Limestone	9500 m.t.	Cement
Glauberite	35 m.t.	Sodium sulfate
Bauxite	1.2 m.t.	Refractories
Flint clay	9 m.t.	Refractories, cement
Feldspathic sand	3.2 m.t.	Ceramics
Salt (NaCl)	43 m.t.	Chemical industries
Gypsum	195 m.t.	Plaster
Dolomite	675 m.t.	Building stone
Recent clay	685 m.m <sup>3</sup>	Bricks
Gravel & sand	1630 m.m <sup>3</sup>	Construction
Zn – Pb	2.7 m.t.	Non

### **SWAT ANALYSIS**

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## STRENGTH

- Availability of large mineral resources and industrial rocks of various industrial applications.
- Availability of geological information on Iraqi mineral resources as digital maps, reports and data bases.
- Availability of standardized geochemical and mineralogical laboratories at Iraq Geological Survey.
- Availability of high standard Iraqi geological authority to carry out further exploration.
- The Iraqi Federal Government and Parliament support the development of the mining sector in Iraq.

## WEAKNESS

- Mineral industry in Iraq has significantly slowed down over the past decade and does not represent a significant contribution to the National economy.
- Licensing is a time consuming and complicated process.
- Unavailability of clear government policy and work procedures in the mining investment process.
- The government has stopped investing in the mining sector.
- Unavailability of important infrastructures vital for promoting investments (energy, transport, water).
- Unavailability of some important local expertise in the business, such as mining engineers and mining geologists.
- The banking system in Iraq is out – of – date.

## OPPORTUNITIES

- Several mineral deposits are ready for exploitation, including:-
  - Phosphates / Anbar
  - Native sulfur / Ninava
  - Limestone / Anbar, Najaf and Muthana
  - Kaolin / Anbar
  - Silica – sand / Anbar
  - Bentonite / Anbar
  - Glauberite / Salahudin

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- Many other mineral resources can be upgraded to reserves.
- There is an encouraging potential to discover new mineral deposits.
- Local market demand for minerals – based commodities is great, with a bright opportunity for export, especially for phosphate fertilizers, cement, native sulfur, sodium sulfate, soda ash, etc.

## THREATS

- Unstable security situation in many mineral – producing regions.
- Conflicts between Federal and Local governments over the authority of licensing and ownership of the mineral deposits.
- Serious environmental risks associated with mining of some deposits, such as native sulfur.
- Social impact problems in the mining areas need to be studied and resolved.
- Weakness of Iraqi legislations that protect capital investment and insurance of investment project

## STRATEGIC PATH AND POLICIES

- **SHORT TERM** (3 years) – Institutional building.
  - Adopt legislations and policies attracting investment in the minerals sector.
  - Establish Iraq Mineral Council by law.
  - Activate the integration role between Federal and Local Governments in mineral investment and allocate the major part of the revenues to Local Governments.
  - Adopt clear and well – defined work procedures dealing with investors that minimize routine and create an encouraging investment environment.
  - Enable the private sector to lead the work in the mineral sector.
  - Upgrade norms and work procedures to fit world best practice.
  - Finance geological survey and mineral exploration carried out by Iraq Geological Survey from the Federal Investment budget.
  - Restructuring and rehabilitation of SOE's involved in mining and mineral industry.

- Upgrade higher education and scientific research in mining and mineral processing.
- Upgrade procedures of documentation and publishing of information on Iraq mineral resources using modern technology.
- Comprehensive study of obstacles hindering investment in mineral industry in Iraq.
  
- **MEDIUM TERM (5 years)** – Expansion of investment in the minerals sector.
  - Support Iraq Geological Survey to lead exploration and development projects with remarkable role for the private sector in this respect.
  - Strengthen Iraq Geological Survey branches in the mineral – producing governorates.
  - Improve the standard of living in the mining areas by creating new jobs and developing infrastructures.
  - Encourage clustering in mineral industry to improve competitiveness and value added chains.
  - Open new mines and find new reserves of mineral deposits in collaboration with private sector by joint venture projects with the SOE's.
  - Federal and local governments improving infrastructures necessary for mining industry in the mining areas in partnership with private sector.
  - Emphasis on mineral industries that is compatible with the available mineral resources such as phosphate fertilizers, construction materials, silicon industries and chemical industries in general.
  - Upgrade products specifications to ensure world market competitiveness.
  - Remarkable growth of the local governments role in attracting investments in the minerals sector.
  - Development of the private sector to be a key player in enhancing the economic value of the mineral industry.
  
- **LONG TERM (7 years)** – Sustainable and competitive growth of the mineral industry.
  - Achieve sustainable and environment – friendly growth of the Iraqi mineral sector with effective role for the private sector.

- Achieve significant contribution of the mineral industry in the National income and attain social prosperity in remote mining areas.
- Create scientific and professional base specialized in mining and related field.
- Invade international markets by exports of minerals – based products.
- Develop social understanding of the mining industry and its benefits to local communities.
- Licensed mines working at their designed capacity.
- Develop mining areas in the desert into green populated spots.
- Employ an effective monitoring system of mining operations capable of achieving integrity, environment protection and responsible exploitation of Iraqi mineral resources.
- Build up of sound research platform in mining capable of development & technology upgrade

### STRATEGIC PRODUCTION TARGETS\*

	2012**	Short Term	Medium Term	Long Term	Industry
Phosphate	0.25	5	13	25	Fertilizers
Sulfur	---	2	4	10	Chemical industries
Limestone	4.6	20	30	50	Cement
Silica – sand	1440 ton	0.5	1.0	3	Silicon industries, Glass & ceramics
Kaolin	---	0.2	0.5	3	Alumina production and ceramics
Bentonite	1000 ton	0.1	0.3	0.8	Drilling mud
Salt	0.14	0.3	0.8	3	Petrochemicals, Food, Drilling & Textile
Gypsum	11.8	15	20	30	Plaster
Iron	0.01	0.1	0.3	0.5	Cement
Brick clay	13.9	20	30	50	Building bricks
Gravel & sand	9.3	20	30	50	Building materials

\*All figures are in million tons, except brick – clay and gravel & sand in million m<sup>3</sup>, or where specified otherwise. \*\*Actual production in 2012,

## INSTITUTIONAL DEVELOPMENT AND GOVERNANCE

- **Legislative authorities (Parliament and Local authorities).**
  - Amendments in the Iraqi constitution to include mineral resources. .
  - Legislation of a new mining law to cover all aspects of mineral investment.
  - Monitoring of all mining activities.
- **Federal Government (Cabinet of Ministers).**
  - Adopt a long-term mineral and mining strategy.
  - Support the mining sector with necessary infrastructures.
- **Ministry of Industry & Minerals.**
  - Prepare economic feasibility studies for each mining project.
  - Monitor mining projects together with Iraq Geological Survey.
  - Coordinate with Local Governments and investment authorities in Iraq.
- **Iraq Geological Survey**
  - Provide necessary information available for each mineral deposit and for mineral resources of Iraq including maps, drilling logs, analysis, reserve estimation, etc.
  - Monitor mineral investment (mining) projects.
  - Carryout detailed mineral exploration and reserve estimation for potential mining investment projects.
  - Prepare preliminary feasibility studies for potential mineral deposits.
  - Contribute to the formulation of mineral strategies & work procedures.
  - Coordinate with universities and research centers in mineral exploitation fields.
  - Upgrade mineral exploration and reserve estimation procedures to meet international best practices.
- **Private sector**
  - Guarantee world best practice and professional work in mining operations.
  - Guarantee integrity at all stages of work.
  - Protect the environment and social framework in mining areas.
  - Rehabilitation of mining areas and develop local infrastructures.
  - Upgrade product specification to meet international market standards.

- Feed back of all geological and mining information periodically to Iraq Geological Survey.
- Follow laws and legislations related to mining.
- **Ministry of Higher Education and Scientific Research.**
- Support technological research in various mining fields.
- Open new colleges and departments specialized in mining engineering, mineral processing and mining geology.
- Adopt applied research fields in postgraduate studies related to mining.
- Coordinate with Iraq Geological Survey and international research institutes to upgrade the state of the art in mining practice.

### **IMPLEMENTATION AND MONITORING**

- Implementation of the strategy is an interactive process.
- The strategy is subject of modification during implementation.
- The following partners take part in the implementation, governance and monitoring of the strategy and may suggest modifications.
  - Ministry of Industry and Minerals
  - Iraq Geological Survey.
  - Mineral – producing SOE's
  - Local governments.
  - Transparency Organization for Extractive Industries.
  - Ministry of Environment
  - Ministry of Higher Education & Scientific Research.
  - National Investment Commission.
  - Private sector involved in mining and mineral industry.

### **STRATEGIC VISION STATEMENT**

Iraq is to be a competitive regional player in the mineral and mining industry which is to be a major contributor for industrial development, satisfy local market demand, create important work opportunities and develop infrastructures and social communities in remote regions of Iraq that enhance green and sustainable development of the country.