

## Greek National Policy for the exploitation of Mineral Resources

*Greek Ministry of Environment, Energy and Climate Change (YPEKA)*

*General Secretariat for Energy and Climate Change*

*Mineral & Aggregate Resources Division, Athens, Greece, [www.latomet.gr](http://www.latomet.gr)*

### ABSTRACT

Mineral products are essential to modern societies. The process of producing, using, and recycling minerals is a necessary activity for meeting market demand while at the same time contributing to employment and local economic development in both industrialised and less developed national economies.

The Greek extractive industry is an important sector of our country's economic activity providing the necessary raw materials to a number of fields that are essential for the national economy, such as power generation, cement and aluminium industry, constructions and construction materials industry etc. Also, it is a dynamic sector of the economy since its exports account for 65% of its total sales, both at the EU and the international market.

The sustainability of the minerals industry rests on three pillars: economy, environment, and society's needs. In addition, it is becoming clear that for enhancing sustainability, a fourth pillar is also required which will promote the balance and holistic integration of all three aspects: good governance. What is needed is a clear, structured national policy for the exploitation of the mineral resources that will ensure the accessibility to raw materials while at the same time satisfy the need for protection of the environment and other social and cultural values, thus making it possible to ensure the basic principles of sustainable development.

In this context, the State in collaboration with all stakeholders has developed the main axes, directions, policies and the specific actions required for the sustainable exploitation of the mineral resources in order to respond to modern

needs incorporating at the same time the context of European integration initiative on raw materials (RMI). This basic framework of the National Policy (NP) for the Strategic Planning and Exploitation of Mineral Resources was announced by the Greek Ministry of Environment and Climate Change (YPEKA) in 2012 and is presented below.

### 1. BACKGROUND/OBJECTIVES

The National Policy (NP) acknowledges the importance of the Mineral Raw Materials (MRM) that contribute to progress and development, ensure a high living standard and create a competitive national and regional economy and new job positions. The NP must also ensure that the MRM are produced and distributed to the society in conformity with the constitutional principle of sustainable development.

The NP must be stable and transparent; it must also be able to adjust depending on the social and economic conditions or with a view of protecting the natural and anthropogenic environment.

Moreover, it must also be in harmony with the other National Policies, mitigating the conflicts that hinder the growth of the National Economy. Such a policy and all its different aspects of implementation can only be the outcome of a wide dialogue, information and public consultation both at national, regional and local level. Additionally, this policy requires -as a basic tool- a simplified, codified and updated regulatory framework.

*The main goals of this NP are the following:*

- The sufficient and constant supply of MRM to the society in a sustainable financial way that is harmonized with the national sectoral development policies of other activities.
- The enhancement and implementation of the best practices that prevent or reduce and, finally, rehabilitate, to the greatest extent possible, the impact of the extractive industry to the environment and human health.
- The MRM saving through best eco-efficient production practices.
- The upgrade and support of all University departments and faculties of geosciences through the adequate funding by all types of available programs of the Ministry of Education, the General Secretariat of R&D, the National Strategic Reference Framework (NSRF), etc.
- The ensuring of the use of MRM for the longest possible time through effective use practices, extension of their life-cycle and recycling.
- The maximization of the development benefit and minimization of the negative effects of the mining activity.
- The harmonization of the specificities and needs of the local societies with the development potential created by the mining activities at local and regional level. The adoption of policies and measures that shall maximize the benefits from the actions at local level in many ways (and not merely in terms of finance and employment).
- The arrangement of the quarry and mining sites in such a way as they may be suitable for other planned uses after the completion of the extractive activities.
- The land use planning for the raw materials processing, when it is carried out outside the mines or quarries.

*Also, the NP for the exploitation of the MRM must:*

- Be based on the knowledge about the country's mineral reserves. This knowledge pre-

supposes that all deposits of MRM are registered in a documented way and the relevant data are available in functional geospatial information system, which is compatible with the European MRM geological database.

- Take into account the specificities of the mining activity affecting decisively the location and the “sustainable” management of the activity requiring special interventions stemming from a) their localization in positions chosen by Nature itself b) the fact that the MRM are only ‘renewable’ at a geologic time scale and c) the fact that the exploitation of MRM leads to a visible footprint whose environmental impact must be minimized.
- Take into account that the mining industry is vulnerable and inextricably linked to the national and international economic and political conditions and thus take into consideration the trends and variations of the international market of raw materials.
- Follow the European developments on issues related to the orientations and conditions of the MRM strategic development.
- Develop reliable and adequate conditions for attracting investments aimed to the best exploitation of the country's mineral resources.

#### ACKNOWLEDGEMENTS

This work was developed by an ad hoc working group aiming at the implementation of the European Raw Materials Initiative (RMI) in the Greek MRM policy. The working group was comprised by both a) Ministry executives and b) Executives of productive, professional and scientific bodies (Greek Mining Enterprises Association, Institute of Geology - Mineral Exploration and Survey, Technical Chamber of Greece and Geo-Technical Chamber of Greece).

This paper was prepared by P.G. Tzeferis, Ph.D, Marble and Aggregate Quarries Division (YPEKA), Greece, [tzeferisp@eka.ypeka.gr](mailto:tzeferisp@eka.ypeka.gr)

## NATIONAL POLICY FOR THE EXPLOITATION OF MINERAL RESOURCES

It must ensure that the supply of mineral raw materials to the society will be done in a sustainable financial way, which is in harmony with the national development policies of other sectors, the protection of the environment and the principles of sustainable development.

### ESSENTIAL PREREQUISITE:

Establishing the necessary regulatory framework through a wide dialogue, information and consultation among all stakeholders and securing its implementation over time in a consistent, transparent and uniform way.

MAIN POLICY AXES	REQUIRED POLICIES & ACTIONS	ACTIONS SPECIFICATION
<p><b>1. The national policy about the Mineral Resources as a basic component of the national and regional development policy of the Country.</b></p>	<ul style="list-style-type: none"> <li>- Integrating the guidelines of the national policy for the exploitation of mineral resources horizontally into all individual policies and plans in order to ensure the optimal exploitation of the deposits and the common interest.</li> <li>- Establishment of a Forum for the Implementation of the National Policy for the Exploitation of Mineral Resources.</li> </ul>	<ul style="list-style-type: none"> <li>- Ensuring the exploitation of the MRM deposits potential through the proper interventions in the legal framework.</li> <li>- Providing MRM research oriented incentives to the enterprises.</li> <li>- Enhancing the existing state research institutes on MRM-related issues.</li> <li>- Re-evaluating the state owned mining areas through complementary exploration where needed, and then auctioning them to ensure their optimal exploitation for the benefit of the common interest.</li> </ul>
<p><b>2. Adequate land-use planning that shall ensure the possibility of access to the MRM deposits and contribute to the resolution of issues related to competition of different land uses.</b></p>	<ul style="list-style-type: none"> <li>- Integrating the national policy of MRM into the land-use planning policy of the country in order to strike a balance between:                             <ul style="list-style-type: none"> <li>- A sustainable supply of the necessary mineral raw materials</li> <li>- Economic development</li> <li>- Social environment</li> <li>- Natural environment</li> <li>- Competitive land uses.</li> </ul> </li> <li>- The adequate land-use planning in order to ensure the possibility of exploiting the MRM deposits in the long term while providing accessibility to them.</li> </ul>	<ul style="list-style-type: none"> <li>- Mapping and registering the regions with exploitation of deposits of mineral raw materials in the land-use planning and adoption of measures (recognition of requirements to be met) to ensure the long-term continuation of their exploitation.</li> <li>- The land-use planning must also take into account any deposits that have identified but are not yet exploited in order to prevent, to the greatest extent possible, their potential “sterilization” due to the establishment of competitive land uses or the construction of infrastructure works.</li> <li>- Development of an updated GIS database of digital spatial data which, alongside its other uses, will include</li> </ul>

	<ul style="list-style-type: none"> <li>- The specificity of the mining industry, which, unlike other activities, is inextricably linked to the locations where nature has created the mining deposits and the fulfillment of the spatial requirements for carrying out the mining activities and the transportation of products (e.g. access to sea transportation), must be taken seriously into account at the land-use planning.</li> <li>- To provide for processes of land-use changes, when necessary, with a view to harnessing new deposits of mineral raw materials that had not been identified and, therefore, had not been taken into consideration during the previous phases of land-use planning.</li> </ul>	<ul style="list-style-type: none"> <li>geological and mineralogical data, established zones for extractive activities, aggregate quarrying areas, possible Organized Development Areas for Productive Activities of mining and quarry activities, other existing areas with extractive activities.</li> <li>- Review of Regional Land-Use Planning Frameworks taking into account the priorities of the national policy on MRM.</li> <li>- Updating the management studies about the protected areas in the light of the new developments in the relevant legislation and the guidelines of the EU on the possibility of establishing mining activities in NATURA 2000 areas. In addition, a more clear delineation of these areas is required.</li> <li>- For the regions with deposits of raw materials that are classified as raw materials of particular importance for the national economy, it is necessary to make a special provision/reference to the spatial/urban plans in order to make sure that the land uses that will be considered during the planning process are compatible with the mining activity.</li> <li>- The land-use planning must provide for the utilization of the mining sites after the end of the mining activity.</li> </ul>
<p><b>3. Codification and modernization of the quarry/mining legislation (licensing system, exploration and exploitation, H&amp;S control, environmental issues, etc.</b></p>	<p>The main features of the licensing regulatory framework shall be as follows:</p> <ul style="list-style-type: none"> <li>- The simplicity, transparency, clarity, stability, understanding of the investment conditions, its uniform application and reasonable time frame for issuing the necessary approvals and licenses.</li> <li>- The promotion - imposition of the implementation of Best Available Techniques exploiting the relevant Eu-</li> </ul>	<ul style="list-style-type: none"> <li>- Reforming the regulatory framework when necessary.</li> <li>- Simplifying the licensing process taking into account the expressed mining policy and the spatial planning.</li> <li>- Updating the standards of the technical and environmental studies based on the modern requirements.</li> <li>- Avoiding overlapping procedures, parallel licensing evaluation in order to speed up the process.</li> <li>- Issuing guiding documents and manuals on the licensing requirements and processes for both interested parties and involved services and agents.</li> </ul>

	<p>ropean experience.</p> <ul style="list-style-type: none"> <li>- Strengthening the role of inspection authorities.</li> <li>- Strict implementation of the recent Regulation on Mining and Quarry Activities.</li> </ul>	<ul style="list-style-type: none"> <li>- A more substantial and effective operation of the inspecting authorities (Mine Inspectorate, Environment inspectors, Greek Institute of Geology, Mineral Exploration and Survey etc.) so as to ensure H&amp;S, rational exploitation, environmental protection and restoration The above bodies must be properly staffed and equipped with the necessary material and technical infrastructure.</li> </ul>
<p><b>3a. Legal framework for the environmental permit.</b></p>	<ul style="list-style-type: none"> <li>- The granting of the environmental permit must be part of and go hand in hand with the mining policy. The following requirements must be met:</li> <li>- The production of the exploitable and necessary MRM must be carried out in conformity with the principles of sustainable development (economic growth, social pillar, environmental requirements).</li> <li>- The environmental permit process must be completed in defined and reasonable periods of time.</li> <li>- An ‘open door’ policy must be adopted towards the local society and other stakeholders.</li> <li>- The public administration must be involved in the environmental permit consultation process in a more substantial and active way.</li> </ul>	<ul style="list-style-type: none"> <li>- Following the issue of Law 4014/11, the regulatory framework for the granting of environmental permits to mining activities should be further specified by means of: <ul style="list-style-type: none"> <li>- Determining the content of the Environmental Impact Assessment (EIA) and setting modern standards for carrying out EIA, which will incorporate all relevant requirements (e.g. waste management plans, Best Available Techniques, ecological evaluation – appropriate assessment - for mining activities in the NATURA 2000 areas etc.).</li> <li>- Defining the content of the file for modifying and renewing the Environmental Approval for mining activities and setting relevant standards.</li> <li>- Clarifying the conditions under which it will be possible to conduct exploration and exploit mineral resources inside the protected areas.</li> <li>- Further specifying the processes with a view to integrating other necessary licenses and approvals into the Environmental Approval Decision.</li> <li>- Substantial control of the compliance with the terms of the environmental approval both during and after the mining activity.</li> <li>- A clear definition of the exploiter’s obligations for the period after the end of the activity (after closure care) and an effective monitoring of their fulfillment.</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>- Establishment of financial guarantees to secure the implementation of the environmental terms.</li> </ul> <p>Also:</p> <ul style="list-style-type: none"> <li>- Diversifying the requirements to be fulfilled for the granting of environmental permits for mining activities provided that a Strategic Environmental Assessment has been carried out previously in the area.</li> <li>- Providing for the potential development of alternative land uses after the end of the mining activity.</li> <li>- Restoring abandoned mining areas or changing their use for the benefit of the local society.</li> <li>- Specifying the provisions of the Presidential Decree on the Environmental Liability in the mining activity.</li> </ul>
<p><b>3b. Legal framework for the exploitation of aggregate quarries.</b></p>	<ul style="list-style-type: none"> <li>- To ensure the long-term supply of aggregates to the market and the construction works at an acceptable transport cost.</li> <li>- Stipulation of a new quarry law.</li> </ul>	<ul style="list-style-type: none"> <li>- Rationalization of the production system (prevention of illegal exploitations). In this regard, the results of the EU SARMa project (Sustainable Aggregate Resources Management) which involves the Greek Institute of Geology, Mineral Exploration and Survey are helpful.</li> <li>- Setting the qualitative standards and certification processes for primary production or recycled aggregates.</li> <li>- Spatial planning regarding the quarrying areas and their operation.</li> <li>- Defining conditions for the operation outside quarrying areas, aggregates for special uses</li> <li>- Setting the requirements for the exploitation of aggregates inside Natura areas.</li> <li>- Lifting the legal restrictions – mostly provisions of Law 998/79 – to allow the establishment of relevant downstream processing units (ready-mixed concrete and asphalt units) in the aggregate quarries.</li> <li>- Modernizing the licensing system – overcoming problems, reducing bu-</li> </ul>

		<p>reaucracy - Offsets for local authorities.</p>
<p><b>4. Promotion of dialogue – Acceptance by the local society.</b></p>	<ul style="list-style-type: none"> <li>- Application in practice of the rules of sustainable development as the only factor that guarantees the on-going operation of the mining works. Implementation of relevant pilot projects.</li> <li>- Obtaining the ‘social approval’ is an important factor for the sound development of the mining activity.</li> <li>- A basic element of the implementation of the N.P. for the exploitation of mineral resources is the promotion of the dialogue and the establishment of a trust-based relation between the State, industry and the social partners (local society, NGOs, consumers, employees etc.).</li> <li>- Organizing an information campaign aiming at raising awareness of the public and reversing the negative climate that has been created in the society for the extractive industry. Parallel undertaking of initiatives by the State and the extractive industry in order to perform pilot actions of exemplary restoration of mining sites which will be given back for use to the local society.</li> <li>- The extroversion, the objective information about the value and utility of the sector and the transparent relations with local communities and agents, are the strongest and most effective tools of such an initiative.</li> </ul>	<ul style="list-style-type: none"> <li>- Promoting Best Available Techniques.</li> <li>- Strengthening voluntary initiatives within the framework of the Corporate Social Responsibility.</li> <li>- Publication of all information about the application of best practices by the mining industry and the competent Departments of the Ministry of Environment, Energy and Climate Change.</li> <li>- Continuous registering of the impact to the local society and full information of the local stakeholders.</li> <li>- Improvement of the urban environment and infrastructure through the allocation of pre-determined financial resources stemming from the exploitation of mineral resources in their region.</li> </ul>

<p><b>5. Education- Research – Innovation</b></p>	<ul style="list-style-type: none"> <li>- Adapting the courses on geosciences to the modern needs of the extractive industry</li> <li>- Satisfying the needs of extractive industry for middle and low level management executives.</li> <li>- Promoting research and innovation on the whole scientific range of the sector (exploration – exploitation – processing – safety – environment restoration etc.).</li> <li>- Continuous training of the active executives of the mining industry and the geo-scientific agents in general aiming at their progressive adaptation and more productive participation in new technological options and challenges.</li> <li>- Reinforcing the teaching of courses on geosciences at the lower and middle level education to help citizens get the necessary information about the importance and the specificities of the MRM.</li> </ul>	<ul style="list-style-type: none"> <li>- Developing modern courses to satisfy the real needs in terms of research and production in such areas as: <ul style="list-style-type: none"> <li>- Innovative processes, automation and optimization of mining and metallurgical processes.</li> <li>- Rational use of materials, energy, water.</li> <li>- Minimization of emissions.</li> <li>- Chemical and biological enrichment methods.</li> <li>- GIS and modeling.</li> <li>- Innovative research technologies for new deposits.</li> <li>- Research and enrichment of minerals containing value-added metals used for high-tech, environmentally friendly applications.</li> <li>- Recycling and new alternative RM.</li> </ul> </li> <li>- Establishment of professional schools for training middle and lower level management executives and specialized employees to satisfy the needs of the mining industry.</li> <li>- Associating the extractive industry with the Research Institutes and Universities.</li> </ul>
<p><b>6. Efficient use of MRM including substitution, reuse, recycling and use of by-products/waste of mining processes, tailings ponds waste and metallurgy waste. The aim is to ensure a rational management and minimization of all mining waste.</b></p>	<ul style="list-style-type: none"> <li>- Completing the legislative framework and incentives about recycling of raw materials and use of by-products and waste.</li> <li>- Promoting research on the substitution of MRM, the more effective use, the study of their life cycle and their recycling.</li> </ul>	<ul style="list-style-type: none"> <li>- Applying the framework for the alternative management of waste from excavations, constructions and demolitions, which is based on the main EU SARMA project.</li> <li>- R&amp;D on the substitution of some “critical” MRM.</li> <li>- Applying life-cycle analyses of mining products or by-products e.g. in the field of aggregates and construction materials.</li> </ul>



<b>THE NATIONAL POLICY MUST BE BASED ON:</b>		
<b>MAIN POLICY AXES</b>	<b>REQUIRED POLICIES &amp; ACTIONS</b>	<b>ACTIONS SPECIFICATION</b>
<b>I. The knowledge about the country's mineralogy potential.</b>	<ul style="list-style-type: none"> <li>- Ensuring that all MRM deposits are registered in a documented way and that all relevant data are available on a functional geospatial information system that is compatible with the European database of geospatial MRM data.</li> <li>- Participating in the development of a European spatial database with relevant data about MRM deposits.</li> <li>- Creating a database of the MRM secondary sources.</li> </ul>	<ul style="list-style-type: none"> <li>- Promoting exploration in order to identify new MRM deposits and especially research to identify MRM declared to be "critical" for Europe or of particular importance for our country.</li> <li>- Implementing research programs about the development and application of new deposit identification techniques (e.g. at big depths).</li> <li>- Searching for and identifying deposits in a submarine metallogenic environment.</li> <li>- Encouraging R&amp;D programs by the private sector in cooperation with educational organizations or institutes.</li> <li>- Reinforcing the deposit research to identify ore bodies at big depths according to the EU ProMine project in which involves the Greek Institute of Geology, Mineral Exploration and Survey.</li> <li>- Reinforcing research for environment-friendly new uses of MRM.</li> </ul>
<b>II. Ensuring and promoting the sustainability of the MRM of particular importance for the Country</b>	<ul style="list-style-type: none"> <li>- Examining the importance of the Greek MRM based on the following criteria:                             <ul style="list-style-type: none"> <li>- Importance at a local, regional or national level</li> <li>- Importance for the Greek industry and constructions</li> <li>- Production</li> <li>- Distribution – Exports</li> <li>- Consumption</li> <li>- Needs and demand</li> <li>- Market trends.</li> </ul> </li> <li>- Creating a database of statistics (Mineral statistics) including all the above data</li> </ul>	<ul style="list-style-type: none"> <li>- Determining the MRM of particular importance for the mining industry of the country and the national economy:                             <ul style="list-style-type: none"> <li>- Lignite</li> <li>- Laterite (Fe-Ni)</li> <li>- Bauxite</li> <li>- Mixed sulphide ores (Pb-Zn-Ag)</li> <li>- Gold</li> <li>- Magnesite</li> <li>- Marble</li> <li>- Bentonite</li> <li>- Perlite</li> </ul> </li> <li>- Conducting a plan for their sustainable development</li> </ul>

	<p>that will constitute a tool for:</p> <ul style="list-style-type: none"> <li>- A better knowledge of the market</li> <li>- Research orientation</li> <li>- Attracting investments</li> <li>- Producing new high value-added products.</li> </ul>	
<p><b>III. On integrating the variations and perspectives of the European and global market of raw materials.</b></p>	<ul style="list-style-type: none"> <li>- Coordination of the General Secretariat of Trade of the Ministry of Regional Development &amp; Competitiveness with the other stakeholders for laying out the national mining policy with regard to the framework of the imports/exports of raw materials.</li> <li>- Continuous communication and coordination of the General Secretariat of Trade with the WTO (World Trading Organization) for actions dealing with the restrictive practices of third countries (non EU).</li> </ul>	<ul style="list-style-type: none"> <li>- Direct and continuous communication with executives of the EU Directorate General for Trade so that information on the developments in these issues must be complete and quick.</li> <li>- Ensuring the information of the Commercial Attachés at the Greek Embassies on issues related to the trade of mineral raw materials and also their contribution to the activities of the EU Directorate General for Trade.</li> <li>- Providing information to the Greek companies that are interested in investing in Third countries about the funding options offered by the Directorate General or other EU bodies.</li> <li>- Setting-up a mechanism for informing the Greek companies about investment funding of European companies in third countries through the European Investment Bank.</li> <li>- Carrying out a detailed study about the origin and the industrial needs met by the importing MRM in Greece as well as the destination and industrial uses of MRM exported to third countries.</li> </ul>
<p><b>IV. Exploiting the country's mining potential with respect to the environment and in compliance with the sustainable development principles.</b></p>		