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# **Minerals Planning Policies and Supply Practices in Europe**

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Commission Enterprise Directorate General  
under Contract n° ETD/FIF 2003 0781

Extended Summary

Department of Mining and Tunnelling  
University of Leoben, Austria  
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## Chapter 1 Background

This study was commissioned by the European Commission Enterprise Directorate General under Contract n° ETD/FIF 2003 0781 in response to a request by the Industry Council and the Commission “to continue to develop measures aiming at the sustainable development of the extractive industries and to promote the exchange of best practices with the candidate countries, which have to rely on these sectors for their economic development”. The Commission also took into account the background of industry views across Europe considering mineral planning policies and practices, which continue to be an increasingly critical issue. Further reasons were the review of minerals planning policies, which has taken place in many Member States in recent years, and which has resulted in adaptations to related permitting procedures. Besides the traditional considerations of the various components of national land use planning priorities, there has also been the effect of recent EU legislation which supersedes some of the national priorities.

This study builds partially on an earlier study entitled “Minerals Planning Policies and Supply Practices in Europe” which was commissioned by the Department of the Environment in London and undertaken by Land Use Consultants during 1994 and published in 1995.

## Chapter 2 Scope and Objective

The main objective of this study was to provide information on the different approaches to mineral planning policies and practices of the Member States. It will identify the differences between the various planning policies and procedures and describe existing links between national systems and European policies and legislation. Best practices (European and international) are highlighted and recommendations are made to address possible deficiencies. It also evaluates the impact of different systems on the competitiveness of the extractive industry.

The study builds as far as possible upon the results of the studies carried out previously by Member States. It focuses on the non-energy extractive sector, but where beneficial to the understanding of the national systems, it also considers possible links and overlaps with land-planning policies and practices relating to the energy minerals sector.

## Chapter 3 Tasks

The study included the following specifications:

1. A description of:
  - The relevant EU legislation which impacts on national minerals planning policies and practices.
  - The national systems for ownership of mineral resources in Member States.
  - The components of existing national legislation, policies and administrative procedures for securing supplies of minerals in Member States.
  - Key features that characterise the current national or regional land use planning systems, and the effect they have on the extractive industry. Non-legislative considerations at state, regional or local level are also considered.
2. An evaluation of:
  - The impact on sustainability of minerals planning policies and related procedures including the impact on the competitiveness of European mining and quarrying industries. In addition, a description is given of the possible results achieved by each system in terms of environmental protection and societal benefits.
3. Consideration of:
  - Best practices for cost effective administrative legislative procedures currently used in the Member States and Candidate Countries; and where relevant, industry practices in countries outside Europe that have comparable concerns.
  - Best practices with regard to policy orientations, legal and administrative systems as well as mechanisms for policy integration. Particular attention is given to innovative, successful elements in the various systems described and studied, as well as to the costs involved in comparison with traditional approaches.

The study was awarded to the Department of Mining and Tunnelling of the University of Leoben in Austria. The University of Leoben assembled a team of mining and minerals experts from different parts of Europe to assist with the study. The approach adopted was to divide Europe into a number of regions based on geographical and language considerations. For each of the regions, a specialist was appointed who had the task to assess the situation in the countries within the region allocated to him. Country reports were prepared using a standard format. These formed the basis of the final report. A three day workshop was held to discuss minerals planning policies in the various Member States<sup>1</sup> and Norway. The group in Leoben used the individual country reports to prepare the final report. Individual discussions with representatives of

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<sup>1</sup> Malta and Cyprus were not included.

government agencies, minerals associations and mining enterprises were held to clarify specific issues. The draft of the final report was made available for comment to members of the Raw Materials Supply Group (RMSG) of DG Enterprise. Comments which were received have been incorporated into the final report. Throughout the study close contact with the DG Enterprise was maintained. The views expressed in this report are those of the authors and do not reflect the position of DG Enterprise. Details of the project team and the task undertaken by them are given in Annex I.



## Chapter 4 The non-energy extractive industry in the EU

The non-energy extractive industry is often considered to be made up of three broad sub-sectors:<sup>2</sup>

- § Construction minerals
- § Industrial (non-construction) minerals
- § Metalliferous minerals.

Within the context of this study *construction minerals* are aggregates (i.e. sand and gravel and crushed rock (limestone, sandstone, igneous rock etc.)), common clay and shale, gypsum, limestone and dolomite, and building stone (dimension stone). This is by far the largest of the three sub-sectors in terms of the tonnage of minerals extracted.<sup>3</sup>

The *industrial minerals* sector provides minerals such as calcium carbonates, dolomite, magnesite, baryte, borates, diatomite, feldspar, fluorspar, graphite, kaolin, mica, plastic clays, bentonite, silica and talk, and salt. It also includes metallic minerals used for non-metallic purposes, such as ilmenite. Some minerals like limestone have multiple uses, i.e. construction mineral, steel-, paper-, glass-, sugar-, production, soil-, and environment protection. The industrial minerals sector produces important raw materials for the chemicals, fertiliser and steel industries, as well as for ceramics, glass, paper, paints and plastics industries.<sup>4</sup> Depending on the application limestone can fall in the sector of construction or industrial minerals.

The EU is a major user of metals, for some, accounting for 25 and 30% of global consumption.<sup>5</sup> However, some EU countries are major producers of particular metals, for example Finland, Ireland, Greece, Poland, and Sweden. A number of Member States currently have no metalliferous mining industry. In complete contrast to construction minerals, there is therefore very heavy reliance on imports.

### 4.1 Importance of Minerals for the Development in Europe

During the past 50 years the structure of the European minerals industry has undergone fundamental changes. The production of metal ores has decreased steadily resulting in the requirements of the metals industry being met, with a few exceptions, through the imports of metal ores. For most metal ores import dependency is in excess of 50% and for some even in excess of 80%. This makes the European metals industry very vulnerable to external developments. While in the past political developments were the major risk factors threatening the supply of Europe with metal ores, the new supply risks are associated with the exceptional economic developments in China and India. The demand for raw materials in these economies has been such in recent years that supply

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<sup>2</sup> DG Enterprise working paper, preparatory work on the assessment of the competitiveness in the EU-Non-Energy Extractive Industries, (2004), p 5-8.

<sup>3</sup> DG Enterprise working paper, preparatory work on the assessment of the competitiveness in the EU-Non-Energy Extractive Industries, (2004), p 5.

<sup>4</sup> DG Enterprise working paper, preparatory work on the assessment of the competitiveness in the EU-Non-Energy Extractive Industries, (2004), p 7.

<sup>5</sup> Chapman G.R. et. al. European Mineral Statistics 1997-2001. BGS, (2003)

shortages have developed for some of the metal ores, notably iron ore.<sup>6</sup> This has had some impact on the European steel industry and highlighted the vulnerability of major sectors of the European industry. Europe's contribution to world metal ore production is between 2% and 6% and as the import figures show it is insufficient to meet the requirements of the European industries. Based on the present level of knowledge of mineral deposits in Europe, this situation is likely to continue as there is a shortage of high quality deposits of most metal ores.

Table 1: EU 25: European minerals Production as a Proportion of Total World Production (Source: World Mining Data 2002)

Ores	t(Metal)	% Proportion World
Bauxite (Aluminum)	2,467,255	1.8
Copper	715,689	5.2
Lead	271,190	8.8
Zinc	843,810	9.5
Chrome	288,343	5.6
Nickel	22,201	1.9
Iron Ore	11,878,949	1.6
Industrial Minerals	Production (t metal)	% Proportion World
Baryte	398,936	5.8
Bentonite	2,586,585	24.7
Diatomite	128,387	12
Feldspar	4,684,413	52.1
Fluorspar	314,381	7.1
Graphite	21,479	3.6
Magnesite	2,649,830	19
Perlite	1,014,165	46.1
Salt	44,878,991	21.9
Talk	1,274,770	17.2
Agricultural Minerals	Production (t K <sub>2</sub> O)	% Proportion World
Potash	4,936,875	19.9

The production of industrial minerals has been growing steadily over the years and this sector of the non-energy extractive industries has increased in importance. One of the reasons for this has been the development of new mineral processing technologies, particularly in the area of comminution. European industrial minerals producers play a major role and account for about 20% of total world production.

The European producers of these industrial minerals - Members of IMA-Europe - operate more than 650 mines and quarries and 600 plants throughout Europe. The European industrial minerals sector is present in nearly all of the EU Member States, from the very north of Scandinavia to the Mediterranean Coast. They offer direct employment to some 40,000 people and process an annual volume of some 100 million tonnes, contributing a value of around €10 billion to the EU's gross domestic product

<sup>6</sup> The supply shortage of iron ore was caused primarily by limitations of the harbour capacities in the major producing countries and shortages shipping capacity.

(GDP).<sup>7</sup> If downstream industries such as glass, foundries, ceramics, paper, paint, plastic, etc. are included, these figures are several orders of magnitude greater. With regards to the new Member States and Acceding Countries, the non-energy extractive industry as a whole directly provides 1 million jobs and approximately 4 millions jobs in downstream industries.

The role of potash production in Europe must also be noted as it is used primarily in the fertiliser industry. Europe is a major producer of potash and contributes more than 20% to world production.

The third and most important area is that of construction minerals. More than 3 billion tonnes of sand, gravel and crushed stone are produced annually to meet the demands of the European building and construction industries.

While most of the construction minerals are produced close to the major development centres, the establishment of mega-quarries next to the sea in Norway and in the UK is a new development that could have important consequences for parts of Europe which can be reached by bulk carriers.

For most of Europe, however, local production will remain important for transport and environmental reasons.<sup>8</sup>

Annual per capita minerals consumption varies within wide margins depending on the development status of the Member States. It can be as high as *15 tonnes per capita* per year in some of the Member States.

Consumption figures obtained from the new Member States show that in some of these States the figures can be below 3 tonnes per capita per year. Annual per capita consumption in the new Member States of the EU will most likely increase from the present low levels as their economic activities grow.<sup>9</sup> The importance of construction minerals (aggregates) has increased significantly over the years and it has to be questioned whether these minerals should be considered to be of low national importance.

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<sup>7</sup> Very clearly, the industrial minerals sector has increased in importance over the years. European companies such as OMYA or Talc de Luzenac are market leaders in the field of high quality filler materials required by the paper, pulp and plastics industries. But others such as Imerys, Sibelco and S&B Industrial Minerals are also market leaders in their fields of expertise. Next to these world leading companies, one must remember that the industrial minerals industry is mainly composed of small and medium-sized enterprises (SMEs).

<sup>8</sup> A study commissioned by the Swiss Quarrying Association has shown that short transport distances are the most effective means of keeping the cost of transport and the environmental impact of mineral supply low. "*Kurze Transportdistanzen begrenzen schädliche Umweltauswirkungen*". Sand & Kies. Vol.56 (2002) pp.4-7.

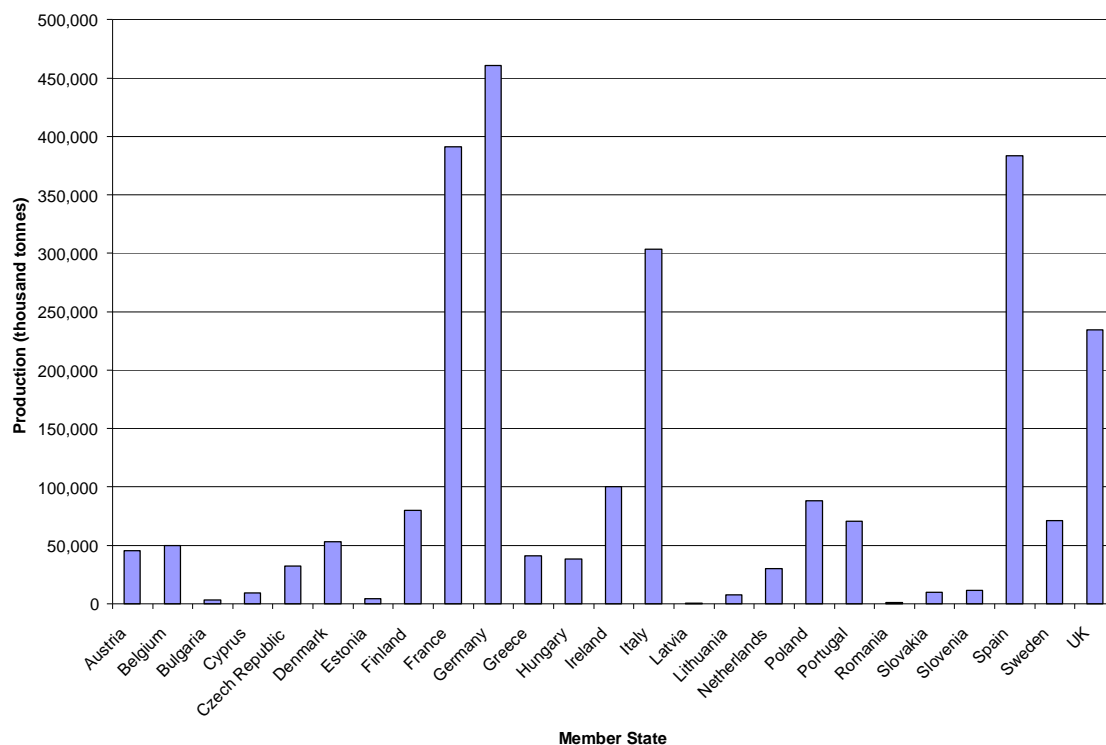
<sup>9</sup> Noetstaller and Wagner have studied the relationship between per capita income in Austria and the consumption of construction minerals. They have shown that consumption increased from low levels of per capita income in the 1960's to a peak consumption level of 800kg/1000 € NGP at a per capita income of 15,000 € in 1970 and has dropped since steadily to a level 500 kg/ 1000€NGP in the year 2000. Due to the steady increase in NGP over the years the total construction minerals consumption remained more or less constant over the period. "*Zur langfristigen Entwicklung der Nachfrage von Baurohstoffen in Österreich-Rückblick und Vorschau*." R. Noetstaller und H. Wagner. BHM. Vol. 148 (2003) pp.316-320.

Table 2: Production of sand & gravel and crushed rock in 2001 (except where indicated)<sup>10</sup>

Country	Production (thousand tonnes)	Exports (thousand tonnes)	Imports (thousand tonnes)	Exports minus imports (thousand tonnes) <sup>#</sup>	Net exports as a % of production (%)
Austria	45,568	2,428 <sup>3</sup>	2,293	135	0.3
Belgium	49,605	15,785	23,173	-7,388	-14.9
Bulgaria	3,500	122 <sup>4</sup>	10 <sup>4</sup>	112	3.2
Cyprus	9,300		3	-3	<0.1
Czech Republic	32,217	555	261	294	0.9
Denmark	52,976	1,113	2,124	-1,011	-1.9
Estonia	4,100	282	380	-98	-2.4
Finland	80,000 <sup>3</sup>	581	137 <sup>2</sup>	444	0.6
France	391,368	12,547	9,296	3,251	0.8
Germany	460,806	21,152	15,007	6,145	1.3
Greece	41,000 <sup>2</sup>	34	29	5	<0.1
Hungary	38,071	590	57	533	1.4
Ireland	100,000 <sup>3</sup>	380	990	-610	-0.6
Italy	303,525 <sup>3</sup>	1,268 <sup>1</sup>	4,015	-2,747	-0.9
Latvia	688	173	543	-370	-53.8
Lithuania	7,600	259	964	-705	-9.3
Netherlands	30,000 <sup>4</sup>	8,328	19,192	-10,864	-36.2
Poland	88,127	868	91	777	0.9
Portugal	70,486 <sup>4</sup>	54	750	-696	-1.0
Romania	733	2	124	-122	-16.6
Slovakia	9,700 <sup>4</sup>	570	195	375	3.9
Slovenia	11,510	78	491	-413	-3.6
Spain	383,688 <sup>4</sup>	1,642	1,088	554	0.1
Sweden	71,223 <sup>4</sup>	2,207	417	1,790	2.5
UK	234,704	13,238	771	12,467	5.3

<sup>1</sup>1997 data : <sup>2</sup> 1998 data: <sup>3</sup> 1999 data: <sup>4</sup> 2000 data

<sup>10</sup> DG Enterprise working paper, preparatory work on the assessment of the competitiveness in the EU-Non-Energy Extractive Industries, (2004), p 6.



Production of sand, gravel and crushed rock in 2001 in each EU Member State

To summarise, minerals, and in particular construction minerals, will continue to be an important factor for the economic development of Europe. The supply of the European industry and society with minerals will therefore continue to be a major challenge to the non-energy extractive industries in the different Member States.

## 4.2 Securing Supply of Minerals – Strategic Planning for Minerals

### 4.2.1 Sustainable Development

Mineral extraction in Europe has become more difficult over the years due to increasing concerns for the environment and the lack of appreciation of the importance of the extractive industries for economic development. Against this background the role of minerals planning and minerals planning policies has to be examined.<sup>11</sup> An appropriate starting point is the concept of sustainability which was defined in the “Brundtland Report” published in 1987 entitled “Our Common Future”, as:

*"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

The European Community has adopted the sustainable development concept as detailed in the Brundtland Report. The Brundtland definition has been incorporated in the EU Strategy for sustainable development, adopted at the Gothenburg Council in 2001. This strategy requires that all policies should be judged by how they contribute to sustainable

<sup>11</sup> Evaluation should also examine the degree of the compliance with all other (planning) policies and give recommendations for the higher level of the integration of different (planning) policies.

development.<sup>12</sup> The 5<sup>th</sup> and 6<sup>th</sup> Community Policy and Action Programmes make direct reference to the concept of sustainable development. As far as the extractive industries are concerned the most relevant document is the Communication on "Promoting sustainable development in the EU non-energy extractive industry" (COM (2000) 265). This was the first document to discuss the problem of sustainable mining. In spite of its limited scope, it gave a complex review of the mining industry and made valuable statements such as:

- mining is increasingly influenced by other competing land uses, such as urban development, agriculture, nature conservation;
- the balanced consideration of economic, environmental and social aspects to ensure the sustainable development of the industry is needed;
- a coherent Community policy is necessary.

The Communication raises two kinds of concern from the point of view of sustainable development. These concerns are the use of non-renewable resources themselves, which may mean that these "resources will not be available for future generations"<sup>13</sup> and the quality of the environment, pointing to general and specific risks since mining may affect the quality of the environment. These risks are: air pollution (mainly dust), noise, soil and water pollution and effects on ground water levels, destruction or disturbance of natural habitats, and the visual impact on the surrounding landscape, the scope and intensity of which depends on the nature of the ore and specific characteristics of the site of the operation. The environmental impact is likely to be greater in metal mining. Therefore, the priority issues for sustainable development of the industry are: preventing accidents, improving the environmental performance of the industry in general (which also requires action by the Member States aimed at creating an inventory and restoring abandoned mine sites).

Among its follow-up actions, the Communication issued an action plan which was the Communication from the Commission on "Safe operation of mining activities: A follow-up of recent mining accidents", COM (2000) 664. This Communication describes the Aznalcollar and the Baia Mare accidents and gives an overview of the Community environmental legislation with special emphasis on tailings pond safety. It identified three key follow-up actions: the amendment of the Seveso II Directive, an initiative on the management of mining waste, and the preparation of a Best Available Technology (BAT) reference document.

Most Member States have taken measures to implement the principles of sustainable development. These range from legislation implementing the concepts of sustainable development to the formulation and publication of specific policies aimed at sustaining minerals supply and the flow of benefits from mining.<sup>14</sup> In most Member States the

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<sup>12</sup> Communication of the Commission (2001) 264 "A sustainable Europe for a better world: a European Union strategy for sustainable development".

<sup>13</sup> Promoting sustainable development in the EU non-energy extractive industry" (COM (2000) 265, Section 2.3 "Environmental Impact". Comment by Solar, S.: So far there has not ever been a physical shortage of any minerals because of market flexibility, technology development (substitution, recycling, etc.), more exploration etc. Shortages have been caused by political reasons (oil crisis).

<sup>14</sup> Principles of sustainable development were introduced to all stages of policy cycle (from formulating policies, to implementing monitoring and reviewing the law and regulations).

emphasis has been on environmental protection, promoting reduced use of minerals, and recycling of materials.

Land use planning as an instrument *to protect* minerals from other developments is used by some Member States. The challenge is to achieve a *balance* between securing minerals and protecting the environment, taking account of human social and economic welfare.<sup>15</sup>

In England and Wales, a system of “landbanks” is used for aggregates. In terms of this concept the requirement is placed on mineral planning authorities to provide a stock of mineral planning permissions to meet a specified level of demand. Some other countries also seek to achieve a similar end, albeit they rely on development allocations rather than a stock of planning permissions.

In addition to reducing the consumption of minerals and protecting mineral deposits from other developments, a further strategy to achieve a sustainable supply of minerals is the development of new technology with the following objectives<sup>16</sup> :

- To develop better exploration technologies to assist in the search for new mineral deposits;
- To develop extraction methods which allow for the more complete extraction of mineral bodies;
- To develop cheaper and more efficient methods of extraction and mineral processing to allow for the economic extraction of lower quality mineral deposits;
- To develop extraction and mineral processing methods which minimise environmental impact and damage caused by mining;
- To develop processes which minimise mining waste production;
- To develop technologies which are less mineral resource intensive;
- To develop and use substitute materials; and
- To investigate in the upgrading of minerals and in finding new uses for minerals.

#### **4.2.2 Minerals Policy**

Government decisions concerning matters of national importance are usually taken on the basis of established policies. Examples are economic issues, labour issues, environmental issues, international matters, etc. The survey of Member States undertaken for this study has shown that only a few of the Member States have clearly defined and published mineral policies. This is a marked change from the situation several decades ago when minerals played a focal role in Europe as reflected by the European Coal and Steel Union, the original predecessor of the European Community.

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<sup>15</sup> There can be many challenges, which are linked to different kind of balances; one of them is certainly the balance between *high level* of environmental protection and secure *adequate* supply of minerals.

<sup>16</sup> The Austrian Minerals Plan which is being prepared at present has technology development as one of its declared objectives.

Important elements of a minerals policy within the context of sustainable development are:

- General
  - § Recycling
  - § Changed construction methods employing renewable materials
- Minerals specific
  - § Demand situation
    - Local demand for minerals
  - § Supply situation
    - How can the demand be met?
      - From local sources
      - Through imports
    - How secure is the supply?
  - § National resource situation
    - Knowledge of mineral resources
    - Protection of mineral resources
  - § Legislation of minerals industry
  - § Administration of minerals industry
    - Mineral rights
    - Access to minerals
    - Health and safety of work force
    - Environment protection.

The *aim of a policy* with respect to raw building materials should be to stimulate the extraction of these materials in a socially responsible way. The first basic principle is that raw materials should be used economically and for high-grade applications as much as possible. The maximum use of secondary raw materials or renewable raw materials such as timber is also a basic principle. National and local authorities should set a good example to others. As far as possible the extraction of raw materials should be *multifunctional* in order to improve spatial quality. This means that a socially desirable function should be developed associated with the extraction such as recreation facilities, housing on a waterfront, water management, nature conservation, etc.

*Recycling* is an important component of most published minerals policies in the Member States. Experiences in some Member States have shown that the desired recycling rates are not being achieved because of the very stringent environmental standards which have



been adopted in Europe. In many instances the recycled materials do not meet these standards and for that reason can not be used.<sup>17</sup>

No clear definition exists in the EU as far as minerals planning policies are concerned. In terms of the Communication COM 2000/265 concerning the promotion of sustainable development in the extractive industry, the Commission considers “the need for land access to be an essential prerequisite for the further development of the industry and its relationship with regional and spatial planning that impact on this need”. The question therefore is how national land use and spatial planning policies can best be framed to achieve the right balance between economic, social and environmental objectives. Other elements of a mineral planning policy should be:

- The legal and administrative framework, which regulates access to mineral deposits, defines mineral ownership rights and provides conflict resolution mechanism.
- Supply of minerals
- Access to mineral deposits
- Acceptable mining and environmental performance
- Safe and healthy mining conditions
- Appropriate restoration and aftercare after completion of mining operations
- Monitoring

A successful minerals planning policy should therefore create the legal and administrative environment that is necessary to ensure the sustainable supply of minerals to society within the framework of sustainable development.

## 4.3 General Legal and Policy Framework

*All Member States have some form of hierarchical government structure, with the national government at the apex and legal and administrative structures following the “cascade” principle, i.e. regional, county and local law and practices, which are consistent with national law and practice and, especially European law and practice.*

The emergence of environmental protection (EU) legislation/policy has added a number of additional factors that impact on the authorisation process for mineral extraction. The influence of EU-legislation and policy on national legislation and practice has grown markedly in recent years, especially regarding environmental matters.<sup>18</sup>

Many national laws have been amended to implement EU-legislation. While this is having a harmonising effect with regard to environmental matters<sup>19</sup>, it has also had an

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<sup>17</sup> The German Sand and Gravel Association and the Manager of the Bavarian Minerals Association reported the same experiences at meeting held with representatives in Berlin on 22 September 2004. In Bavaria recycling rates are only 4% which is well below those planned.

<sup>18</sup> But it is also important to notice the fact that *care of environment* has increased over past decades and mining sector need to perform up to upgraded standards imposed by governments or societies.

<sup>19</sup> Directive 85/337/EEC (amended by Directive 97/11/EC) for example introduced harmonised procedures for assessing environmental impact prior to the authorisation of mineral development projects.

impact on the extractive industry by increasing restrictions on mineral extraction, and increasing the time and costs required for approval of permit applications. Both aspects have adverse effects on the ability of the industry to exploit available mineral reserves. Extractive activities depend on geology and the particular location of mineral deposits.<sup>20</sup> As a result access to the deposits is of crucial importance for the competitiveness of the extractive industry. Some directives, such as the Habitats Directive, have restricted areas of land which are available to the industry.

#### **4.3.1 *Principal Legislation Controlling Mineral Extraction***

The mechanisms for controlling mineral extraction in part reflect the historical evolution of the ownership of mineral rights.

Three main types of legislation have been identified:

- A Mining Law - Other excavation laws
- A General Land Use Planning Law
- Other laws (especially environmental laws)

In most Member States the extraction of state owned minerals is covered by a specific Mining Law. As far as construction minerals are concerned, there is a trend for the principal legislative control to be exercised under environmental laws. Environmental laws tend to focus on limiting possible harmful effects resulting from extraction by attaching conditions to mineral extraction licences.

### **4.4 Existing Minerals Planning Policies / Systems in Europe**

#### **4.4.1 *Ownership of Minerals***

The ownership of mineral rights systems in Member States usually date back many years. Acts such as the Napoleon Code have left a legacy of two-tier ownership in most Member States. In general, the ownership of mineral rights belongs either to the State or the owner of the land.

*State owned minerals* are usually minerals which are relatively scarce and of national interest and importance. Traditionally metallic ores and energy minerals fall in the category of state owned minerals. More recently certain industrial minerals have been added to the list of state owned minerals in some countries<sup>21</sup>.

A key aspect of state owned minerals is that the owner of the land on which deposits exist, is not the owner of the minerals. Extraction of these minerals may take place even against the will of the owner of the land if it is considered to be in the national interest. In this instance the land may be expropriated and the owner receives compensation for the loss of value of the land.

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<sup>20</sup> In the case of *aggregates*: Extractive activities (may) depend on geology and the particular location of mineral deposits, *relative* to other land use and societal issues.

<sup>21</sup> The Austrian Mineral Resources Law incorporates gypsum, anhydrite, barytes, graphite, talc as well as carbonic rocks with a very high content of CaCO<sub>3</sub> (CaCO<sub>3</sub> quotas of more than 95%) in the category of “free minerals” which fall in the group of state controlled minerals.

In some of the Member States, the State receives a mineral rent for the extraction of state owned minerals. A special category of state owned minerals exists in some of the Member States, which is known as “free minerals”.<sup>22</sup> In this case the ownership of the minerals rests with the state but these minerals are free in terms of mineral extraction. No mineral rent has to be paid to the state but permits have to be obtained for exploration and exploitation.

*Landowner minerals* are more common minerals that are of comparatively low value and/or minerals that are not considered to be of national interest.<sup>23</sup> For these reasons the mineral rights of these minerals usually rest with the landowner. Experiences in some Member States have shown that due to environmental constraints and other use of land, construction minerals<sup>24</sup> are no longer readily available in some areas, which raises the question whether it is still correct to consider this category of minerals to be of low national value. Views expressed by the German Building Materials Association are that this is no longer the case in some areas.<sup>25</sup>

#### **4.4.2 Exploration**

*Exploration* for undiscovered mineral resources is closely linked to the issue of land access. Exploration for mineral deposits is an *essential element of a planned and co-ordinated minerals planning system*. It identifies the location of mineral deposits and provides data on the quantity and quality of the resource.

The role of governments in supporting exploration can be summarised as follows:

- § co-ordinating or undertaking geological or geophysical surveys to provide general data on the location and nature of mineral reserves;
- § contributing to the funding of a national geological institute or survey;
- § providing financial assistance to private companies involved in exploration; and
- § providing information for land use planning; and
- § issuing licences/permits to allow exploration.

The survey of Member States has shown that all Member States have government funded institutions which co-ordinate or undertake geological and geophysical surveys to provide general data on the location and nature of mineral reserves. The principal function of the national institutes is to provide general information about mineral resources (for use by private organisations involved in minerals exploration and in connection with land use planning) rather than undertaking exploration for specific minerals, although the dividing line between the two activities can be a fine one<sup>26</sup>.

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<sup>22</sup> Member States which have the category of free minerals are: Austria, Germany; Norway, Sweden and Finland.

<sup>23</sup> An exception is Spain where all mineral resources belong to the state.

<sup>24</sup> Construction minerals include aggregates (i.e. sand and gravel and crushed rock), common clay and shale, gypsum, limestone and dolomite, and building stone (dimension stone).

<sup>25</sup> Meeting with representatives of the German Buildings Materials Association in Berlin on 22. September 2004.

<sup>26</sup> The Geological Survey of Norway has been engaged in specific exploration campaigns for metal ores and certain industrial minerals.

The role of some geological surveys (e.g. Latvia and Lithuania) includes the licensing of exploration activities and in the case of Latvia also for the licensing of extraction activities.

Involvement in land use planning by national geological institutions is becoming more frequent in the Member States. For example an *ad hoc* working party of the geological departments of the German federal states has identified mineral resource protection as a responsibility of the state and sees as one of the most urgent and important steps in the integration of information on minerals into land use data bases.<sup>27</sup> Considering the occurrence of *minerals in general land use planning decisions* is considered *good practice* and essential for a sustainable minerals supply in Europe.

Funding of the geological survey units is mostly by the state but there are some notable exceptions such as England where state funding accounts for about 40% of the total, while the remainder is financed through contract work. Financial support by the state to private companies involved in exploration is the exception in the Member States.<sup>28</sup>

Licensing of exploration for state owned minerals is required in all Member States. Exploration permits are issued by the same agencies that issue extraction permits. In the case of large scale exploration work it may be necessary to carry out an environmental impact study.

### **4.4.3 Land Use Planning**

#### **4.4.3.1 General Observations**

In every society and state there exist competing interests in the use of land. These interests range from community related issues, industrial and commercial issues to ecological issues. As far as the extractive industries are concerned the key issue is to find a balance between the sustainable supply of society with minerals, economic development and the social and natural environment.

The objective of land use planning within the context of mineral planning is to find sustainable solutions taking into consideration medium to long-term views and local, regional and national interests. Mineral extraction requires access to the mineral deposits, which unlike most other resources are geographically fixed. In terms of this inflexibility land use planning requires a long-term view to protect mineral deposits from sterilisation. It should take place at a high level since the distribution of minerals can vary significantly between regions.

Access to mineral deposits is of critical importance to the supply of society with all the necessary minerals required by it and as such a central element of any Minerals Planning Policy. Problems of land access and linked to this, the time taken to obtain permits have been identified by a number stakeholders as the most crucial problem facing the

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<sup>27</sup> Ad hoc Working Group of German Geological Departments –Mineral resources protection in the Federal Republic of Germany-Current Status, Geological Department Rheinland-Pfalz, Mainz, September 2001.

<sup>28</sup> In Austria the state, until fairly, recently shared to some extent the risk of exploration work with the mining companies by contributing to the cost of exploration work.(Bergbauförderung). This praxis has been discontinued recently.

extractive industries.<sup>29,30</sup> The group of minerals that is particularly affected are the construction minerals, which have steadily grown in importance over the years.

The particular problem with construction minerals is that they are required in large quantities in the economically more active regions and close to growth centres. Their relatively low value places constraints on the distance over which they are transported. This creates a conflict with other land uses. Since land use decisions concerning the extraction of construction minerals are often completed at a low level of government, local considerations often dominate and supply shortages can develop. The view has therefore been expressed that land use planning for construction materials should take place at the regional, or even at the *national* level.<sup>31</sup>

For metallic ores and industrial minerals (particularly those defined as being of national importance) the development plan may take the perceived national need into consideration.

#### 4.4.3.2 Key Determinants for Land Use Planning

Key determinants are

- Policy and legislation taken at EU-level
- Structure of government
- Role of the national government in the planning process for minerals
- Planning framework

The EU legislation concerning the extractive industries is primarily health and safety and environment oriented.

The *structure of government* in each Member State is one of the key determinants of the approach to planning for mineral extraction (hierarchical planning).

The survey of Member States has shown that there can be significant differences between Member States. Depending on the individual countries different aspects of planning for mineral extraction take place at different levels of government. *In general terms, the lower the level at which planning takes place, the more detailed it tends to be.*

National government can exert their *influence* (concerning minerals issues in land use planning) in a number of ways:

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<sup>29</sup> In terms of EU communication COM 2000/265 concerning the promotion of sustainable development in the extractive industry the Commission considers “the need for land access to be an essential prerequisite for the further development of the industry and its relationship with regional and spatial planning that impact on this need”.

<sup>30</sup> A survey amongst aggregate producers in Austria has shown that the average duration to obtain an extraction licence is about 8 years. Wagner, H. und Noetstaller, R.: Zur Frage der Bedeutung der Versorgung Österreichs mit mineralischen Rohstoffen aus heimischen Vorkommen. BHM, Vol.142 (1997) pp. 339-349.

<sup>31</sup> This view has been expressed by the Committee working on the Austrian Minerals Plan and the German Building Materials Association and is confirmed by the minerals policies adopted in some of the Member States.

- § National mining plans (Austria<sup>32</sup>, Portugal<sup>33</sup>),
- § Policy guidance (e.g. Czech Republic,<sup>34</sup> Denmark, Norway, England, Portugal, Slovenia),
- § Through specific requirements in legislation (e.g. France, Germany, Netherlands, Poland, Sweden), and
- § Indirectly through other legislation (national parks, cultural heritage etc.), which preclude mining in certain areas (e.g. Finland, Poland).

The surveys of Member States has shown that the principal distinction is the *degree to which land use plans provide detailed prescriptive information* on where mineral extraction might be acceptable.

Some Member States have developed schemes which identify areas where no extraction will be allowed, areas where extraction may be allowed subject to certain conditions and areas where in principle extraction will be permitted.

Conversely, other Member States provide policy guidance which is to be taken into account by lower tiers of government.

In other Member States decisions concerning minerals extraction sites are influenced by more general use of *strategic environmental assessment in plan preparation* where sites are allocated following a general assessment of environmental impacts.

Although land use planning legislative structures and policies relevant to mineral extraction vary, there are also similar characteristics of planning systems. Amongst other aspects, all countries prepare some form of *development plan*, which is usually consistent with national, regional or county government objectives.

Nevertheless, it should be noted that only *some* of the Member States have development plans which provide *enough guidance on acceptable locations for mineral extraction*.

Therefore some Member States define mineral extraction areas at a national level, whereas in most, areas reserved for mineral extraction are identified within specific regions. All Member States identify areas where mineral extraction is prohibited.

#### **4.4.4 Process of Obtaining Permits**

The issue of permits and authorisation depends to some extent on the ownership of the mineral rights. For minerals that are important to the state or belong to the state, permits to conduct exploration work and extraction are required in all Member States. In the case of landowner minerals the situation differs.

Permits vary and can cover: mining rights, mining licences (exploration, mining), permits according to land use plans, and other permits, especially environmental permits.

Procedures for granting mining licences have been updated in most Member States in recent years to more fully incorporate environmental protection in the approval procedures. The basic objective is to achieve an appropriate balance between promoting

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<sup>32</sup> National mining plan: in preparation.

<sup>33</sup> Sector Plans for mineral resources: in preparation.

<sup>34</sup> Policy Guidance from government's resolution "The Raw Material Policy of the Czech Republic... (1999)".

resource exploitation for economic reasons and minimising the environmental impact of exploitation work.

#### **4.4.5 Obtaining Permission for Exploration Activity**

The geological survey or equivalent organisation in Member States is usually responsible for providing general information on geology and mineral resources. The operator is usually responsible for obtaining detailed information on the mineral deposit. Exploration activities are normally controlled by the mining authority where one exists. In some Member States the national geological organisation acts as a co-authority (e.g. Portugal, Sweden, and Hungary). In others (e.g. Latvia and Lithuania), the geological survey is responsible for the supervision of exploration activities.

As far as state owned minerals are concerned, an exploration permit or equivalent is required in all Member States. A consistent pattern for the exploration of landowner minerals does not exist. In some Member States, an exploration permit is not required whereas in the others permits of one kind or another have to be obtained before exploration work for landowner minerals can commence.

#### **4.4.6 Obtaining Permission for Mineral Extraction**

Authorising mineral extraction by a public authority is a central element of Minerals Planning Policy in all Member States, the *broad aim being to regulate the use of land in the public interest*.

*Differences* in procedures adopted in the various countries relate primarily to the government structure (centralised/non-centralised control), the organisation *responsible* for overseeing the authorisation procedures and the nature of the principal legislation governing mineral extraction. In Member States with a Mining Act, the control over mineral extraction tends to be centralised and responsibility usually rests with the mining authority, which is often part of the Department of Industry (or Industry/Energy). However, state owned and landowner minerals may be treated differently. The key determinant of control (authorising mineral extraction) is the pattern of ownership of mineral rights.

In countries with decentralised control, the regional tier of government usually has responsibility for authorising mineral extraction, for example Belgium, Italy, Netherlands, Spain and Portugal (only for large and medium scale quarrying of non state owned minerals and rocks).

There is generally a requirement for an operator to obtain more than one permit (e.g. mining, environmental etc.) before being able to begin operations.

#### **4.4.7 Authorisation Process**

The authorisation process for mineral extraction differs between Member States. In some (e.g. Belgium, Denmark, England and Wales) *standard application forms* have been developed which assist the applicant by clearly identifying what information is required. In some Member States, five or six public bodies take part in the process, i.e. the mining authority, the environmental agency, the nature conservation agency, the water authority, and the health and safety agency. Critical for the time required to complete the authorisation process is whether the various investigations that are

requested by public bodies participating in the process can be carried out in parallel or have to be performed in sequence. *Significant time savings can be expected if the processes run in parallel.*

An important aspect of the authorisation process is the appeal procedure. A distinction must be made between an appeal by the applicant (operator) and one by a third party. Most Member States provide the right for the applicant to appeal in the authorisation process. In Denmark and Finland this right is confined to strictly legal matters and not to the outcome of the application. As far as the right for appeal by third parties is concerned all Member States except Finland<sup>35</sup>, United Kingdom, Greece and Sweden have this as part of their authorisation process.

A key element of the authorisation process is whether or not a project application requires an *Environmental Impact Assessment* (EIA). *Directive 97/11/EC*, which lays down criteria for environmental impact assessments, is ambiguous as far as the extractive industry is concerned. Annex I, (19) specifies for quarries and surface mines a threshold value of 25 hectares and for peat production a value of 150 hectares. In Annex II, (2), which covers other quarries and surface mines, specific threshold values are not given, leaving it to Member States to set threshold values and criteria in order to decide on the need for an environmental impact assessment.

The survey of Member States has shown that there exists no common pattern as far as environmental assessments are concerned. The span of threshold values ranges from 5 hectares in Ireland and Portugal up to 500 hectares in the case of state owned minerals in the Netherlands. With regard to marine aggregates, Ireland and the Netherlands make an EIA compulsory for all project applications. Irrespective of defined threshold values it has become practice in some Member States to subject all applications for extraction licences to an EIA. Examples are Greece, Norway, Portugal and quarrying operations in France.

#### **4.4.8 Regulatory Conditions Controlling Mineral Extraction**

All Member States require a permit or equivalent for mineral extraction. The permit usually contains a number of general and site specific conditions that have to be met by the permit holder. The specific conditions normally cover the technical aspects of mineral extraction, general health and safety requirements, environmental and land use planning matters, and restoration.

Depending on site specific circumstances, the various authorities involved in the authorisation process can impose specific conditions. These could either be part of a single comprehensive permit, or in a number of individual (separate) permits, which together constitute the overall permit. An important point is that very often it is only through the *imposition of specific conditions that mineral extraction can actually proceed.*

Mineral extraction, because of its potential to give rise to significant adverse environmental effects, is an activity where integration of the various aspects of environmental control (in land use planning systems) is crucial. There exist considerable differences between Member States on the extent of which this integration process has taken place. Well integrated systems have shown significant advantages in streamlining

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<sup>35</sup> In the case of landowner minerals in Finland, is the right of appeal limited to those who live in the municipality.



administrative procedures in connection with applications for exploration and exploitation permits.

#### **4.4.9 Restoration and Aftercare**

Restoration of mining land and aftercare are seen as vital components for the sustainable extraction of minerals and all have procedures to ensure that restoration takes place. Restoration of exhausted mineral workings is accorded a high priority in most Member States. It is normal practice in most Member States to impose restoration conditions on the extraction permit. As a general rule after-use of the extraction site is not covered in the mining legislation, except in Denmark. Whereas the principle of after-use of extraction areas and the need for long term management of the restored land is accepted by Member States, there are considerable differences on *how long term management of the restored area should be achieved*. A challenge in this regard can be that after-use is usually determined by the characteristics of the *location* of the workings (as provided for in development plans).

An issue which is of concern to most Member States is the *funding* of restoration work. The problem results from the fact that much of the restoration work takes place after completion of the extraction activities, which is when the operating company has no operating income. For this reason most of the Member States provide in their minerals legislation mechanisms to secure the funding of restoration work. This is achieved through provisions requiring the establishment of closure funds, bank guarantees or other forms of security.

#### **4.4.10 Fees and Compensation**

Financial provisions (fees, royalties, taxes, etc.) relating to mineral exploration and extraction are broadly similar across European Community, although amounts vary between the states and between mineral types.

#### **4.4.11 Monitoring and Enforcement**

Monitoring the implementation of planning authorisations and recourse to enforcement action should it prove necessary are important in ensuring that the overall objectives of planning policy are met.

All Member States acknowledge the importance of monitoring and enforcement and have put in place procedures to ensure that the activities take place. The controls may be exercised through a national agency or government department or through local/regional authorities, depending on the legislative regime in the Member State. A distinction can be drawn between monitoring imposed by legislation and voluntary activities undertaken by companies (e.g. voluntary codes, technical guides).

By drawing up voluntary codes of good practice, a number of mineral operators seek to ensure that statutory environmental and planning requirements are met or even exceeded. Some codes are adopted at an individual company level. The common characteristic of all codes of practice and guidance notes is that they are prepared by representatives of the mineral industry as opposed to government or local authorities. Nevertheless, they have tended to become a common reference point for all those concerned with minerals planning. The use of voluntary codes of practice by mineral

operators and the publication of technical guidance notes are intended to improve and maintain high standards of practice.<sup>36</sup> However, there is *still a requirement* for the relevant public authorities to ensure that appropriate standards are being adhered to and, if necessary, to take corrective action.

The national government usually has overall responsibility for controlling standards for extraction where the rights are owned by the state; whereas the monitoring of mineral working activities where the rights belong to the landowner, occurs lower down the hierarchy, at regional level or below.

In most Member States the staff within the mining authorities, which are responsible for monitoring and law enforcement, are qualified mining personnel having been trained in mines and/or at appropriate universities.<sup>37</sup> The situation is different when the supervising and monitoring authority comes from lower tiers of government. In these cases the inspection personnel usually has a much broader background in the fields of works inspection and health and safety, but tend to lack specific mining skills.<sup>38</sup>

The frequency with which mineral extraction sites are inspected *varies* both between, and within, the Member States. The assessment of monitoring performance is difficult and no clear statement can be made on the basis of the individual country reports. Opinions regarding the *effectiveness* of monitoring and enforcement are mixed. Government representatives generally believe that their system of control involving regular site visits and a wide range of sanctions works effectively. In contrast, mineral operators (and/or government officials) in a number of Member States indicated that monitoring of adherence to regulations and standards was ineffective due to one or more reasons, e.g. *lack of personnel and resources*. Several country reports indicate that the frequency of site visits is quite low and insufficient for effective monitoring.

## 4.5 Evaluation of the Impact of Mineral Policies/Systems

Chapter 6 of the main report evaluates the impact of minerals planning policies and related procedures on the sustainability of mineral supply and the competitiveness of the European mining and quarrying industries. This evaluation is done in terms of the three pillars of sustainability, namely *Economic, Social, Environmental* factors. For minerals, this relates to the competitiveness of the industry, social benefits derived from the extraction of minerals and the environmental performance of the industry.

The extractive industry differs in many important respects from most other industrial sectors. Arguably the most significant difference is that the location of the industry and the nature and quality of the material it produces is determined by geology. It also differs from most other sectors, with the possible exception of that for forestry and wood based products, in that as a producer of the basic raw materials required by the downstream industries (whether, for example, as raw material for the ceramics or steel industries, or

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<sup>36</sup> Excellent examples of this approach are the documents prepared by the Australian Environment Protection Agency. In total some 20 booklets have been published dealing with issues such as environmental risk assessment, environmental management, environmental monitoring and awareness training program, best practice environmental management, tailings dams, water management etc. (<http://www.deh.gov.au/industry/industry-performance/minerals/booklets/eia.html>)

<sup>37</sup> In most Member States the staff of the mining authorities has an appropriate training in mining engineering. In Germany the officials of the mining authorities have to undergo a formal training after having completed their university training (Bergassessor). In Poland there exists a specific university course for mine inspectors.

<sup>38</sup> Experiences in Germany and Austria identified as critical weaknesses evaluation of mine design, assessment of slope stability, etc.

as construction aggregates for road or house building), the success of the industry is strongly linked to the success and competitiveness of these sectors.

Within the context of this report the *competitiveness* of the European minerals industry is defined as *the ability of the minerals industry to make a significant contribution towards meeting the demand for minerals required by the European industry and society in terms of quantity, quality and cost of production*. The competitiveness is controlled by two factors, namely the quality and quantity of mineral deposits and the political, legal, administrative, social and economic environment in which mineral extraction takes place.

As far as metal ores are concerned the more favourable deposits in terms of quality and quantity and the geological conditions in which they are found, have already been exploited. As a result metal ore mining is on the decline in the EU. In the cases of industrial minerals and construction minerals the geological situation is more favourable and there are still many high quality deposits available for extraction.

Considering that the geological factors are pre-determined the following evaluation of the competitiveness of the minerals industry concentrates on the legal and administrative environment in which minerals extraction takes place. This is summarised under the heading “Minerals Planning Policy”. As discussed in Chapter 3 of the main report, the *minerals planning policy* – legal and administrative framework concerning the extractive industry – is seen as the means of *implementing a National Minerals Policy*.

#### **4.5.1 Minerals Policy**

Minerals Policy in many Member States is a *low key issue* and *few* Member States have specific and clearly defined and published mineral policies.

A number of Member States still have minerals legislation which dates back to a time when minerals were considered as important for economic development and therefore have a high legal status as reflected by the category of “free minerals”, i.e. Austria, Germany, Finland, Norway, and Sweden.

Some Member States have a principal minerals legislation that is based on the concept of sustainable development. Most Member States delegate the implementation of their minerals policy to lower tiers of government. At this level the instrument to implement the policy is land use planning. Access to and protection of mineral deposits is an important aspect of mineral planning, particularly as far as construction minerals are concerned, which constitute the bulk of non-energy minerals extracted in Europe.

However, in countries which do *not have clearly defined mineral policies* minerals issues are often allocated lower priority in land use planning compared to other issues such as environment protection, nature conservation and water protection. In very few Member States is reference made to minerals being an important consideration in land use planning, e.g. identifying areas which have been set aside for minerals extraction.

One of the critical issues is that in most Member States construction minerals are not considered to be of national or high importance. This is despite the fact that the European society is strongly dependent on a sustainable supply of construction minerals, which as far as the interior of Europe is concerned should, for environmental reasons, involve short transport distances.

### 4.5.2 Legal and Administrative Framework of European Mining and Quarrying Industries

All Member States have legislation governing mineral rights, licensing of minerals exploration and exploitation, monitoring and supervising of mining activities and mine closure.

In most Member States several categories of minerals are defined as explained earlier.

With regard to the *principal legislation* controlling mineral extraction there, exists – as discussed in Chapter 3 of the main report – in addition to the specific minerals legislation (i.e. mining act) other form of legislation, such as an excavation act, planning act or other laws that impact mineral extraction.

In some Member States, specific minerals legislation no longer applies (e.g. Belgium) or only applies to minerals that do not belong to the landowner. As a result minerals of low value (mostly construction minerals) are legislated by other laws, which are either a general land use planning law or an environmental law (e.g. Belgium, France, Germany).

There is an increasing tendency in Europe to regulate minerals extraction through provisions in other legislations, i.e. environmental protection, forestry and water legislation. As most of these provisions are of a prohibitive nature, minerals extraction is adversely affected.

This raises the issue of the *effectiveness and efficiency of the administrative processes* governing mineral extraction. The various country reports have shown that different approaches have been adopted by Member States and that the situation can be quite complex with the potential for inefficiencies, time delays and increased cost.

The following table gives an indication of the administrative structure of the authorisation process in some of the Member States.

Table 3: Structure of the Authorisation Process in Selected Member States

Country	Mining (State)	Mining (landowner)	Nature	Environment	Land use planning
<b>Austria</b>					
National	x				
Regional					
County		x	x	x	x [varies between provinces]
Municipal					
<b>Denmark</b>					
National	x			x	
Regional					
County		x			x
Municipal					
<b>France</b>					
National				x	
Regional					
County	x	x			x [minerals not well represented]

Country	Mining (State)	Mining (landowner)	Nature	Environment	Land use planning
Municipal					
<b>Germany</b>					
National				x	
Regional	x				
County		x	x		x [varies between federal states]
Municipal					
<b>Hungary</b>					
National					
Regional	x	-		x	-
County					
Municipal					-
<b>Norway</b>					
National	x			x	
Regional					
County					
Municipal		x			x [minerals not well represented]
<b>Poland</b>					
National	x			x	
Regional		x	x	x	
County					
Municipal			x		x
<b>Slovenia</b>					
National	x	-		x	x [minerals not well represented]
Regional					
County					
Municipal					
<b>UK</b>					
National					
Regional					
County	x	x		x	x
Municipal					

Comments:

x: main responsible authority [Table 16 (final report)]

*Environment*: According Directive 85377/EEC [following Table 6 (final report)]

*Land use planning*: referred to Table 12 (final report)

*Nature*: insufficient information in most country reports

The *analysis* of the various procedures adopted in the different Member States shows that in all instances the authorisation process is such that it is unavoidable for local

and/or regional authorities to become involved in the final decision making step. The main difference between the Member States is the role of the national level in the process. In some Member States and for some categories of minerals, the national authority becomes involved in the authorisation process in an operational manner.

In Austria, deciding an application for a permit to extract the state owned minerals and free minerals is the responsibility of national government. In contrast, in the UK, the national government sets the broad policy framework within which the industry should operate but leaves it to local authorities to decide individual applications. In France, where the national authority has delegated the responsibility for the administration of minerals applications to its regional directorates but in the case of state owned minerals has reserved the final decision to the national level. The difference between France and Austria is that in France the role of provincial and local authorities in the authorisation process is restricted.

The role of central government in the issue of permits for landowner minerals tends to be limited. In the majority of Member States, decisions concerning this category of minerals are taken at the regional and sometimes even local level.

#### **4.5.3 *Time Required for Obtaining an Extraction Permission***

The time required for extraction permission varies *considerably*. It ranges from a few months to several years and usually exceeds the time specified. Reports from Member States indicate that the time required for extraction permission is significantly shorter if the application concerns a mineral deposit that is situated in a designated mineral extraction area. The main reasons for time delays are the involvement of many different authorities in the licensing procedure and the involvement of the public in certain elements of the approval process. Experience shows that the preparation of Environmental Impact Assessments (EIA's) is a complex issue and tends to take up much of the time.

#### **4.5.4 *Social Benefit***

Societal benefits can be measured in the most direct way by the number of persons directly and indirectly involved in the non-energy extractive industries. Directly involved are persons working on the extraction and processing of minerals and the production of mineral based products such as cement, bricks, tiles and other mineral based building materials and ready made concrete. Indirectly involved are persons manufacturing goods and materials used by the non-energy extractive industry, those that provides services to it, and also the municipalities involved.

In some Member States the municipality receives 50% of the royalty payments from mineral operators. This is often used to finance or offer loans for: the exploration of mineral resources, reducing the effects of exploration and exploitation of mineral resources, developing new mining technologies, etc.

Another group benefiting from the production of minerals are persons working in industries which make extensive use of minerals and minerals products. The most important industry in this respect is the construction industry.

One of the fundamental problems encountered in assessing the importance of the non-energy extractive industries is the incomplete statistical information. As far as the

traditional mineral commodities such as metal ores and the more important industrial minerals are concerned there exist relatively reliable statistical data. The same can not be said for the bulk of minerals produced in Europe, namely construction minerals. This is seen as a serious shortcoming as it does not reflect the true importance of the sector. In the case of construction minerals another difficulty is that many of the companies are also involved in downstream activities which add value.

Typical examples are ready-mixed concrete or manufacturing of bricks or cement production. In the case of many industrial minerals producers the mineral extraction is only a minor aspect of the business. The difficult question is where to draw the line. If only mineral production is considered, then the value created by the construction minerals industry is in excess of 20 Billion Euro. This estimate is in good agreement with the figures published by UEPG (Union Européenne des Producteurs des Granulats), which states that the 17,000 member companies employing 250,000 persons produced 2.6 billion tonnes of construction minerals corresponding to an annual turnover of 18.5 billion Euros.

If, however, the construction industry is considered as a whole the value was 342.6 billion Euros in 1997. The true value is probably between these extremes. According to Eurostat, about 202,000 persons were employed in 2001 in the non-energy extractive industry of the EU-15 Member States. Another 71,000 persons have to be added to this estimate to include those which are employed by the non-energy extractive industries of the New Member States.

A socio-economic study of the *Finnish mineral industries* indicates that job creation in downstream industries using mineral raw materials is 35-40 times the number of people working directly in the mineral sector.

#### **4.5.5 Environmental Performance**

Environmental considerations are an important aspect of the planning and operation of minerals extraction sites in all Member States. In most Member States the larger producing companies have established environmental quality management systems and report on their environmental performance. Many of the smaller mineral producers in Europe do not have the resources to implement such systems. One of the recommendations for overcoming this was that small enterprises should be supported with the implementation of new regulations.

No standardised approach to environmental performance reporting exists in the Member States. Most of the large mineral producing companies in Europe do however report on environmental performance in their Annual Reports. In some Member States the polarisation between environmental groupings and mineral producers no longer exists and meaningful ways of collaboration have been found to mutually benefit both sides.

A matter of concern to the European minerals producers is the continuing shifting of goalposts as far as environmental standards are concerned. This has adverse effects on investments in mineral development which is long term in nature. Another concern is that environmental standards increase continuously. This trend has to be seen against the life span of mineral production projects which ranges from 20 to 100 years.

## 4.6 Best Practices

Sustainability of mineral supply is mainly about ensuring the ongoing supply of minerals to society whilst maintaining,

- An optimal flow of benefits for all stakeholders, and
- Minimal negative impacts to the environment and society.

Best legal and administrative practices are considered to be practices which are transparent, clearly understood by all stakeholders, which safeguard the rights of all concerned parties and lead to a satisfactory result in a reasonable time and at an acceptable cost.

### 4.6.1 Minerals Policy

The production of a broad minerals policy based on the concept of sustainability which defines the role of minerals at *all relevant levels, from national, regional to local*, is considered good practice. Minerals policy needs to have a clear link to other spatially oriented policies, Acts, Strategies or Plans, and in particular, land use plans.

Best practices are based on a clearly stated minerals policy that is harmonized with other sector policies and the government, and with industry and social interests and goals. All procedures should be transparent and carried out in an adequate time frame.

It is important to continue and further develop social partnership/dialogue among government, industry and social partners (local community, NGOs, consumers, labour force, etc.). This would provide and in many cases increase the validity of the social licence to mine. A transparent process of minerals supply can be achieved through obligatory and voluntary reporting by the government and industry. Industry in particular should be encouraged to report its economic, environmental and social performance to stakeholders, not only shareholders.

Some of the Royalties from mining operations could be used for policy improvements; especially with regard to information support (monitoring and research data and information) at the national and also local level. This could also lead to a useful set of indicators for different stakeholders (policy-makers, decision-makers, general public, environmental NGOs and others).

### 4.6.2 Authorising Minerals Extraction

The authorisation of mineral extraction by a public authority is a central element of mineral planning in all Member States. Two aspects of authorisation have to be considered, the application requirements, and the authorisation process.

#### 4.6.2.1 Application Requirements

Experience shows that “Standardised Application Forms” have the advantage that the applicant knows in detail what information, and in which form, he has to submit.

The use of “Standardised Application Forms” is considered good practice.



In some Member States the authorities provide quite extensive services to project owners with regard to applications for permits and licences, and even prepare other documents necessary for approval.<sup>39</sup> No fees are charged for this service, except for direct costs in order to, for instance, visit a prospective site.

#### **4.6.2.2 Authorisation Process**

As far as the structure of the authorisation process is concerned no clearly better structure was found although there are indications that structures where all decisions are taken at the same level have certain advantages. This is largely due to the fact that the communication between officials representing the different subject matters tends to be better. This helps save time.

The responsibility for minerals, whether state owned or state controlled, tends to be exercised at a higher level of responsibility than is the case with landowner minerals. There appear to be two reasons for this practice, namely the value which society attaches to the rather scarce scheduled minerals and the practice that the bulk of landowner minerals is used in close proximity to where they are extracted. Since landowner minerals are used primarily for construction and infrastructure development it is good practice to regulate them at county or even municipal level.<sup>40</sup>

The authorisation process often involves separate investigations of different subject matter, for example environment protection, nature conservation, water quality and forests. In some Member States the authorisation process provides for sequential assessment of these issues, whereas in other Member States the assessments are undertaken in parallel. Experience in Member States shows that parallel assessment is clearly a better practice in terms of the time required to complete the authorisation process.

By far the most important factor controlling the time required for the completion of the authorisation process is land use planning. The crucial element is the extent to which information relating to mineral deposits is already incorporated in existing land use plans. Examples from Belgium, Denmark, England and Wales show that the authorisation process for mineral extraction projects that are situated in declared extraction areas (i.e. *potential sides*) is significantly shorter than for projects in areas that have not been set aside for minerals extraction.

##### *One stop-one shop approach*

Canada has a “one-stop-one shop” approach in which all authorities involved join together to meet the applicants instead of the applicants having to go to meet the various authorities separately.

#### **4.6.3 Land Use Planning**

Land use planning for minerals should be done at a high level (National or regional) and should consider long time periods.<sup>41</sup>

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<sup>39</sup> Authorities should be helpful, but not taking side when decisions need to be taken (Solar, S.).

<sup>40</sup> Note: Land use planning concerning landowner minerals and in particular construction minerals should be done at a higher level- See Land use planning.

<sup>41</sup> 20 years and more.

Land use planning is an integrative process, in which different claims of utilization are subjected to an evaluation process on the basis of which the land use planning authority identifies areas where in principle no minerals extraction will be allowed, areas where extraction may be allowed but are subject to certain conditions, and areas where in principle extraction will be permitted. For land use planning to be an effective tool it is essential that it is based on a solid and well substantiated data base and that it includes all necessary information. From a minerals development point of view it is crucial that the information concerning mineral deposits is entered into the land use data bases to ensure that minerals are considered in all land use planning decisions.

Incorporation of minerals in land use planning decisions is considered **good practice** and essential for a sustainable minerals supply in Europe.

#### **4.6.4 Codes of Practice and Technical Guidance Notes**

Codes of practice and technical guidance notes are important instruments to achieve environmental and technical excellence, and many examples across the EU and in other regions of the world were identified during this study.

### **4.7 Recommendations**

The study of minerals planning policies in the EU- Member States has identified a number of problem areas. These can be divided into problems of a general nature and specific problems. The Chapter on “Best Practices” contains a number of suggestions on how some of the more specific problems can be addressed. Here issues of a more general nature will be dealt with. This will be done by presenting the nature of the problem. This will then be followed by a recommendation.

#### **Issue Nr. 1:**

*The limited knowledge of the importance of the non-energy extractive industry in Europe.*

The study has shown that the official statistics concerning the non-energy extractive industries are incomplete. The most serious shortcomings are in the important areas of industrial minerals and construction minerals and in particular aggregates. The problem is caused by the structure of this sector which in many Member States comprises of a substantial number of medium, small and very small enterprises. These are not covered by the national statistics and consequently also not by Eurostat. The second difficulty arises from the fact that many enterprises in this sector are vertically integrated and that it is difficult to clearly identify which part of the business is minerals extraction and which is processing and value added. As a result of the incomplete statistical data the economic and strategic importance of the sector is not fully appreciated.

#### **Recommendation:**

It is recommended that a study group is established to address this issue and to come forward with a proposal how more complete and reliable data on the economic importance of the sector can be collected on an ongoing basis. The following data should be collected:

- Production

- Employees
- Revenue generated
- Land used for mineral extraction
- Land returned for other uses.

**Issue Nr. 2:**

*The lack of appreciation of the strategic importance non-energy minerals and in particular construction minerals (aggregates) for the development of Europe.*

The study has shown that about 3 billion tonnes of aggregates are produced and used in Europe annually. These aggregates are required by the construction industry for building and infrastructure development. In addition the industrial minerals sector is of global significance. The minerals legislation of most Member States does not recognize the growing importance of these sectors of industry. This is particularly noticeable in the areas of land use planning and access to mineral deposits.

**Recommendation:**

It is recommended that at the European and national level more attention is given to the growing importance of industrial minerals and construction minerals (aggregates), including at the political and legislative level. Issues of particular importance are access to mineral deposits in areas of high industrial activity.

**Issue Nr. 3:**

*In most Member States non-energy minerals are allocated a low priority by the governments of the day.*

The study has shown that only a small number of Member States have clearly defined national minerals policies although all Member States subscribe to the concept of sustainable development. The low level of importance attached to non-energy minerals is seen as a disadvantage in land use planning. Land use planning is a matter of deciding between different options of land use, and deciding on priorities. As a result, access to mineral deposits is becoming increasingly more difficult with the effect that many mineral deposits are no longer accessible. This however impacts on the sustainability of the minerals supply from local mineral resources. This could develop into a long term supply problem particularly in the case of aggregates which are consumed in such large quantities and can not be imported readily from most parts of Europe.

**Recommendation:**

It is recommended that Member States examine how the sustainable supply with non-energy minerals and in particular with construction minerals can be secured in the light of increasing demands.

**Issue Nr. 4:**

*In most Member States access to mineral deposits is becoming more difficult.*

Under issue Nr. 3 reference was made to land use planning which is considered to be the key to sustainable minerals supply. The study has identified that one of the problems in connection with land use planning is lack of information on mineral deposits within land use data bases. As a result minerals are often not being considered in land use planning.

**Recommendation:**

It is recommended that Geological Surveys become more actively involved in land use planning and as a matter of priority provide information on mineral deposits for land use data bases.

It is also recommended that land use planning is done at two levels, namely the strategic long term level looking at the national level at time frames of several generations and at the operational level, where all details have to be considered.

It is further recommended that minerals extraction areas are identified in land use planning systems and protected against other potential uses.

**Issue Nr. 5:**

*The time required for authorization of mineral extraction tends to be very long and the outcome is often uncertain.*

The study has shown that the authorization process can take several years. This has resulted in situations where the proposed extraction period is the same duration as the authorization process. Furthermore the cost of the authorization process is such that it is no longer affordable for small operators. The main causes for this development are the large number of authorities involved in the process, the complexity of the environmental assessment procedure and the increasing involvement of the public.

**Recommendation:**

It is recommended that attention is given to how the authorization process can be made more transparent and stream-lined. Attention should be given to the concept of “one stop- one shop” which is being applied successfully in Canada and based on the principle of parallel processing and intense cooperation between the authorities.

**Issue Nr. 6:**

*The increasing environmental pressures on the non-energy extractive industries.*

In recent years numerous EU-Directives on environmental matters have been issued. These have had a significant effect on the extractive industries both in terms of access to mineral deposits as well as in terms of complexity and cost of the authorization process. Examples are amongst others the Habitats-Directive and the EIA-Directive.

**Recommendation:**

It is recommended that in addition to the environmental initiatives at the EU-level initiatives which address the sustainable supply of Europe with natural resources and in particular mineral resources are also being considered.

## Chapter 5 Appendix

### Project team:

Name	Background	Countries of Responsibility
Horst Wagner  Günter Tiess	Univ. Prof. Dipl.-Ing. Dr. mont Head of Department of Mining Engineering and Mineral Economics University Leoben Dr.-Ing. Franz-Josef Strasse 18 8700 Leoben, Austria	Coordinator of the study Austria, Germany
Kai Nielsen	Professor, Dr.- Ing. Department of Geology and Mineral Resources Engineering Norwegian University of Science and Technology Sem Sælands vei 1 NO-7491 Trondheim	Norway, Denmark, Sweden, Finland
Slavko Solar	Dr.-Ing. Slovenia Geological Survey, Ljubljana	Slovenia
Tamás Hamor	Dr.- Ing. Hungarian Geological Survey, H- 1143 Budapest, Stefánia út 14.	Hungary; Contribution and comments to Chapter 4.2: “ <i>Relevant EU- legislation and policy impacting on national minerals policies</i> ”
Paul Ike	Dr.Ir University of Groningen Faculty of Spatial Sciences Department of Infrastructure and Environmental Planning PO Box 800 9700 AV Groningen The Netherlands	Netherlands, Great Britain, Ireland
Andre Vervoort	Prof. Dr.-Ing. Research group Mining, Department of Civil Engineering, KULeuven, Kasteelpark Arenberg 40, 3001 Leuven, Belgium	Belgium, Luxemburg, France
Jose Antonio Espi	Dr. –Ing. Departamento de Ingeniería Geológica Escuela Superior de Ingenieros de Minas de Madrid. Ríos Rosas 21 28003-MADRID Spain	Spain, Portugal, Italy
Zacharias Agioutantis	Prof. Dr.-Ing. Head of the Department of Mineral Resources Engineering, Technical University of Crete; University Campus, 73100, Hania, Greece	Greece
Wieslaw Koziol	Prof. Dr.-Ing.	Poland, Baltic States

Name	Background	Countries of Responsibility
	Department of Opencast Mining of the University of Science and Technology, Faculty of Mining and Geoengineering, al. Mickiewicza 30, 30-059 Krakow, Poland	
Viliam Bauer	Prof. Dr.-Ing. Faculty of Mining , Ecology and Process Control and Geotechnologies of the Technical University of Kosice-Slovakia, Letna 9 042 00 Kosice, Slovakia	Slovakia, Czech Republic

Further more:

***DG Enterprise:***

Dr. Paul Anciaux and Dr. Tom Simpson

***Austria:***

Markus Ramler (Dipl. Ing.), Claudio Vallefuoco (Dipl. Ing.), Department of Mining Engineering and Mineral Economics University Leoben

***Estonia, Lithuania:***

Professor Dr.-Ing. Wieslaw Koziol, M.Sc. Pawel Kawalec

***Germany:***

RA Wolf Müller, German Building Materials Association (Bundesverband, Baustoffe, Steine und Erden e.V.), Germany

RA Reinhard Fischer, Bundesverband der Deutschen Kies- und Sandindustrie, Germany

Dr. F. Dingethal , Bayrischer Industrieverband Steine und Erden e.V. , Germany

***Italy:***

Dr. Giovanni Badino, Politecnico di Torino

Dr. Angelica Frisa, Morandini Politécnico di Torino

Dr. Marcos Sertorio, Università di Torino

***Latvia:***

Dr. Marcin Chodak.

Department of Opencast Mining, University Krakow

***Poland:***

Professor Dr.-Ing. Ryszard Uberman, M.Sc. Anna Ostrega

***Poland and Baltic States:***

Director of project: Professor Dr.-Ing. Wieslaw Koziol,

***Portugal:***

Dr. Carlos Eduardo Feio Magno, Instituto Geológico e Mineiro