

## Minerals Planning Policies in Europe

### Razvojne usmeritve planiranja mineralnih surovin v Evropi

HORST WAGNER<sup>1</sup>, GÜNTHER TIESS<sup>1</sup>, SLAVKO ŠOLAR<sup>2</sup>, KAI NIELSEN<sup>3</sup>

<sup>1</sup>Department of Mineral Resources and Petroleum Engineering, University of Leoben, Austria;

<sup>2</sup>Geological Survey of Slovenia, Ljubljana, Slovenia;

<sup>3</sup>Department of Geology and Mineral Resources Engineering,  
Norwegian University of Science and Technology, Trondheim, Norway.

**Received:** June 2, 2005    **Accepted:** September 15, 2006

**Abstract:** This paper summarizes the main results of a study of minerals planning policies in Europe which objective was to provide information on different approaches to mineral planning policies, to evaluate them and to highlight best practices in the frame of sustainable development.

**Izveček:** V članku povzemamo temeljne rezultate študije o razvojnih usmeritvah na področju planiranja mineralnih surovin v Evropi. Namen študije je bil predvsem zbrati informacije o različnih pristopih k planiranju mineralnih surovin, te pristope ovrednotiti ter izpostaviti primere dobre prakse, ki temelje na načelih trajnostnega razvoja.

**Key words:** mineral resources, policy, planning, European Union.

**Ključne besede:** mineralne surovine, razvojne usmeritve, planiranje, Evropska Unija.

## INTRODUCTION

This paper summarizes the main results of a study of minerals planning policies in Europe. The objective of the study was to provide information on different approaches to mineral planning policies and practices in the Member States. In the course of the study it was found that there are some general issues, which have a major impact on the non-energy extractive industries in Europe.

The study has shown that contrary to the public opinion the production of industrial minerals and construction minerals is significant, the former accounting for about 20 percent of global production, the latter

amounting to about 3 billion tonnes per annum. In contrast the importance of metal ores has diminished although metal production in some European countries can still be significant. The study revealed that very few Member States have clearly defined mineral policies. Common to most mineral policies is the emphasis on reducing minerals consumption and recycling, whereas the important aspect protecting access to minerals resources is not adequately addressed by most policies. Access to mineral deposits is regulated in most Member States by land use legislation and administration. Information on mineral deposits in land use planning databases tends to be scarce. This together with the absence

of formal mineral policies places minerals at a disadvantage in land use decision-making. The emergence in the recent past of environmental legislation and in particular environmental impact assessments has had a crucial effect on the duration of the authorization process for new mineral projects. Examples are given how mineral planning is handled in some of the Member States.

This paper concentrates on the general issues rather than discussing specific mineral planning policies and practices of the individual Member States. Only where appropriate will examples be given of specific mineral planning policies and practices. All details have been presented in a very comprehensive report, which has been submitted to the European Enterprise Directorate at the end of November 2004.

## **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>[1]</sup>:

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

### **Metalliferous minerals**

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 a situation where the requirements of the industry have to be met, with a few

exceptions, through imports of metal ores. Important metal ores mined in Europe are zinc, lead and copper. Production of all other metal ores is less than 2 % of global production. 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.

### **Industrial minerals**

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. In the field of industrial minerals, European producers play a major role and account for about 20 % of total world production. Europe is a major producer of kaolin, bentonite and salt.

### **Construction minerals**

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 Great Britain is a new development that could have important consequences for parts of Europe, which can be reached by bulk carriers. Assessment of the actual quantities of construction minerals produced in Europe is difficult because official statistics do not cover small and very small enterprises, which produce significant quantities of construction minerals.

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

Ores	Production 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 Minerals)	% Proportion World
Baryte	398,936	5.8
Bentonite	2,586,585	24.7
Diatomite	128,387	12.0
Feldspar	4,684,413	52.1
Fluorspar	314,381	7.1
Graphite	21,479	3.6
Magnesite	2,649,830	19.0
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

### Annual per capita minerals consumption in Europe

Annual per capita consumption of minerals in the European Member States varies considerably, with consumption figures ranging from less than 3 tons per capita and year in some of the new Member States to more than 15 tons per capita and year in some of the other states.

## SUSTAINABLE DEVELOPMENT AND NATIONAL MINERALS POLICY

### Sustainable Development

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 development<sup>[2]</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. It made important statements such as:

- Mining is increasingly influenced by other competing land uses, such as urban development, agriculture, nature conservation;

- A 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 are the use of non-renewable resources themselves, which may mean that these “resources will not be available for future generations”<sup>[3]</sup> and the quality of the environment, pointing to general and specific risks since mining may affect the quality of the environment.

Recent major environmental accidents involving tailing ponds on metal mines have switched the attention at EU level from sustainable development in the minerals industry to the safety and environmental hazards of mineral extraction. An example was the Communication from the Commission on “Safe operation of mining activities: A follow-up of recent mining accidents”, COM (2000) 664. From this followed three key follow-up actions, namely the amendment of the Seveso II Directive, an initiative on the management of mining waste, and a best available technology (BAT) reference document under the IPPC Directive. As a consequence of these accidents some of the important points raised in COM (2000) 265 have not been addressed.

Most Member States have taken measures to implement the principles of sustainable development. The emphasis has been on environmental protection, promoting reduced use of minerals, and recycling of materials. Examples of this are the policies adopted by the Netherlands and Sweden.

The important issue of safeguarding mineral deposits for future generations by protecting them from other land uses has been addressed by only but a few of the Member States. The Swedish landbank system developed by declaring various types of mineral deposits to be of national interest in accordance with the Environmental Code, and protecting the resources from being sterilised by other land use development, must be considered to be successful with regard to the future sustainability of minerals supply in Sweden. Austria is working on a raw materials plan, which as one of its main objectives has the protection of access to mineral deposits.

### **Minerals Policy**

Closely linked to the issue of sustainability of minerals supply is the question of minerals policies. The survey of EU-policies and Member States has shown that very few have comprehensive and published mineral policies. This is a marked change from the situation some years ago when minerals played a focal role in Europe as reflected by the European Coal and Steel Community, the original predecessor of the European Community. Member States, which have such policies, are amongst others the Czech Republic, the Netherlands and some of the German Federal States. Minerals policies are particularly important in connection with land use planning which is the main instrument for securing access to mineral deposits. As land use planning is about choices between different options minerals tend to be disadvantaged in the absence of clearly defined minerals policies. The need for minerals policies has been stressed by REGUEIRO from Spain in a recently published paper<sup>[4]</sup>.

**General Legal and Policy Framework**

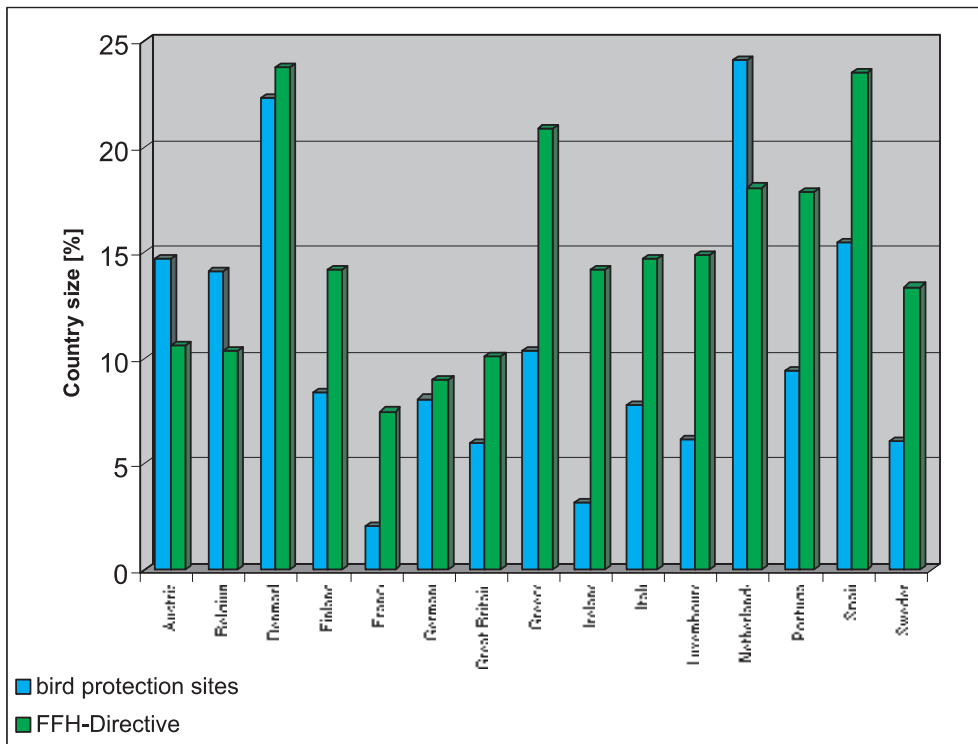
All Member States have some form of hierarchical government structure, with the national government at the apex and legal and administrative structures following the “cascade” principle, i.e. regional, county and local law and practices, which are *consistent* with national law and practice and, especially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

*Impact of EU-legislation on non-energy extractive industries*

The emergence of environmental protection legislation/policy at the EU-level has added a number of additional factors that impact 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. Table 1 at the end of the paper provides an overview of recent EU-legislation impacting on the non-energy extractive industries.

Many national laws were/are amended to implement EU-legislation (especially in the new Member States). While this is having a harmonising effect with regard to environmental matters, it has had an impact on the extractive industry due to increasing the number of restrictions on mineral extraction and increasing the time and costs required for approval. Both aspects have adverse effects on available mineral reserves. Reports from various countries show that the impact is more strongly felt by small extraction companies. Considering that the



**Figure 1.** Summary of land areas designated as Natura 2000 and bird protection areas.

largest sector of the European non-energy extractive industries, namely the construction minerals sector, consists of predominately small to very small enterprises, this trend could ultimately lead to a change in the structure of the industry with possible consequences for the local supply of construction minerals and increased minerals transport.

Extractive activities depend on geology and the particular location of mineral deposits. Access to the deposits is, therefore, of crucial importance for the competitiveness of the extractive industry. This, however, is made difficult by some of the directives. The most important impact results from the so-called Natura 2000 areas, a FFH – Directive. Mineral deposits that can be used for extraction are often found in undeveloped, mostly natural areas, thus the Natura 2000 protection areas can have a serious impact on the raw material industry in the field of land utilization. Areas set aside for nature protection vary considerably throughout Europe (Fig. 1).

#### *Principal Legislation Controlling Mineral Extraction*

The principal legislation governing mineral extraction in the Member States trends to be strongly influenced by the mineral rights issue. Historically mineral rights belong either to the state or to the owner of the land. State owned minerals in most countries are metal ores, rare industrial minerals and minerals of high purity. Landowner minerals are the bulk of the industrial minerals and the construction minerals.

In most Member States the extraction of state-owned minerals is covered by a specific

mining law. In many Member States the extraction of construction and most industrials minerals is covered by some other law, i.e. “Abgrabungsgesetz” in some German Federal States, land use planning laws or environmental laws. There is a trend to regulate minerals extraction through environmental laws, i.e. in Sweden.

The mineral rights no longer reflect the changing importance of industrial minerals and construction minerals (aggregates) which together account for more than 95 % of all non-energy minerals mined in Europe. Construction minerals in many parts of Europe are becoming of strategic importance and interstate trade of construction minerals is increasing.

In the light of the increased strategic importance of construction minerals in most European states and the difficulties encountered by the construction minerals industries in connection with the issuing of new extraction permits the question has been raised on several occasions whether it is still appropriate to consider landowner minerals as being minerals of low national importance<sup>[4]</sup>.

#### **Land Use Planning**

Short, medium and long-term access to mineral deposits is crucial for the sustainable development of the minerals industry. Two factors play a key role in this regard, namely whether a national minerals policy exists and the legislation and practice of land use planning.

Land use planning is an integrative process, in which different claims of utilization are subjected to an evaluation process. For land

use planning to be an effective tool it is essential that it is based on a solid and well substantiated database and that it includes all necessary information, including information on mineral deposits. The study has shown that in many Member States information on mineral deposits is not either not available at all or incomplete in land use planning data bases. From a minerals development point of view, it is crucial that the information concerning mineral deposits is entered into the land use databases to ensure that minerals are considered in all land use planning decisions. Geological surveys have to make the data on mineral deposits available. The need for closer involvement of national geological surveys in land use planning has been identified as one of the most important issues by the coordinating committee of the geological surveys of the Federal States in Germany. Similar views have been expressed by REGUEIRO of Spain<sup>[4]</sup>.

Key factors influencing land use planning are:

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

Policy and legislation taken at EU-level have shown to have a major impact on national land use planning (e.g., European Spatial Development Perspective (ESDP), NATURA 2000, etc.).

The structure of government in the Member States is another critical factor in the planning process for mineral extraction (hierarchical planning). The survey of Member States has shown that in most of them land use planning is done at two levels, namely at regional and

at district or municipal level. Since mineral deposits are not uniformly spread throughout a country land use planning for minerals at a low tier of government has been found to be not without problems and does not promote sustainable solutions. The view has been expressed by a number of industry representatives that land use planning for minerals should be done at high level - national or regional level - and should consider long time periods, which depending on the mineral could be 20 to more than 50 years.

A principal distinction between Member States is the degree to which land use plans provide detailed prescriptive information on where mineral extraction might be acceptable and where it is not acceptable. Some Member States have identified areas for minerals extraction, areas where minerals extraction may be possible subject to certain criteria and areas where minerals extraction is not allowed. Examples are the Scandinavian countries, Denmark, Belgium, certain Federal States of Germany and some provinces in Austria as well some regions in France. Experiences in some of these states have shown that the time required for the authorization process tends to be significantly shorter for projects situated in declared extraction areas.

Some Member States provide rather policy guidance and contrast the above-mentioned approach; for example the procedure adopted in England and Wales is that at ministerial level regional demand forecasts for aggregates are made for periods of 7 to 10 years. It is then up to the local authorities to ensure that sufficient extraction sites are available at local level to meet the demand.

## **Authorization of mineral development**

The issue of permits and authorisation depends to some extent on the mineral rights. For minerals permits to conduct mineral exploration work and to exploit minerals are required in all Member States for minerals that are important to the state or belong to the state. In the case of landowner minerals the situation differs. The permits fall into the following areas: mining rights, mining licences (exploration, mining), permits according land use plan, other permits, especially health and safety, environmental permits.

The procedures for granting mining licences have been updated in most Member States in recent years to incorporate more fully environmental impacts of minerals extraction in the approval procedures.

### *Applications*

The authorisation process for mineral extraction defines the details required by the applicant and the public bodies involved in the process. To assist the applicant with the preparation of application some of the Member States (Belgium, Denmark, England and Wales) have standard application forms.

An important aspect of the authorisation process is which public body is the lead authority and the relationship between the various public bodies involved in the process. 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. This tends to prolong the authorisation process. 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 as for example in the Netherlands.

### *Environmental impact assessments*

A key element of the authorisation process is whether or not a project application requires an environmental assessment (EA). 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 EA 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 EA. Examples are Greece, Norway, Portugal and all quarrying operations in France.

### *Right to appeal*

The study has shown that appeals are one of the major causes for delays in the authorisation process. Most Member States have the right of appeal by the applicant and by third parties as part of their authorisation process. As far as the applicant is concerned this right is confined in Denmark and Finland to strictly legal matters and not to the outcome of the application. All Member States except Great Britain have the right for appeal by third parties in their authorisation process. In Finland, Greece and Sweden this right is however confined to local residents. In Denmark appeals by third parties are



uncommon. This can be attributed to dealing with contentious issues at the planning stage.

#### *Funding of restoration work*

An issue, which is of concern to most Member States, is the funding of restoration work. For this reason, most of the Member States provide in their minerals legislation for mechanisms to secure the funding of restoration work. This is being done through provisions for the establishment of closure funds, bank guaranties or other forms of security. These arrangements are part of the extraction permissions. At this stage there is insufficient information to assess which arrangements are best.

#### *Monitoring*

Monitoring is a central element of the authorisation process. Its objective is to ensure adherence to regulations and good mining and environmental practices. In most Member States the staff of the mining authorities is qualified mining personnel having been trained on mines and/or at appropriate universities. The situation is different when the supervising and monitoring authority comes from lower tiers of government, as is the case with most landowner minerals. In these cases the inspection personnel tends to have a much broader background in the fields of works inspection and health and safety, but is often lacking in specific mining skills.

## **EVALUATION OF THE IMPACT OF MINERAL POLICIES/SYSTEMS**

### **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 have a minerals legislation which dates back to a time when minerals were considered as one of the pillars of economic development and for this reason minerals were given a high legal status as reflected by the category of “free minerals”, i.e. Austria, Germany, Finland, Norway, and Sweden.

Some of the Member States have a principal minerals legislation that is based on the concept of sustainable development. Most Member States delegate implementation of minerals policy issues 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 policies, 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 reference is 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<sup>[5]</sup>.

## Legislation

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. Usually a distinction is made between more common minerals with an intrinsically lower value (construction minerals and some of the industrial minerals) with the mineral right belonging to the landowner and minerals of higher intrinsic value or of national importance (e.g. metallic ores) with the mineral right belonging to the state. With regard to the principal legislation controlling mineral extraction there, exists – in addition to the specific minerals legislation (i.e. mining act) other legislation, such as an excavation act, planning act or other laws that impact mineral extraction.

In some Member States the 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). In addition to the specific minerals or raw materials legislation, there are a number of other laws, which are of direct or indirect relevance to minerals extraction in the Member States (e.g. environmental aspects). 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.

## Administration

The study has shown that a number of different laws, such as for mining law, nature conservation law, water law, waste law apply to mineral exploitation and that these laws are administered by different government, provincial and local authorities. 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 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 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.

An example is the applications for the exploitation of state owned minerals and free minerals in Austria. The other extreme are states where the role of national authorities is to define policies and to provide guidance but not to become operationally involved in the process. Examples of this approach are England and Wales. In addition, in these countries the lower level authority is charged with the responsibility to ensure that adequate mineral reserves are available for extraction (landbanks). In all other Member

States the issue of mineral reserves is controlled by private interests and initiatives. The authorities in these cases act as permitting agencies. Between those extremes falls 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. Finally, it should be noted that in a number of Member States minerals are not very well covered and considered in the land use planning process.

*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 an 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 especially the preparation of Environmental Impact Assessments (EIA's) is a complex issue and tends to take up much of the time.

## **Minerals planning**

The level at which planning for minerals is done is crucial. At the national level regional demands for minerals can be considered and included in overall mineral development plans taking into consideration the distribution of mineral resources in the country. However, at this level it is impossible to include all detailed site-specific considerations. This is the responsibility of lower level planning. Lower level planning on the other hand lacks the broader background and the long-term vision. It appears therefore that minerals planning has to be done at two levels, namely long-term strategic planning at the national or at least regional level and detailed planning at the lower level. Models for such an approach are for instance England and France.

## **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 provide services to it, and also the municipalities involved. 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 cannot be said for the bulk of minerals produced in Europe, namely construction minerals. For example in Germany and Austria the production of construction minerals is underestimated by the official statistics by as much as 50%. 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. According to figures published by UEPG (Union Europeenne des Producteurs des Granulats), which represents 17,000 companies employing 250,000 persons producing 2.6 billion construction minerals, the annual turnover of the construction minerals industry amounts to 18.5 billion Euros. To this have to be added the production values of companies not belonging to UEPG and the production from the New Member States.

Comparing the employment figures quoted by UEPG, which do not include companies from the New Member States, with the EU-15 figures and considering that the EU-15 figures are not confined to construction minerals but include all non-energy extractive industries, it is apparent that the official EU figures on the non-energy

extractive industries are a serious underestimation of the economic importance of the sector. A socio-economic study of the finish mineral industries indicate that job creation in downstream industries using mineral raw materials is 35-40 times the number of people working directly in the mineral sector.

### **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<sup>[6]</sup>. 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<sup>[7]</sup>. 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.

## CONCLUSIONS

Minerals and in particular construction minerals are crucial for the long-term development of Europe. In the case of construction minerals the consumption patterns and logistics are such that most European states will have to rely on local supply of such minerals.

The absence of clearly defined minerals policies, incomplete official statistical data on minerals production and consumption as well as the contribution of minerals to the European and national economies, and the lack of information on mineral resources in land use data banks indicate that minerals are a low priority issue in Europe.

In many Member States construction minerals and in particular aggregates are still considered as minerals that occur in abundance and require little protection. This can have long-term consequences for the sustainable supply with construction minerals.

As part of the concept of sustainability mineral resources should be considered as an integral part of the land use planning system and process.

Environmental legislation at the EU-level has a major influence on minerals extraction in Europe, both in terms of access to mineral deposits as well as in terms of cost of production. Environmental legislation has not been balanced by initiatives, which recognise the importance of minerals for the long-term development of Europe.

Minerals planning has to be done at two levels, namely long-term strategic planning at the national or at least regional level and detailed planning at the lower level.

Experiences from the different Member States show that there is potential for improving administrative procedures for the minerals industries.

## Acknowledgements

This work, presented at SDIMI 2005, was commissioned by the European Enterprise Directorate.

Within the framework of the study a country report was made for each EU member state. Markus Ramler (University of Leoben), Slavko Šolar (Geological Survey of Slovenia) and Simon Friškovec (Ministry for Economy, Directorate for Energy, Mining sector; Slovenia) wrote the Country report for Slovenia. The country report of Slovenia and the complete Study of minerals planning policies in Europe were not yet broadly discussed in Slovenia.

## REFERENCES

- [1] European Commission (2004): *DG Enterprise working paper, preparatory work on the assessment of the competitiveness in the EU-Non-Energy Extractive Industries*, pp. 5-8.
- [2] European Commission (2001): Communication of the Commission 264: *A sustainable Europe for a better world: a European Union strategy for sustainable development*.
- [3] EU (2000): *Promoting sustainable development in the EU non-energy extractive industry*" (COM (2000) 265, Section 2...3 "Environmental Impact").
- [4] REGUEIRO, M., MARTINS, L., FERAUD, J. & ARVIDSSON, S. (2002): *Aggregate Extraction in Europe: The Role of the Geological Surveys*. Raw materials planning in Europe. Change of conditions! New perspectives: Conference transcript and field trip guide: Tagungsband und Exkursionsführer. Krefeld: Geologischer Dienst Nordrhein-Westfalen, pp. 187-198. (2002)
- [5] Quarry Association of Switzerland (2002): Kurze Transportdistanzen begrenzen schädliche Umweltauswirkungen. *Sand und Kies*, Januar/Februar 2002, pp. 4-7.
- [6] HÄGELE, H. (1988): Sicherheit und Gesundheitsschutz im Bergbau: Auswirkungen von EU-Regelungen auf das Arbeitsumfeld und die wirtschaftliche Situation der Unternehmen. In *Studien der ISG Sozialforschung und Gesellschaftspolitik*. Band 23 Köln 1998.
- [7] The Forum Rohstoffe, WWF (2003): Forum Rohstoffe und WWF vergeben den Naturschutzpreis 2003. *Stein&Kies*, November-Dezember 2003, p.1.