European Commission

Final Report

EVALUATION AND EXCHANGE OF GOOD PRACTICE FOR THE SUSTAINABLE SUPPLY OF RAW MATERIALS WITHIN THE EU

ANNEX A – GOOD PRACTICE CASES

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CASE 1 - SWEDEN'S MINERAL'S STRATEGY: FOR SUSTAINABLE USE OF SWEDEN'S MINERAL RESOURCES THAT CREATES GROWTH THROUGHOUT THE COUNTRY

Introduction

Sweden is Europe's leading ore and metal mining producer and in recent years the mining and minerals industry generally has experienced strong growth. However, to maintain and extend the commanding position of the industry, it is recognised that action is required to overcome and address barriers to its sustainable expansion. With this ambition in mind, a Strategy has been developed that acknowledges the importance of the EU's Raw Materials Initiative[1].

The overall objective of Sweden's Minerals Strategy is to increase the competitiveness of the mining and minerals industry. In this context, Sweden's mineral assets are to be exploited in a long-term sustainable way, with consideration of ecological, social and cultural factors, so that natural and cultural environments are preserved and developed.

Sweden's Mineral Strategy establishes five key objectives that are supplemented by eleven action points. A total of nineteen complementary measures have been proposed to help realise the key aims of the strategy and these cut across a diverse selection of relevant policy areas. One of the overall impacts of the introduction of the Strategy is that it has better positioned a range of governmental bodies (including the Geological Survey of Sweden), industry and other stakeholders in their joint oversight and coordination of issues and initiatives of strategic importance to the sector. In addition, the Swedish Minerals Strategy takes an integrated approach in order to create beneficial conditions, and identify opportunities and challenges so that the mining and minerals industry can grow sustainably and keep pace with the opportunities provided by today's strong international demand for metals and minerals.

Theme

The scope of the Strategy is broad and touches upon all of the key themes that are of interest to this study. The implementation of the nineteen measures (which are listed at the end of this case study) will:

- **improve the applicable legal framework** (the Strategy does not reform existing or introduce new legislation but it helps to improve its correct and consistent enforcement e.g. through the development of guidelines to help stakeholders interpret the legislation);
- **improving the governance of developments relating to raw materials** (the Strategy has a major focus on improving the governance of mining activities and seven measures have been developed to support enhanced interaction and coordination between government, industry and other stakeholders);
- **strengthen the information framework and the knowledge base in relation to raw materials** (e.g. in particular in relation to issues around resource efficiency such as assessments of mining and recycling potential, development of shot rock production data and assessment of critical raw materials);
- **improve land use planning processes** (e.g. developing comprehensive plans across several municipalities through coordinated initiatives);
- **improve the permits and authorisation process** (e.g. the strategy will compare internationally environmental regulations and lead times in the permitting process).

[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0699:FIN:en:PDF

Reasons for Highlighting this Project

Sweden's mining economy is exceptional in Europe and Sweden's government intends to extend and maintain the country's competitive advantage in this field. However, to achieve this, it is understood that much more than a comprehensive regulatory framework and disconnected interventions are required to boost the performance of industry. Sweden's government recognises that an overarching strategy complete with wide-reaching actions are necessary in order to robustly engage with the multifaceted policy areas that the mining industry is exposed to. The case study provides a good example of how, through an open and interactive process with stakeholders, a comprehensive strategy can be designed to meet the needs of industry going forward. The Strategy is supported by a budget that sufficiently funds a number of selected measures and is overseen by a stakeholder group that is tasked to perform monitoring activities and provide advisory inputs. The stakeholder group is chaired by the Minister for Enterprise.

Description

Key Issues Addressed by the Strategy

The Swedish Mineral's Strategy has been introduced in response to a number of key challenges that have been identified by stakeholders. To begin with, the Strategy echoes some of the concerns set-out in the EU's Raw Materials Initiative, namely that demand for resources is intensifying globally, the efficient and safe supply of metals and minerals are critical for Europe's economy, in a number of areas metals are scarce in the EU (e.g. nickel, iron, zinc, lead and copper) and Europe is completely dependent on imports of some metals (e.g. tin, cobalt and molybdenum).

At the same time, the Swedish mining industry is performing comparatively well and is taking advantage of international exporting opportunities. As a result, the sector is perceived as being central to supporting Swedish jobs and growth and sustaining economically (sparsely populated) areas that have experienced downward population trends. Moreover, the right types of conditions for ore, industrial mineral and aggregate production are quite similar and they all face very much the same challenges. The various subsectors are therefore jointly dealt with in the Strategy.

To help sustain and boost the mining industry, five strategic objectives are set out and these are complemented by eleven action points and nineteen measures. The objectives and action points are as follows:

Five Strategic Objectives and Supporting Action Points of Sweden's Mineral Strategy

1. A mining and minerals industry in harmony with the environment, cultural values and other business activities (greater resource efficiency, better dialogue and synergy with industries, mining communities with attractive natural and cultural environments);
2. Dialogue and cooperation to promote innovation and growth (promotion of societal development and regional growth, clear distribution of responsibility and better flow of information among actors in the industry)
3. Framework conditions and infrastructure for competitiveness and growth (a clearer and more effective regulatory framework, infrastructure investments for growth in the mining industry)
4. An innovative mining and minerals industry with an excellent knowledge base (research and innovation that creates growth and competitiveness, skill supply that meets the needs of the industry and regions)
5. An internationally renowned, active and attractive mining and minerals industry (a good supply of capital and promotion of investment, greater participation in the international arena)

Formulation of the Strategy

The formulation of the Strategy was initiated in 2011 by the Ministry of Enterprise, Energy and Communications together with the Geological Survey of Sweden. . Stakeholders were invited to a series of open events and provide written feedback on the key issues the Strategy should address. Over one hundred organisations contributed to the formulation phase and a vast array of measures were proposed. This led to further stakeholder discussions assessing the initial inputs and refining the draft Strategy.

In 2012, the Government Offices of Sweden published the Strategy outlining the nineteen measures selected. Unlike other Strategies in the region, some of the measures are supported by a comparatively generous budget (€5 million). Most of the funded measures support the development of studies, guidelines etc. They are directly associated with the various authorities and will be completed between 2014 to 2016.

It should be recognised that the Strategy does not set out anything new in legislative terms. Rather, existing policies and practice are packaged in a more coherent way and leading bodies and stakeholders have been tasked to cooperate with each other. This means that government, industry and stakeholders have a better understanding of the overall challenges facing the sector and can jointly develop activities across a wide range of areas with a view to taking the industry forward.

Implementation Bodies Involved in the Strategy

The Ministry of Enterprise, Energy and Communications has a role in coordinating and overseeing the Strategy overall. A range of stakeholders have been appointed to implement the individual measures. This includes the Geological Survey of Sweden, the Swedish Environmental Protection Agency, the Board of Housing, Building and Planning the County Administrative Board, the Agency for Economic and Regional Growth, the Agency for Growth Policy Analysis, the Programme for Vehicle Strategic Research and Innovation, and Swedish Research Council. Moreover, a wide range of (local) interest groups will engage in the development and implementation of the measures.

As part of the vision, it is anticipated that a much wider range of stakeholders will cooperate on issues of importance to the mining sector and act in a joined-up way. This will help to remove some of the barriers to growth.

Although targets and indicators have not been established to assess the performance of the strategy, it is anticipated that the main impacts will be expansion of the mining industry in terms of employment and output and an increase in stakeholder engagement.

Significant Measures

One the most important measures is to establish a national minerals forum to follow the implementation of the Strategy. The forum operates on the basis of open invitation. The forum will stimulate dialogue among stakeholders, provide opportunity for exchanging information and experience and coordinate business intelligence and analysis activities. The forum is to be led by the Minister for Enterprise and will include the mining and minerals industry, municipalities, stake-holders who are responsible for coordinating regional growth promotion, authorities and sector organisations/interest groups that are affected by and contribute to activities in the mining and minerals industry. This forum also has the task of identifying supplementary measures (supported by a reserve budget) to achieve the Strategy's objectives and vision.

The forum will meet once a year and will be at the centre of the strategic coordination activities for the Strategy. The forum will feedback information on the implementation of the measures and will evaluate the performance of the Strategy overall.

A high profile aspect of the Strategy relates to the governance of developments around accessing raw materials. Some of these measures are explored in more detail in a separate case study (please see case study 14). In particular, it is recognised that through the development of guidelines, a wide

array of stakeholders including government officials, industry and affected groups will gain a better understanding of the relevant legislation and when and how to engage with each other in an appropriate way. It is hoped that this will lead to more the development of better proposals for mining activities, consistent decision-making from authorities and the building of trust between communities.

The business sector has called for clearer guidance as to what background documentation will be required as a basis for assessment when applying for environmental permits. With clearer guidance and guidelines, more complete background documentation can be submitted to the assessment authority, which in turn will shorten lead times since there will be less need to submit supplementary information. The Government has therefore tasked Geological Survey of Sweden to produce an industry-specific manual on mining activity environmental assessment.

Other measures include activities to reduce the lead-time for planning permits. It has been recognised that it takes too long to receive environmental permits and during the initial dialogue with industry this was viewed as unacceptable. Given that a long lead-time can result in lost opportunities, evaluations are being undertaken to determine the extent of the problems in the area. Although not part of the Strategy, follow-up funding has been provided to the county administrative board of Västerbotten to introduce a lead permit process. Consultations with stakeholders have sought to identify the most time-consuming aspects of the process (for example different administrative units may request the same information). Efforts are being made to smooth out cumbersome areas and provide guidance to industry.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

A key feature of the Strategy contributing to improved competitiveness of the sector and sustainable supply of raw materials relates to the arrangements that have been made for enhancing the governance of mining activities. The strategy makes it clear that cooperation between central government, municipalities, regions, the business sector and interest groups creates the conditions needed to improve local and regional attractiveness and national growth. Good dialogue and clear distribution of responsibility among stakeholders provide an important basis for stimulating greater competitiveness, more jobs and growth in the mining and minerals industry as well as in the business sector as a whole in areas affected by large-scale initiatives. The development of government, industry and stakeholder dialogue guidelines are central in facilitating clear steps for cooperation and developing suitable planning proposals.

Features relating to the wider adoption of the good practice

The Strategy represents good practice in that it has been informed by similar developments in the region. Finland was mentioned as having introduced a similar strategy prior to the introduction of the Swedish Minerals Strategy. A key aspect is that strategies of this nature consider the mining industry to be part of a broad policy landscape requiring action in multiple areas to facilitate growth. Coordinating the Swedish Minerals Strategy centrally with inputs from regional and local actors has enabled key decision-makers to gain a solid understanding and overview of the issues affecting the sector in areas of responsibility that fall under the remit of multiple bodies.

The formulation of the strategy is another area of good practice. By providing an open invitation to stakeholders, a wide array of issues where fed into the consultation process and this facilitated the identification of issues of key importance to developing the industry and building of trust between stakeholders. The national mining forum also operates on an open basis and this again supports the ongoing objective evaluation of the strategy. A high degree of ownership has been achieved across a range of stakeholders and this is important for the effective implementation of measures.

Further Information

Swedish Minerals Strategy

http://www.regeringen.se/content/1/c6/21/89/31/dcee0282.pdf

Annex

Swedish Minerals Strategy – Nineteen Proposed Measures

In order to increase the resource efficiency of the mining and minerals industry, it is proposed within the Swedish minerals strategy that:

1. SGU be given the task of performing an analysis of the extraction and recycling potential for various metal and mineral assets in Sweden in partnership with the Swedish EPA and with the support of the mining and recycling industries. The analysis is to be linked to the total supply requirement in the whole of Europe. The findings of such an analysis could form one of several bases to stimulate more efficient use of Swedish metal and mineral resources, show how Sweden can contribute to the European sales situation and identify potential business opportunities.

2. SGU be given the task of working together with the Swedish EPA, with the support of the Swedish Transport Administration and the National Board for Housing, Building and Planning, to submit proposals for how a system for reporting shot rock production data can be designed and used together with data that has already been compiled on the production of crushed rock and natural gravel. Improved statistics on ballast production including shot rock will help provide a better planning basis and better monitoring of the target to reduce natural gravel use.

To promote greater cooperation and synergy between the mining and minerals industry and other industries, it is proposed within the minerals strategy that:

3. The Norrbotten County Administrative Board be given the task to head a project to develop a manual for consultation and communication between reindeer husbandry and the mining industry during the permitting process for exploration and exploitation. Both the industries' sector organisations, the Sameting (Sami Parliament) and the Mining Inspectorate of Sweden, are to be given the opportunity to take part in this project.

To promote attractive natural and cultural environments in new and existing mining communities, it is proposed within the framework of the strategy that:

4. The Swedish National Heritage Board to be given the task of developing, compiling and disseminating best practice as regards how to utilise the cultural environment and make it into an important resource in areas where mines are reopening. This task should also include striving to ensure that cultural heritage is utilised by both the mining industry and tourism and promoting collaboration between them. The task should focus primarily on Bergslagen and be performed in cooperation with the relevant county administrative boards, actors that are responsible for coordinating regional growth initiatives, and in consultation with other interested parties. (See case 14)

To help promote societal development and regional growth, it is proposed within the framework of the strategy that:

5. The Swedish Agency for Economic and Regional Growth be given the task of establishing and implementing a national programme for support when planning major investments from the business sector. The programme shall aim to promote knowledge building, stimulate dialogue, cooperation, the exchange of experiences and coordination between municipalities and public actors on the regional and national level. The programme shall also aim to identify and manage the requirements of such a major business sector investment so that existing resources are used more efficiently in order to meet the requirements.

6. The Swedish Agency for Economic and Regional Growth be given the task of, in cooperation with the Swedish EPA, to produce a manual for municipalities in which new large-scale mines are about to be set up or in which existing mining and quarrying activities are to be expanded. The manual shall list the measures that need to be implemented by the municipality and will act as an aid to the municipality in the dialogue with the developer. The manual shall also show how the process can be managed and hence how a set of

common objectives can be created in partnership with the developer.

7. The National Board of Housing, Building and Planning be given the task of reviewing the obstacles that are preventing an increase in housing production and what experience there is of how municipalities have managed housing construction, coupled to the expansion of the mining industry.

8. SGU be given the task, within the framework of its responsibility for the environmental quality objectives, of further developing and finalising the work that is underway at the agency to develop a methodology for how regional material supply plans can be implemented. SGU shall also support the county administrative boards in their use of the methodology as well as the map service that is being developed for the purpose.

To help stimulate dialogue and clarify the division of responsibility, it is proposed within the framework of the strategy that:

9. A national minerals forum be established to follow the implementation of the Swedish Minerals Strategy and with the task of identifying supplementary measures to achieve the strategy's objectives and vision. The forum is to promote dialogue among stakeholders, provide opportunity for exchanging information and experience and coordinate business intelligence and analysis activities. The forum is to be led by the Minister for Enterprise and gather together companies in the mining and minerals industry, municipalities, stakeholders who are responsible for coordinating regional growth promotion, authorities and sector organisations/interest groups that are affected by and contribute to activities in the mining and minerals industry.

To help improve and clarify the regulations on mineral extraction, it is proposed within the framework of the minerals strategy that:

10. The Swedish Agency for Growth Policy Analysis be given the task to, first of all, follow up the actions that have been initiated and implemented. When doing this task, the Agency shall take the experiences of business operators into consideration. Secondly, the Agency shall, where it is possible, evaluate the effects of the actions, which includes assessing whether government funding has been used efficiently. Thirdly, the work is to include an international comparison between the environmental assessment processes and regulations of relevant countries when it comes to mining and quarrying operations. The work shall include a comparison of lead times in the permitting processes.

11. The Norrbotten County Administrative Board be given the task of running a pilot project in 2013 to investigate how a comprehensive plan covering several municipalities can be developed aimed at providing support to the municipalities in their detailed planning work. This task is to be performed in consultation with the county's municipalities. The benefit of such an approach is to be evaluated within the framework of the task.

To help create a robust infrastructure that meets the needs of the mining industry, it is proposed within the minerals strategy that:

12. The Swedish Transport Administration, as part its task to investigate new electric propulsion systems for trucks on the road, makes use of the lessons learned from previous and ongoing projects within the Programme for Strategic Vehicle Research and Innovation (FFI). Field tests and pilot facilities are important development steps to ensure the technology is ready for full-scale use.

To further stimulate research and innovation in the mining and minerals industry, it is proposed within the framework of the minerals strategy that:

13. Vinnova be given the task of performing a subject review of the mining and minerals research area in cooperation with the Swedish Research Council. This review should contain a biometric evaluation and a survey of historical and future research initiatives in the mining and minerals area. The survey is to identify recycling and substitution initiatives, for which progress reports are to be presented in 2013 as a basis for the work done within the European Innovation Partnership on Raw Materials. Sweden's strengths and challenges within mining and minerals research in an international perspective are to be identified and the strategic benefit of implementing initiatives on these is to be assessed. The task shall also include submitting proposals for how to improve forms of cooperation among research actors in the mining and minerals area.

To guarantee the skills supply needs of the industry and the regions, it is proposed within the framework of the minerals strategy that:

14. As part of its remit to promote sustainable growth and entrepreneurship in the mining and minerals

sector, SGU be given the task of leading a project stretching over several years to increase knowledge about the role of geology in society and its significance for growth in all parts of the country. The business sector is to be given the chance of participating in this project provided that they co-finance it. The participation and co-financing of the business sector shall help to highlight the industry as a workplace. Financing options via different EU funding instruments should be utilised.

15. Actors with a responsibility for the regional skills platforms in the relevant counties be given the task of drawing up a common plan for how to meet the long-term skills supply needs of the mining and minerals industry in the respective regions. The platforms will be allocated resources to allow them to produce the necessary background documentation. The work should be characterised by coordination and a cross-border perspective.

To promote capital supply and investment, it is proposed within the framework of the minerals strategy that:

16. The Swedish Agency for Growth Policy Analysis be given the task of analysing Sweden's attractiveness and investment climate as a mining nation and to identify which factors have a particular impact on this. The analysis should include an international perspective and include an analysis of how conditions can be created to combine a long-term sustainable mining industry in Sweden with an investment climate that can attract overseas investors.

To increase the participation of the Swedish mining and minerals industry in the international arena, it is proposed within the framework of the minerals strategy that:

17. Business Sweden, in cooperation with the relevant actors, should investigate the conditions for establishing a communication and marketing platform. The platform is to include a web-portal that presents ongoing activities and projects aimed at internationalising the Swedish mining industry while at the same time placing Sweden in the international vanguard of mining nations.

18. SGU be given the task of, in cooperation with Sida, putting forward proposals for how Sweden and Swedish enterprises can contribute to the development of a sustainable mining industry and good management of the mineral resources in developing countries, e.g. by means of actor-driven cooperation. As part of the work, SGU's experience of participating in the Meeting Points Mining and Meeting Points Mining /Systematic Facilitator Services projects should be considered.

19. A survey and analysis of countries which the Government feels it may be interesting to have more in-depth contact with in the mining and minerals area should be implemented. This survey and analysis must make it clear which Swedish enterprises are already active in those countries that are deemed to be of particular interest. The survey can also include how Swedish experience of a sustainable mining and minerals industry can help to strengthen management practices and the institutions in the minerals area in a purposeful way. Based on the survey, an action plan is to be drawn up stating which issues are to be discussed in dialogue with identified countries, taking the countries' democratic development into consideration

Good Practice Cases – Case 2

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CASE 2 - NATIONAL STRATEGY FOR GEOLOGICAL RESOURCES- MINERAL RESOURCES - PORTUGAL

Introduction

The National Strategy for Geological Resources and Mineral Resources (NSGR-MR) is a comprehensive strategy for the 2013-2020 period approved by law that establishes a framework for the promotion of the Portuguese mining industry. Its objective is to ensure the uptake of investments for exploration and exploitation of mineral resources balancing economic, social and environmental considerations and to promote the sustained growth of the mining sector. The strategy is structured around four main areas of action supported by a set of more specific measures and actions, some of them already in progress or even completed.

Theme

Policy Framework, with reference to most of the other themes covered by the good practice study.

Reasons for Highlighting this Project

The development of a national strategy on raw materials is a key recommendation of the Raw Materials Initiative. The Portuguese case is an illustration of a comprehensive approach that aims to respond to the identified needs of the sector and to set the exploitation of natural resources in parity with other national policies. It provides the basis for developing an effective legal and institutional framework and coordinating policy measures and actions at the local, regional and national level to support the sustained development of the mining sector.

Description

Portugal is among the EU countries with a significant geological potential with a wide range of raw materials of economic interest. The mining sector, which mainly consists of metal ores, ornamental stones, industrial minerals and industrial rocks, reached a total production value of €975 million in 2010, driven mainly by metallic and construction minerals (35% and 44% respectively)[2]. The increase in global prices has led to a significant increase in terms of total output value at an average of 3% annually during the last years. There are significant levels of raw materials exported that reached a total of €735million in 2010 with an annual growth rate of 17%, driven mainly by exports of metallic ores (mainly copper). There are also significant exports of tungsten, ornamental rocks, precious metals and some other industrial minerals. In the last few years – especially since 2010 - there has also been a rather sharp rise in the number of contracts and investment for exploration related to metallic minerals.

[2] DRAFT PRESIDENCY OF THE COUNCIL OF MINISTERS - Resolution of the Council of Ministers No 78/2012, National Strategy for Geological Resources - Mineral Resources

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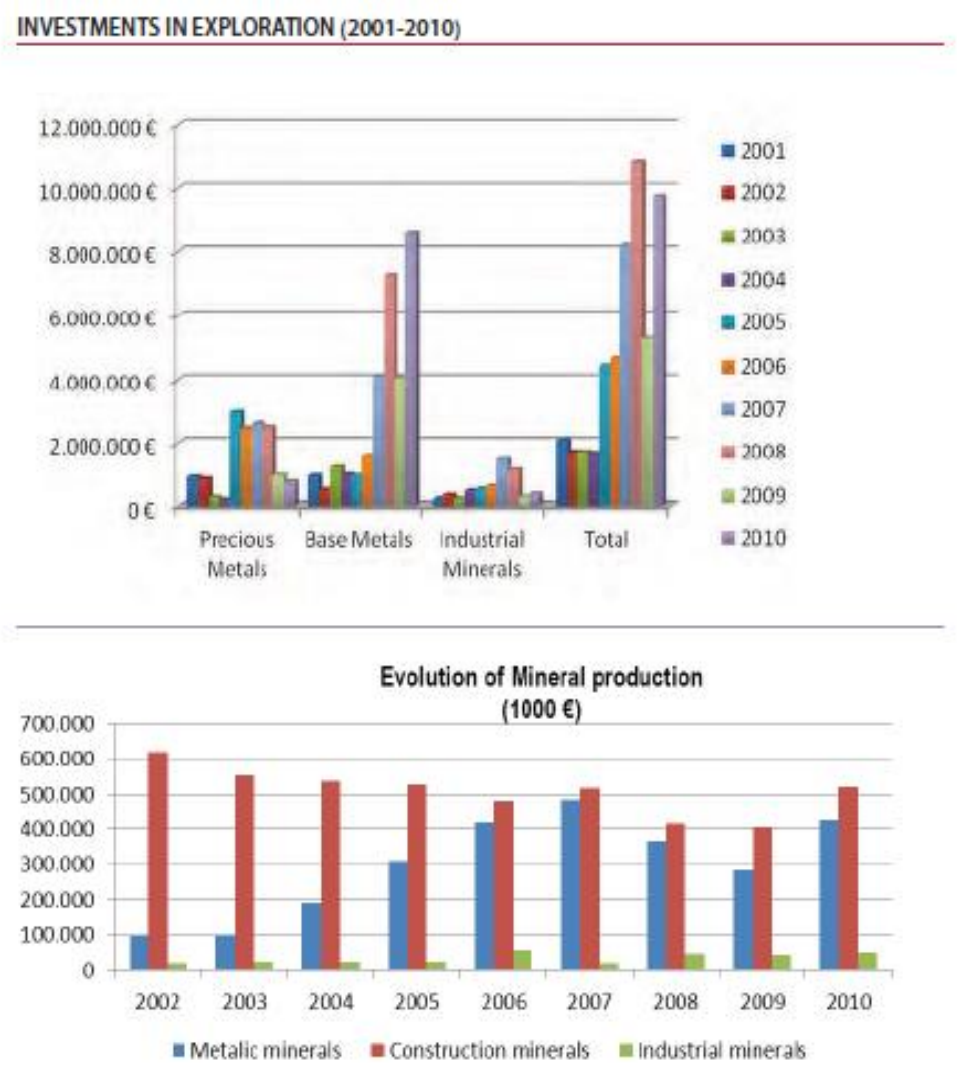

Source: Mineral Resources of Portugal[3]

At the same time though, a number of studies concerning the mining sector in Portugal – summarised in the document presenting the national strategy - have identified a few problematic issues that should be addressed in order to support the sustainable development of the sector:

- There is relative deficit in the knowledge base of the territory and the full potential;
- A number of areas with identified potential are, in most cases, the object of applications for the assignment of rights of exploration but are not sufficiently studied;
- there is a need to reconsider the state's presence and role across the raw materials value chain;
- there is a negative public perception of the mining industry and a need for a more structured promotion of the mining sector and its contribution to the economy;
- the legislative and contractual framework – including the part that covers land use planning- is rather problematic and should be improved;
- the royalties system can be further developed.

[3] DGEG (2012), Mineral Resources of Portugal, http://www.peprobe.com/peprobe-library/document/1512/mineral-resources-portugal.pdf

Furthermore, as is the case for most other EU countries, Portugal relies heavily on imports of the main types of ore for manufacturing and construction and faces high costs of transport of ore from other continents.

In response to the identified issues, and within the context of the broader EU policy to guarantee and improve access to raw materials, the Portuguese authorities aimed to develop an integrated approach for the development of the sector that would reflect:

- The growing strategic role of mineral resources at global level;
- The RMI and all subsequent guidelines and strategy at EU level, including the recommendation for the development of national minerals policy;
- The growing demand for exploration and exploitation permits at Portuguese level;
- The recognition of the mineral resources potential as a relevant economic development factor.

In 2011, the Portuguese government approved by Law (n° 64-A/2011) the development of "*a national strategy for geological resources that establishes a funding strategy for the promotion of the exploration phase and attracts foreign investment to exploitation and promotes the sustained growth of the sector, increases exports of technologies and creates jobs*."[4]

Following a period of consultation that involved various public entities with an important role in the sector, industry representatives and other stakeholders, the National Strategy for Geological Resources – Mineral Resources (NSGR-MR) was published in 2012 in the form of a legal document.

The NSGR-RM sets an eight-year strategic plan for the mining sector founded on four pillars/areas of action. For each axis more specific measures were defined, which in turn are implemented through a total of 74 specific actions with responsibility shared among different organizations (including the ministry, the National Laboratory For Energy and Geology, EDM – the Mining Development Company). In some cases, measures or actions that have already been developed have been brought under the umbrella of the national strategy.

Four axes of the National strategy

Axis A- Adequacy of the bases of the sector by redefining the role of the State and the revision of the rules of organization and discipline of the activity:

- Main measures and Actions:
  - Redefine the role of government and other public entities in the geological resources sector by redefining the exploration and mining activity undertaken by the state, assuming regulatory functions, management and supervision of the mining sector and its environmental impact. State guarantees the cartography of the country and the dissemination and promotion of the mining sector;
  - Ensure the adequacy of existing legal instrument by updating the legislation governing the award and performance of the agreements to be entered into by the State and mining operations undertaking the extraction of minerals and reset the current system of royalties;
  - Enable the State to correctly execute its rules by reviewing the organizational model of the National Laboratory of Energy and Geology (LNEG) and the General Directorate for Energy and Geology (DGEG), improving coordination between the agencies with expertise in the mining sector, creating a Mining Investor Assistance Office to ease administrative activities and support projects that aim to increase the geological knowledge of the country, under the coordination of the National Laboratory of Energy and Geology.

[4] DRAFT PRESIDENCY OF THE COUNCIL OF MINISTERS - Resolution of the Council of Ministers No 78/2012, National Strategy for Geological Resources - Mineral Resources

Axis B - Development of knowledge and appreciation of the national potential, through the improvement of collection methods and systematization of information for a better use of resources.

- Measures and Actions:
  - Increased knowledge of the national potential with preliminary identification of exploitable resources through the support of applied research and pilot projects for treatment of minerals and new resource assessment methods. It also includes the completion of detailed (1:50,000) cartography and supporting drilling of high risk (over 1000m) as well as greater between the Ministry of Economy and Employment and the Ministry of Agriculture, Sea, Environment and Spatial Planning on projects for recognition of the continental shelf.
  - Improve knowledge sharing through the development of the e-Geo - National Geo-science Information System and the Information System of Portuguese Mineral Resources and Occurrences but also analysis of the activities of the different subsectors.
  - Promote synergies between public and private entities in the maritime sector.
  - Attracting investors but evaluating potential incentives to be provided for attracting investments and supporting authorities looking to attract investors.
  - Strengthen the skills base in the sector through support of specialised training.
  - Promote the allocation rights of exploration and exploitation rights without neglecting sustainability including the evaluation of uranium concessions.
  - Control of developed mining activities through evaluation of current contracts to ensure compliance with contractual conditions, adoption of quantitative and qualitative indicators to evaluate exploration work and stricter monitoring of the exploration work.

Axis C- Dissemination and promotion of the national potential:

- Measures and Actions:
  - Strengthen communication – direct and indirect – through presentation of concrete opportunities to investors through trade shows, conferences, publications but also aim for more general awareness-raising of the potential of the sector.
  - Create a Mining Investor Assistance Office (GAIM), within the General Directorate for Energy and Geology to operate as a one-stop-shop and implement a key account management system.

Axis D- Economic, social, environmental and territorial sustainability:

- Measures and Actions:
  - Conservation of resources and guarantee of supply of raw materials through demarcation of areas of geological interest and for future exploration and identification of mineral resources as non-renewable natural resources, placing them in the context of national natural heritage.
  - Strengthening the capacity of producing agents through the support for the introduction of new technologies, methods and products.
  - Export promotion through the provision of incentives to promote international partnerships to access new markers and the participation in international fairs.
  - Protection of health and safety of miners and the people living in mining areas by promoting adequate working conditions and social protection to be provided by firms that hold exploitation rights of geological resources and elimination or minimisation of security risks from mines and quarries.
  - Strengthen land use planning monitoring of the National Land Use Planning Policy (PNPOT) and preparation of geological resources sector plan under the Legal Instruments of Land Management and respective assessment of environmental effects.

- Provision of guarantees for exploration and rehabilitation by establishing a system of financial guarantees.
- Strengthen the strategic environmental assessment and environmental monitoring plans and programs by deepening knowledge concerning the impacts of the mining activity and the performance of mitigation measures.

According to the National Strategy document, most of the actions identified do not require additional public investment. For those actions where additional resources are required the European Regional Development Fund and the Cohesion Fund together with the revenues raised from royalties will be the main means of financing.

The entity responsible for the **overall coordination and monitoring,** development of the more detailed implementation plan and the necessary communication activities is the **Project Management Office (PMO).** The PMO – which has yet to become operational – is expected to bring together representatives from all public entities with expertise in the field of geological resources. These include the General Directorate for Energy and Geology, National Laboratory of Energy and Geology, EDM- Mining Development Company, a Government member responsible for the geological resources, a representative of the General Directorate of Natural Resources, Security and Maritime Services and the Portuguese Institute for Ocean and Atmosphere.

Systematic **monitoring, evaluation and review** of the national strategy have also been identified as key to ensure the success of the strategy. An annual review process will use a set of quantitative and qualitative indicators, not yet defined, to enable an assessment of developments. A Commission for Evaluation of the National strategy – comprised of experts from the sector - is expected to support the setting of priorities and achievement of some of the measures set.

Features contributing to Improved Competitiveness

It is too early to make any meaningful assessment of the effectiveness and efficiency of the national strategy. However, the NSRM-MR already provides a comprehensive plan to address the needs of the industry by bringing together measures and actions to improve the legal, knowledge, tax regime and land use planning frameworks, thus contributing to better conditions for investing on the mineral resources activities. It sets the basis and the context for the development of the various measures, such as the Geological Resources' Legal Framework that is currently in preparation.

At this initial stage, a quite important outcome according to the Portuguese mining authorities is that the adoption of the strategy in the form of a legal document has effectively brought the mining sector into parity with others sectors, activities and policy considerations (including environmental consideration) at all levels of decision-making (national, regional, local). This creates a supportive context for the development of the mining sector and for any feature measures and actions.

Features relating to the wider adoption of the good practice

While the specific actions identified under the National Strategy and the management and monitoring structure are specific to the Portuguese context, the main axes of action are a direct reflection of the priorities under the second pillar of the RMI. They represent an example of a comprehensive plan that can be transferred and adopted to other EU countries once the specific needs and priorities have been defined.

Good Practice Cases – Case 2

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Further Information

National Strategy of Raw Materials - Mineral Resources
http://ec.europa.eu/enterprise/policies/raw-materials/files/docs/mss-portugal_en.pdf

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Direção Geral de Energia e Geologia (DGEG) – Portuguese Energy and Geology Authority (Portuguese Mining Authority)

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CASE 3 - DEVELOPING A NATIONAL ACTION PLAN, FINLAND

Introduction

Finland was one of the first countries in Europe to develop a Mineral Resources Strategy in 2010. However, subsequent developments in Finland suggested the need both for a more broadly based approach and also a strengthened framework for implementing agreed actions. The National Action Plan meets both these needs, while at the same time promoting coherence and consistency across the various initiatives being undertaken as a result of the Action Plan.

Theme

Improving policy and the legislative framework

In its detail, the Action Plan has elements that relate to most of the themes covered by the Good Practice Report, though the issue of governance is a major element.

Reasons for Highlighting this Project

Developing a national strategy on raw materials has been recommended on several occasions to EU Member States as an essential element in developing a consensus on raw materials policy and highlighting areas where there is a need for action. Examples are provided in this set of good practice cases illustrating precisely such processes. But, once a strategy has been defined, it is important to ensure that it continues to respond to developments in the economy and society and also that there are clear mechanisms to ensure that the agreed strategy is followed through into effective implementation. This Finnish case provides an example of these processes.

Description

In 2008, the Finnish government decided to support investment and education and training relating to the mining industry. A year or so later, a ministerial working group on climate and energy policy commissioned a Minerals Strategy, as part of Finland's Natural Resources Strategy. The Geological Survey co-ordinated the process of preparing the strategy over a six-month period in 2010.

The publication of the Minerals Strategy in October of that year meant that Finland was one of the first countries to adopt a national strategy for raw materials.

The Strategy began with a vision for 2050, which saw Finland as a global leader in the sustainable utilisation of mineral resources and the minerals sector as one of the key foundations of the Finnish national economy. It went on to explore a series of key themes:

- Strengthening minerals policy
- Securing the supply of raw materials
- Reducing the environmental impact of the minerals sector and increasing its productivity
- Strengthening R&D capabilities and expertise

Two or three years later, however, the situation in the country was quite different. In the meanwhile, as well as important developments for the industry, such as the opening of new mines, a much higher level of awareness of issues relating to raw materials extraction had developed in the media, among the general public and among elected representatives at all levels of government. Attitudes towards mining had become more critical and in some areas there were quite sharp disagreements.

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In response, a high level Round Table, chaired by the Prime Minister, was convened in 2012, with 160 participants from a range of interest groups. Fundamental questions were asked about whether the country wanted and needed a raw materials sector and on what conditions. The issues aired were then followed up by 10 expert groups addressing different topics within the extractive industry. Over one hundred propositions were made for action to make the extractive industry more sustainable and competitive and they were broadly accepted, forming the basis for the 'Action Plan for Development of Sustainable Extractive Industries', which was published on 29th April 2013. The Action Plan has 35 measures, with details of actions to be completed by 2019 and descriptions of longer-term objectives up to 2030.

The Main Elements of the Action Plan

One of the benefits of the process leading up to the Action Plan is that the raw materials industry has a much clearer profile in national policy. Communication has also improved, not only between the industry and the general public, but also within the sector and between government departments. Furthermore, the Action Plan has led to a better appreciation of the interaction of the various part of the value chain and of the contribution made not only by the mining exploration and extraction companies, but also the aggregate sector (previously not part of the strategy) and by firms involved in processing, providers of technology and those offering related services. This has allowed a more coherent and comprehensive view of the industry to be developed and strategic interests and opportunities for the country to be more clearly identified.

The coverage of the Action Plan therefore includes:

- The Mining industry
- The Aggregates industry
- The Natural stone industry
- Metal refining
- Technology and service providers related to extractive industries
- Public administration and the development of the business environment
- Development of research and training
- Recycling and life cycle aspects

At the same time, a major theme of the Action Plan is a systematic approach to promoting sustainability and, in fact, the Action Plan is a part of the Strategic Programme for the Cleantech Business being implemented by the Ministry of Employment and the Economy. This aspect of the approach is understood to have environmental, social and economic elements requiring that:

- the public sector sets requirements and supports sustainable development;
- companies operate in a sustainable manner;
- there is co-operation with other companies, the authorities, stakeholders and researchers, speeding up the implementation of sustainable actions.

As a consequence, the Action Plan requires actions by the public authorities, but it is also intended that industry takes action itself and, in addition, there are areas where the two partners need to act in concert.

The actions to be addressed in the short to medium terms are listed below, beginning with the actions of the public authorities:

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Public Action	
Good administration	Description of permitting processes and the role of authorities
	Adequate resources for permit and oversight authorities
	National land use guidelines and it's steering role
	Impacts of mining projects on valuable natural environments and the operational preconditions of local industries
	Development of processes and methods to support reconciliation of conflicting interests
	Guidebooks for stakeholder groups
Leadership through developing competence	Training plan to increase knowhow and labour for the needs of sustainable extractive industry
	Development of the research strategy
	Improvement of cooperation, division of work and specialisation
Sustainable use of raw materials	Long-term exploration and modelling for ensuring the resource base
	Identification and elimination of obstacles to recycling and steering methods and incentives for recycling of mineral products
Development of the operating environment	Availability of reasonably priced energy
	Development of transport connections for existing mines
	Development of anticipation, decision-making and funding models for transport needs

It can be seen in this schematic form, that it has been agreed that the public authorities do not only have to provide an appropriate administrative framework – governance in a narrow sense; they also have specific responsibility for having a leading role in developing the competences and capacities of the sector, through training (where the need for a significant effort was identified), the promotion of research and other labour market and related measures to improve cooperation and specialisation within the industry, promoting the sustainable use of raw materials and developing the infrastructure and influencing economic developments in a direction that can improve the operating environment.

It is not possible to comment on all of these actions individually, but for instance the description of permitting processes and the role of authorities arose because the variety of permitting procedures has become so great and complex that in order to proceed with any simplification, it is necessary first to undertake a mapping exercise, in which the various stages for obtaining permits governing both exploration and exploitation are set out and a description made of the role of the various authorities - both in relation to each stage and to their overall role within the system. A clearer understanding of the current situation, however, is not only necessary in order for the authorities, with the help of industry, to begin to rationalise and simplify the system and over the longer term establish a one-stop-shop for permitting, it will also help all stakeholders understand better and even assist individual citizens and representative groups to make their contribution at the most appropriate point and in this way contribute to making the resolution of conflicting interests a more efficient process.

More generally, it was agreed that the development of processes and methods to support reconciliation of conflicting interests is in the interests of everybody. Given the heightened public and media interest in developments in the industry, efficient processes, supported by accurate

information and open debate, are the best way to resolve difficulties and establish a consensus, where possible.

There are actions too that industry needs to take:

Action by Industry	
Continuous improvement	Water management plans and development of water technology
	Sorting of waste, utilisation of tailings and waste rock
	Improvement of energy-efficiency
	Safety of mines and quarries
Dialogue with stakeholders	Adoption of CSR programmes, development of indicators, monitoring and reporting
	Interactive dialogue with various stakeholder groups
	Search for synergies with local actors through subcontracting
Open communications	Development of companies' communication in a more rapid and open direction

Achieving the goal of becoming the leading sustainable mining country in the world requires continuous improvement from industry and it was agreed that particular priorities currently include water management, the sorting of waste and utilisation of tailings and waste rock, the improvement of energy-efficiency and continuous attention to the safety of mines and quarries.

At the same time, better engagement with stakeholders and the public in general is a major challenge for the industry, to be met by open communications and a continuous dialogue with stakeholders, including through the adoption of CSR programmes and the development of indicators, monitoring and reporting.

There are also a substantial number of areas where the public authorities, industry and other stakeholders, such as researchers can best act together. The actions agreed on this basis were:

Joint Action	
Growth through international action	Improved Nordic co-operation
	Active participation in the preparation of EU initiatives and programmes
	Enhancing sustainable development through advocacy and prominence in international forums
Export of technologies and services	Corporate and scientists networks between Finnish and Russian minerals clusters
	Plan to enhance exports
	Support for companies aiming at international markets
	Cooperation between Finland and Sweden in support of exports
	Internationalisation of Finnish consulting, measurement and monitoring companies
Encouragement and remuneration	Subsidies to support implementation of new methods of mitigating environmental impacts and surpassing legislative requirements
	Funding for reconciliation work and the implementation of agreed solutions
	Financial instruments for investments in value chain

	development
	Award for sustainable extractive industries
	Collection, processing and dissemination of information

Better recognition of the international context of developments in the industry and the exploitation of international opportunities is an important theme for the Action Plan as a whole and the specific actions agreed can all contribute to meeting these objectives. For instance, it is felt that parts of Finnish industry across the supply chain could participate more effectively in EU-funded research projects. Equally there are a number of export opportunities that could be more effectively developed through joint action. Finally, it was agreed that there are a number of ways that the public authorities in conjunction with the industry could encourage useful developments, ranging from highlighting good practice through an award for sustainable extractive industries and continuing develop the excellent information base in Finland (see case 5), to a more systematic development of the value chain, through encouraging the development of raw materials clusters and exploitation of the contribution of the industry to regional development.

Longer-term Objectives

Longer-term objectives are also set out in the Action Plan, with a view to establishing a perspective for the 2020 to 2030 period, while also allowing for the fact that the operating environment for the extractive industry is evolving rapidly. Although specific actions have not been defined, the articulation of objectives is believed to establish a broad development path and help improve predictability.

Monitoring Progress

In order to monitor progress with the Action Plan, an 'Extractive industries Working Group' has been established under the Ministry of Employment and the Economy, with representatives from several ministries and other parties. A major task of the Working Group is to ensure a continuation of the dialogue between the various stakeholders, but it is also responsible for collecting data on the implementation of the Action Plan, reporting to ministries on progress and communicating results and any requirements for up-dating to the general public.

As part of this process the Working Group has identified who is responsible for implementing particular actions, the time frame over which they are to be implemented and the input required to deliver them.

The Working Group reports twice a year and the results are communicated by e-mail to the relevant interest groups, to a broader group of stakeholders using the media, general contacts, presentations etc. and through the internet pages of the Ministry of Employment and the Economy and the Ministry of Environment[5].

At least once a year there is also a round table forum that reviews the situation and makes any revisions required.

The following indicators have been defined:

- Finland's ranking in international assessments on competitiveness
- Investments
- Cleantech exports (SMEs/major corporations)
- Turnover (by sub-sectors)

[5] http://www.tem.fi/ajankohtaista/vireilla/strategiset_ohjelmat_ja_karkihankkeet/cleantechin_strateginen_ohjelma

- Number of employees (by sub-sectors)
- Number of appeals and whether they were granted (permits and land use planning)
- Emissions into the environment (in violation of the terms of permits) and accidents
- Top research teams
- Number of young people entering the extractive industry (applicants for jobs and study programmes)
- Rankings of extractive industry companies on 'most popular employer' lists
- Acceptance of the extractive industry (suitable method of measurement)
- Finland's visibility on international forums

Clearly, although it is not yet possible to provide data on the implementation of the Action Plan, it has been established in a way that will allow progress to be closely monitored and the impacts assessed. This in itself constitutes an important element of good practice.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

By building on the original national Mineral Resources Strategy in the Action Plan, Finland has achieved a high political profile for the sector, by engaging with a broader public, strengthening its commitment to developing a sustainable industry. It has also developed mechanisms to ensure that both the public authorities and industry push through the changes necessary for achieving a globally competitive industry, with a high degree of social and political support. In doing so, the Action Plan both addresses the broader conditions necessary for competitiveness and sustainability and also the specific steps needed for achieving progress.

Features relating to the wider adoption of the good practice

The Action Plan is both an inspiring and practical instrument that can encourage others both to address the political challenges that the industry faces and address practical issues that can improve competitiveness. Both the approach and the detail are transferable.

Further Information

Ministry of Employment and the Economy 'Making Finland a leader in the sustainable extractive industry – action plan' 2012

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Good Practice Cases – Case 4

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CASE 4 - AN INTEGRATED ENVIRONMENT & PLANNING ACT, NETHERLANDS

Introduction

The Ministry of Infrastructure and Environment (NL) is currently in the process of developing an integrated Environment & Planning Act (Omgevingswet). The main aim of the Act is to combine and simplify EU and national land and environmental land planning regulations with a view to streamlining the entire land planning process including for projects proposed by the mining industry (in the Netherlands the vast majority of the industry relates to surface mining mainly sand and gravel extraction).

By integrating a wide range of EU and national planning and environmental legislation, it is anticipated that the overall regulatory framework will be simplified for industry, other stakeholders and government bodies. The result for end users will be a more transparent, coherent, efficient and effective land planning process. Given the broad legal scope of the Act, the benefits of the legislation will be shared across multiple industries including the (surface) mining industry.

Moreover, the Act aims to simplify the process for citizens and businesses through the introduction of single environmental permits and one-stop-shops. This means that applicants will in a position to submit planning applications to just one local government office with a view to receiving a single planning permit that covers all aspects of the land planning regulatory framework. In addition, data collected for environmental impact assessments will be made available for reuse within certain timeframes. This has the aim of reducing the number of studies and simplifying and speeding-up the application process.

The forward thinking reforms in this area have been initiated with the Smart Regulation[6] agenda and the Raw Materials Initiative in mind[7]. There is recognition in the Netherlands that government legislation and bureaucracy needs to be harmonised and reduced in order to get landing planning projects quickly off the ground so that societal challenges can be met for example improving access to raw materials.

Theme

Given the strategic focus of this initiative, a number of benefits for industry can be identified. The integration of the relevant regulation and introduction of one-stop-shops aim to:

- improve the applicable legal framework
- improve land use planning processes
- improve the permits and authorisation process (including environmental impact assessment that is related to the authorisation procedure)

The case also has elements of improving the governance of developments relating to raw materials given its recognition towards appropriately involving relevant stakeholders in the decision-making around planning applications.

[6] http://ec.europa.eu/smart-regulation/
[7] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0699:FIN:en:PDF

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Reasons for Highlighting this Project

This Ministry of Infrastructure and Environment (NL) regards this initiative as a virtually unique and timely response to the increasing number and complexity of EU and national legislation in the spatial planning field. In addition, land planning and related environmental legislation is often the responsibility of numerous national, and local regional government bodies that have different policy remits and requirements and consequently this increases the likelihood of complications and delays in the land planning process. For the overall system to be efficient and effective, assessment of land planning applications and the issuing of approvals requires a clear and consistent legislative framework and sufficient degree of administrative coordination. Generally speaking, the raw materials industry would benefit from having a simplified and coherent legal and planning framework across the EU, particularly in relation to the planning applications process, in order to support efficient access to raw materials.

Description

Common to a number of Member States, the land and environmental planning regulatory landscape in the Netherlands consists of dozens of EU and national laws and hundreds of individual requirements relating to land use, residential areas, infrastructure, the environment, the protection of nature and guaranteeing the quality of water. Each piece of legislation has its own planning timeframe, procedures and obligations to be met and projects need to comply with a large number of different rules. Complex regulatory interactions, duplications and inconsistent overlaps have been identified. Often, EU legislation was introduced into existing national instruments but it was subsequently found that the fit was not always ideal.

Moreover, the regulations are overseen by a number of different national, regional and local bodies and no single body has an overview of the overall framework. It has been observed that public authorities do not always work together optimally, and it is not always clear where the boundaries of their competences lie. Differences of opinion in the assessment of planning applications have emerged between authorities and the existing regulatory framework has no means to efficiently address these issues. Furthermore, local authorities struggle to maintain the necessary knowledge and manpower to operate effectively when faced with complicated land planning decisions. The attitude of civil servants is not always service-minded and possibly over-cautious.

At the same time, environmental impact assessment obligations have expanded over time, further complicating the planning process.

As a result, the overall land planning process is too complex and burdensome for government, industry and stakeholders to deal with in an effective and efficient manner. For the mining industry, this has led to a number of issues such as uncertainties, delays and associated costs.

Key Objectives and Legal Scope of the Integrated Environment & Planning Act

In response to the current situation, the Ministry of Infrastructure and Environment's key objective for the Act is to introduce a single and coherent piece of legislation that will encourage simplification of procedures and reduction of administrative burdens, while maintaining existing levels of environmental protection. It is anticipated that this will lead to more coherent decision-making, and better coordination of government and stakeholder involvement. Some of the benefits for industry include:

- Coherent grouping of the relevant land and environmental planning rules in a single document;
- Applicants will have a better understanding of the rules which are applicable to them (the rules per type of applicant per region will be highlighted);

- Unifying and speeding-up of procedures through an integrated planning process. The application process will revolve around the submission of a single plan for a single permit (including for surface minerals). The land use decision making process with be shortened from 26 to 8 weeks.
- Overall, faster and more flexible decision making within appropriate boundaries and better quality decisions.

In terms of the legal scope of the Act, the legislation to be integrated stems from 7 policy areas - water, environment, nature, infrastructure, spatial planning, housing and culture. The Act aims to replace 17 existing laws, including the Water Act, the Crisis & Recovery Act and the Spatial Planning Act. The provisions of eight other laws will be transferred to the Act. In addition, (parts of) 37 EU environmental directives will be re-transposed. This includes the law on surface mineral extraction (Ontgrondingenwet) and the environmental aspects of the mining law (Mijnbouwwet).

During the formulation of the Act, the legal team involved in the integration process identified and removed some of the inconsistencies and overlaps between the legislation. This includes harmonising, streamlining, integrating and simplifying EU Directives in terms of the regulatory and inspection interrelationships and necessary planning documents to demonstrate compliance. Of course, these activities were undertaken within the boundaries of the legal framework.

Moreover, the Act is supported by a number of instruments and features which are new or unified. These include:

- General binding rules at national level;
- An overall programme approach with a view to achieving harmonised quality standards across the country;
- Integrated local environmental planning strategies (currently, some municipalities have over 100 land-use plans. A single environmental plan for the entire area will replace all of these);
- An integrated environmental permit covering all aspects of the legislation (part of which will be the permit for extraction of surface minerals);
- Simplified and integrated environmental impact assessment procedures (encoring the use of EIA in decision making, streamlining research obligations and making existing data available to stakeholders for longer)
- Engage stakeholders at early stages of decision making on large projects;
- Clear issuing of concrete decisions for large-scale complex projects.

Vision for Implementation

In addition to the oversight role of the Ministry of Infrastructure and Environment, the implementation of the Act will be supported through the introduction of one-stop-shops. These will receive and assess applications from industry, provide advice and engage with other planning bodies during the decision-making process. It is estimated that for every 100,000 people, a one-stop-shop will be established by local authorities.

While the budgetary and human resource elements to be provided by government have not been worked out, it is has been suggested that the resources allocated will be sufficient in relation to their case load. To encourage ongoing efficiency, applications not dealt with in an agreed timeframe will result in financial compensation for industry. Moreover, the one-stop-shops will be composed of sufficient legal expertise to deal with the broad scope of the legislation.

To fulfil their duties, one-stop-shops will engage with relevant national and regional government bodies responsible for the individual pieces of legislation. This will encourage coordination between public bodies and the issuing of coherent responses to land planning applicants. The one-stop-shops

will play a key role in supporting efficient decision-making outputs, resulting in a larger number of response to applicants in a shorter timeframe.

Moreover, the simplified environmental impact assessment procedures will mean that companies will need to conduct fewer studies. Currently, to obtain a permit for a spatial project, companies have to conduct several studies (for example soil or wildlife surveys). Under the auspices of the Act, research data already collected will remain valid for longer and industry will be permitted to re-use existing data. Moreover, some research obligations will be abolished and this will result in lower costs for applicants.

The Act will be supported by a strong digital media presence and this will provide a vast range of information to stakeholders in preparation of their applications.

Formulation of the Proposed Act

While the proposal for an integrated Environment & Planning Act has been suggested for some time, since 2011 the newly elected government energised the process of taking the legislative initiative forward. The formulation of the Act has been given a political priority with the prime minister regularly convening committee meetings with all departments involved in order to direct the process.

The expectation is that the bill will be presented to the House of Representatives for consideration at the end of 2013. If successful, the Senate will be presented with the opportunity to approve the bill. The final step in the process will be to draw-up the finally agreed legislation. It has been suggested that the Act will take effect in 2018.

The Ministry of Infrastructure and Environment engaged with multiple stakeholders in the development of Act through round table discussions, open consultation processes and social media. This includes the activities of parliamentary bodies and interaction with regional and local government, industry, local communities and other stakeholders. Given that the legislation touches upon multiple interests, no stakeholder type has been given priority.

Strengthening the governance of planning applications

A key feature of the development of the Act has been to improve the involvement of local communities in land planning decision-making processes. The legal framework recognises the importance of engaging with stakeholders at an early stage so that they understand what may be proposed. Stakeholders may be able to provide alternative ideas and this will help support the relevant committees in the decision-making process. Highlighting what will happen to former surface mining sites is recognised as being particularly important.

In tandem with the formulation of the Act, the Association of Gravel and Sand Producers published a ten point plan for effective stakeholder engagement in the context of land planning applications. The plan sets out a number of key steps that should be followed by industry when considering submitting planning applications in particular there is a strong focus on involvement and approval from community stakeholders and offering attractive nature development projects after mining activities cease at the site.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

It is clear that an appropriate legal framework is central to encouraging sustainable access to raw materials which goes hand-in-hand with improving the competitiveness of the mining industry. The complexity of EU and national land and environmental planning legislation has increased

significantly in recent years to the extent that in the Netherlands a high level political response was deemed necessary to support the ambitions of industry while maintaining high levels of protection of the environment.

If the Act is approved, the strategic position of the surface mining industry will be enhanced. To begin with, the amount of time spent on familiarisation with the legislation will be reduced given that all requirements will be outlined in a single legal document. In addition, the introduction of simplified procedures will enable land planning applications to be dealt with in a shorter timeframe. The more readily available knowledge that submitted plans have either been accepted or rejected will enable firms to quickly move on to the following stages of their business planning. This will mean greater levels of business certainty and quicker access to raw materials if plans are approved.

Moreover, the costs of engagement with government bodies and other compliance issues will be reduced. The one-stop-shops will provide a single point of access for dealing with officials and submitting a single plan. The introduction of a single environmental permit will limit the need to apply for additional permits and provide reassurance that all environmental requirements have been met. The streamlining of the environmental impact process and making relevant data available for longer will reduce the amount of time and money spent on complying with research obligations.

Encouraging early engagement with communities will also speed-up the decision-making process and help identify local needs and risks. Understanding the views of stakeholders at an early stage will help encourage the design of better planning applications that satisfy the needs of a broad range of users of particular sites. This will help to inform the judgements of industry with regard to assessing the feasibility of developing plans for certain sites and increase the number of submitted plans approved.

Features relating to the wider adoption of the good practice

The Environment & Planning Act (NL) is a good example of a regulatory measure that strengthens and simplifies the wide range of EU and national land and environment planning legislation that Member States and industry must comply with. Clearly, a capable legal team is required to integrate all aspects of the legislation given the complex interaction between the legislation. However, such an initiative can help introduce smart regulations that potentially simplify and reduce the overall level of compliance for industry and speed up the planning process.

Further Information

Environment & Planning Act (NL)

http://www.government.nl/issues/spatial-planning-and-infrastructure/revision-of-environment-planning-laws

Association of Gravel and Sand Producers – 10 point plan for Sustainable Production of Sand and Gravel

https://docs.google.com/a/cascade-zandgrind.nl/viewer?a=v&pid=sites&srcid=Y2FzY2FkZS16YW5kZ3JpbmQubmx8d3d3MnxneDoyY2FhN2UyMWU5OTgyODhl

Good Practice Cases – Case 5

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CASE 5 – SUSTAINABLE MINING MANAGEMENT - VOLUNTARY STANDARDS, SPAIN

Introduction

This is an initiative promoted by the Spanish government and implemented by the Spanish standardisation body with the objective of promoting safer and less contaminating extractive activities, increasing confidence among local agents, improving the image of the mining industry and, ultimately, the competitiveness of the mining sector. It is based on the development of two voluntary standards, UNE 22480 setting Sustainable Mining Management Systems Requirements and UNE 22470 Sustainable Mining Management Indicators published in 2008 providing guidelines for quality control in carrying out sustainable mining.

Theme

Policy and (soft) regulation, though there are also elements relating to improving the governance of the industry.

Reasons for Highlighting this Project

The specific case represents a good example of a voluntary industry initiative promoting the adoption of sustainable mining practices on the basis of standards developed jointly by a broad range of stakeholders. It provides a practical tool assisting firms to establish and implement a sustainable mining management system taking into consideration economic, social and environmental impacts. A further important consideration is that it helps the firms communicate their implementation of sustainable mining practices to the public.

Description

The sustainable mining management standards have been promoted by the Mining Directorate of the Spanish Ministry of Industry, Energy and Tourism and were developed by AENOR - the Spanish standardisation body – with the objective to promote safer and less contaminating extractive activities, to increase confidence among local agents, improve the image of the mining industry and, ultimately, the competitiveness of the mining sector.

The development of the standards came after an increasing level of mining activity and the fact that society at large has a negative view of mining operations and projects, associating them with negative environmental and social impacts. This creates conflicts between the local communities and mining companies. Communities observe and often restrict the development of mining projects before they even start, or even worse, before they are even presented.

The adoption of sustainable mining management practices - integrating economic, environmental and social considerations into all operational aspects – is seen as becoming more and more relevant to all organisations operating in the extractive industry. For the mining industry, it is important to have guidelines for quality control in carrying out sustainable mining. For the public, agreed standards can give confidence to all that the mining industry is compatible with sustainable development, improving the image of mining and facilitating access to mineral resources. It is also important to be able to demonstrate in a coherent, objective and transparent way to local communities and society in general that mining activities are not only pursuing commercial objectives, but are also socially and environmentally sustainable.

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AENOR, is the national standardisation body in Spain and it has assumed the responsibility for developing generally recognised voluntary standards, in order to:

- assist firms in establishing and implementing a sustainable mining management system;
- be firmly based on the Spanish legal and broader business framework;
- provide a set of indicators to assess and communicate its implementation.

A Sustainable Mining Management Subcommittee (AEN/CTN 22/SC3) was established in 2006 as part of the AENOR (Spanish Standardization Institute) technical committee on "Mining and Explosives" with responsibility for developing the relevant standards. The development process involved 35 experts from 25 entities. It included the central government and key regional authorities, the federation of local authorities, the Spanish Geological Service, a number of industry and professional associations, individual companies and academics.

The development of the standards took into account a number of associated initiatives, studies and reports including:

- The 2000 Commission Communication "Promoting sustainable development in the EU non-energy extractive industry"
- The 2002 Global Reporting Initiative "Sustainability Reporting Guidelines 2002" and the "Mining and Metals Sector Supplement"
- The 2006 Commission report "EU Non-Energy Extractive Industry Sustainable Development Indicators 2001-2003"
- A study of the Spanish Geological Service, 'Industria extractiva no energética española y el medio ambiente en el marco del desarrollo sostenible'[8]

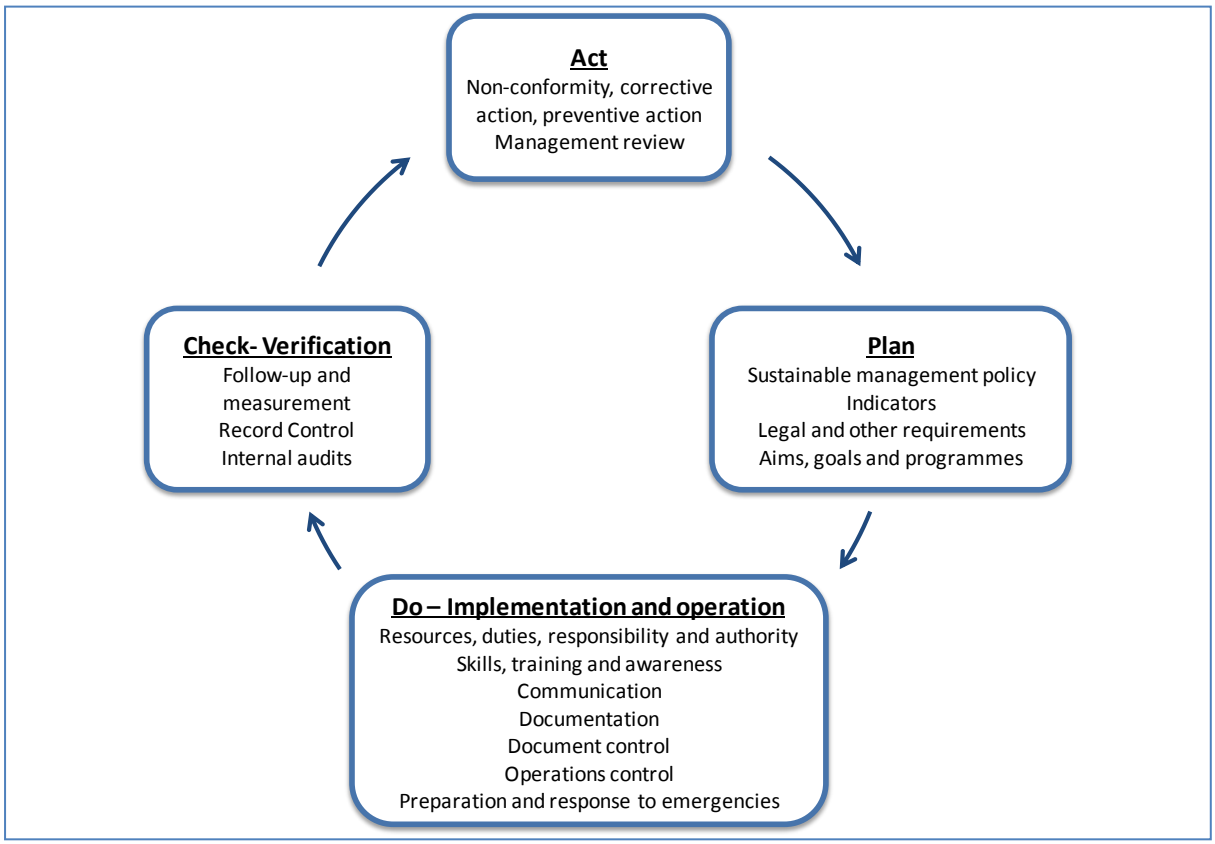
The main outputs of their work were two voluntary standards, UNE 22480 setting Sustainable Mining Management Systems Requirements and UNE 22470 Sustainable Mining Management Indicators. The standards especially apply to activities such as: exploration, investigation, extraction, processing and wastes of minerals and taking advantage of residue produced during these and other mining related activities.

The first standard (UNE 22480) specifies the requirements to be met by a sustainable mining management system to meet economic, environmental and social targets and is based on the Plan-Do-Check-Act cycle of continuous improvement. Furthermore, it is designed so that it is compatible with other management systems (ISO 9001, ISO 14001), to facilitate its implementation, maximise synergies and minimize additional costs.

Furthermore, in comparison to existing guidance documents - such as the Global Reporting Initiative "Sustainability Reporting Guidelines 2002" and the "Mining and Metals Sector Supplement" – the new standards provide a more clearly identified set of measurement parameters, units, and integrate a methodology for the monitoring and control of the sustainability indicators.

[8] Spanish non-energy extractive industry and the environment in the context of sustainable development, Spanish Geological Service, IGME 2005

Figure 1 – UNE 22480 Sustainable mining management system Plan-Do-Check-Act cycle



Source: AENOR

The second standard - UNE 22470 *Sustainable Mining Management Indicators* – identifies a total of 38 indicators organized in three categories, economic, environmental and social that can be used by firms to assess the implementation of the sustainable mining management system. The indicators are summarized below:

Economic indicators

- Economic management (annual output sold, annual net sales and financial grants from public authorities)
- Research and development (R&D investment)
- Consumables (consumables in the extraction and processing of mineral resources)

Environmental indicators

- Environmental protection (total environment expenditure)
- Energy efficiency during productive processing (direct energy consumption in production process, consumption of energy from renewable sources)
- Water demands (net primary water consumption, recycled water consumption)
- Use of dangerous substances (use of very toxic substances and substances toxic to human beings using in the production process)
- Wastes (inert and non-inert non-hazardous and hazardous waste disposed, mining waste reused/recycled/recovered and used in restoration, intermediary products in temporary storage, industrial waste generated)
- Environmental incidents (documented incidents)

Social indicators

- Communication with the local community (total donations and contributions made to the community, social response index[9], activities organised by the company that promote community involvement, investment in public, social or community interest activities, level of consumables and services acquired at local level)
- Creating employment (total direct and indirect employment, employment stability index[10], local labour share)
- Training (annual training and investment in training)
- Workers' Security and Health Issues (accident frequency[11], incidence and severity indexes, average duration of absences)

The two standards work together. Certification according to UNE 22480 for establishing sustainable mining management system also requires the adoption UNE 22470 for the reporting of economic, social and environmental impacts.

Since 2008 six companies have been certified according to the two standards on the aggregates, cement quarry, limestone, and uranium subsectors. An additional number of firms in the mining sector expressed interest but the financial crisis is seen by AENOR as having hindered the broader adoption of the standards in the initial period. The six certifications were treated as pilot actions and the experience gathered is being used for the current revision of UNE 22470:2008 and UNE 22480:2008 which started in September 2013. As part of the revision process, the companies that have implemented the standards have provided feedback suggesting that their implementation gives certainty and makes visible the performance of companies in improving their sustainable management. Additional comments by auditors that participated in the certification project exercise have also been received , mainly focusing on the need to make the indicators more specific and operational but also extending their scope to other categories of mining (e.g. energy). They are being assessed as part of the revision process and a new version of the standards is expected to be out soon..

Features contributing to sustainable supply of raw materials and improved competitiveness of the sector

The broader adoption of these two standards is expected to bring important benefits for the sector and the local communities. More specifically, it can contribute to:

- Safer and less contaminating extractive activities.
- Prevention of mining accidents.
- Improvements to the waste management, including recycling.
- Promote the use of best available technologies.
- Increase the global environmental yield of the industry.
- Increase confidence to all of the local agents (social, economic, and environmentalist) so that they understand that the mining industry is compatible with sustainable development.
- compatible and auditable systems along with other systems of management.
- Improve the image of the mining industry.

[9] I_{RS} measures the percentage of cases that are dealt in a manner that is reasonable and satisfactory for the company

[10] Share of permanent employees to total employment

[11] Share of accidents involving leave of absence to total man-hours worked

The standards allow an organisation to set guidelines and criteria for quality control in carrying out sustainable mining. They also provide a reference framework for authorities, local communities and any other stakeholders and provide information on how a company is addressing sustainability issues.

The use of indicators also contributes to the evidence base that is important for the development of soundly-based policy in that a proper implementation of these standards can help the monitoring of the fulfilment of the requirements set in the legislation and consequently provide feedback for improvements to the legal framework.

Ultimately, these results can lead to an improved competitiveness of the mining sector.

Features relating to the Wider Adoption of the Good Practice

These Sustainable mining standards are easily transferable to other regions or countries since they are developed on the basis of other well-established international standards and provide all the tools necessary to define indicators and implement a monitoring scheme. So far, there has been active interest from Latin American countries in adopting them to their national context and extending their scope to other sectors and in other EU countries, though to a lesser extent. In general, it is important that standards are adapted to national or regional contexts, taking the appropriate legal framework into account in order to be of direct relevance for the firms in the sector.

It has to besaid that it will be important in the wider adoption of such standards that experience across Europe be taken into account and an active process of comparison and selection of the best features take place. While a certain amount of experimentation is important, care should also be taken to avoid an unnecessary proliferation of such initiatives and the best features should be consolidated in a widely accepted approach.

Further Information

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Good Practice Cases – Case 6

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CASE 6 - FENNOSCANDIAN ORE DEPOSIT DATABASE, FINLAND (AND OTHER NORDIC COUNTRIES)

Introduction

The Fennoscandian Ore Deposit Database (FODD) is a well-known example of an online database that provides access to information that supports the industry, not only by providing data that helps encourage investment in further exploration and exploitation, but also supporting more effective land use planning and permitting procedures and contributing information for broader national debates on the development of the industry.

Although the database has been cited before, it is being continuously developed and also represents a model of co-operation between national geological institutes. This case therefore provides a basic explanation of the features of the database and how it is being developed, mentions some of its applications and also provides some indications of the impacts that it is having.

Theme

Strengthening the information framework and the knowledge base in relation to raw materials.

This instrument also contributes significantly to improving land use planning processes and eventually permits and authorisation processes. By improving the information available and its accessibility, it also contributes to governance of the sector.

Reasons for Highlighting this Project

The Raw Materials Initiative highlighted the need in Europe to improve the knowledge base in order to enhance a sustainable supply of materials from within the EU. In particular, the availability of comprehensive information on geological resources is needed to underpin the preparation of the spatial land use plans that govern access to raw materials. Subsequently, the Report of the Ad hoc Working Group on 'Improving Framework Conditions for Extracting Minerals for the EU' in 2010 stated :

> *'The Working Group considers that publicly available and accessible digital, interoperable data on the nature, location, extent and geometry of minerals, at sufficiently high resolutions, is essential for national authorities to assess their mineral potential. Promotion of mineral potential helps to attract the investment necessary for more detailed exploration and exploitation.'*

More specifically, the Ad hoc Working Group cited the Fennoscandian Ore Deposit Database (FODD), and its associated metallogenic map, as best practice in the area of knowledge sharing.

FODD still remains a reference point as an example of effective knowledge sharing and has continued to develop in recent years. In fact, it is claimed that it remains the best database of its kind in the world. The decision was therefore taken to cite FODD once more as good practice and provide a description, both of its basic features and those that have been under development.

Description

The Report of the Ad hoc Working Group commented that improving the knowledge base of mineral deposits in the EU required:

- synergies between the Geological Surveys

- providing public data for policy making and to facilitate investment in exploration and extraction
- providing minerals intelligence.

It also commented that networking must be structured, organised, oriented to the long-term and consensus based. The FODD has characteristics that that comply with all of these requirements.

The Nature of the Database

The Fennoscandian Shield is a large and tectonically stable area of exposed Precambrian crystalline, igneous and high-grade metamorphic rocks that covers Norway, Sweden, Finland and parts of north-west Russia.

The Fennoscandian Ore Deposit Database is the result of a joint project between the Geological Survey of Finland (GTK), the Geological Survey of Norway (NGU), the Geological Survey of Russia (VSEGEI), the Geological Survey of Sweden (SGU), and SC Mineral (Russia). It is co-ordinated by the Geological Survey of Finland.

Large metal deposits & large mines

The project began in 2003 on the basis of the bedrock and geophysical maps of the Fennoscandian region, developed over a number of years. The next five years were then spent in data gathering, and structuring the database, while also developing working relationships between the geological institutes.

At the time of finalising the first version of the FODD in September 2007, it contained information on 942 deposits: 292 in Finland, 154 in Norway, 237 in Russia, and 259 in Sweden.

This information was made available through an online interactive map server.

The database and its content have continued to develop. In the version published in August 2013, there is information on nearly 1700 mines, deposits and significant occurrences across the region:

- 351 deposits in Finland
- 210 deposits in Norway
- 246 deposits in Russia
- 883 deposits in Sweden

The FODD contains information on location, mining history, tonnage and commodity grades with a comment on data quality, geological setting, age, ore mineralogy, style of mineralisation, genetic models, and the primary sources of data. This is all made available online and explanatory notes are provided for download.

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An associated metallogenic map was published in 2009. The map is accompanied with an explanatory publication that indicates and describes the major metal deposits and all metallogenic domains and the probable future metal ore discoveries across the Fennoscandian Shield.

The metallogenic map contains 168 major metallogenic areas. Of these, 46 are completely or mostly in Finland, 40 in Norway, 41 in Russia, and 41 in Sweden; 24 areas across international borders.

By metal group, there are:

- 48 areas dominated by potential for ferrous metals (Fe, Mn, Ti, V, Cr),
- 36 for copper, zinc or lead (Cu, Zn, Pb),
- 31 for precious metals (Ag, Au, PGE),
- 30 for nickel or cobalt (Ni, Co),
- 11 for metals used in modern advanced technologies (Li, PGE, REE, Ta, Zr).

The database and supporting material is accessible online, with various visualisations of the data possible. There are also publications, including printed maps.

The Key Information Available

As FODD has developed the variety and depth of information has continuously been improved. Currently, information provided includes:

- *Critical metals and minerals in Fennoscandia:* information is provided on the 14 economically important raw materials, designated as 'critical raw materials' by the European Commission, plus 6 additional commodities[12] regarded as important. A commodity fact sheet is provided on each of the commodities that has information on its main current and future uses and also ancillary uses, global and Fennoscandian resources and production, main producing countries, deposit types etc..
- *Mines active in 2012 in Fennoscandia:* in addition to maps, list of mines, their location, their metallogenic area, reserves, amounts mined, composition etc.
- *Large metal mines in Fennoscandia:* list with details on active and closed large mines.
- *Large unexploited metal deposits in Fennoscandia*: list with details of unexploited metal deposits
- *Potentially large unexploited deposits in Fennoscandia*: lists with known details

Other information can also be derived from the database, for example, the amount of metals produced historically for various areas of the Fennoscandian shield, the periods of mining activity for each mine, various geological characteristics of the deposits, etc.

In all, there are 43 large active mines, 19 large closed mines, 54 large unexploited deposits and 57 potentially large deposits in the database.

The new industrial mineral deposit map indicates nearly 600 mineral deposits in Fennoscandia, of which 110 are currently active mines. The number of closed mines is 223 and 250 have not been exploited at all. The deposits on the map represent 35 different mineral commodities, of which 16 are in production at present. Of the active mines and unexploited deposits, about 100 contain resources of critical minerals or minerals which contain critical metals.

[12] The additional commodities are : Yttrium, Scandium, Lithium, Sulphur, Tellurium and Phosphorus

If the 498 mostly very small historic mines are excluded, 61 % of the deposits listed in the database have not been exploited at all. A number of these might well be economically viable in the future, especially if further reserves are revealed by exploration.

Fennoscandia, in fact, includes a series of sub-areas where the degree of industrial development is still low, but the mineral potential is exceptionally high. This is an issue that is not just of interest to the mining and exploration industry. It shows that national decision makers, citizens, and research organisations can also benefit from region-wide information and the databases of mineral deposit data.

The Use of FODD

All the material in the database is protected by copyright laws and the copyright on the data is owned by the Geological Surveys of the respective countries and in the case of the Russian data, the Ministry of Natural Resources of the Russian Federation.

The Data Owners encourage readers to use the FODD data available online for their research, academic, professional or personal purposes, with appropriate acknowledgements. Data can also be stored and used for non-profit uses, but may not be sold to third parties or otherwise used commercially without a specific licensing agreement. .

Impacts of FODD

The number of visitors accessing the FODD database online has increased steadily over the period since it was first available in 2007. Annual visits increased from 2002 in 2007 to 4481 in up to November 2013, while the use of the FODD map service has been steady in recent years around the 1200 mark.

More generally, FODD provides a very good example of the international co-operation in building a harmonised knowledge base, advocated by the Ad hoc Working Group. It has become a major source of information for industry and the general public, helping to increase interest of in mining and exploration across the region.

In particular, it has made it possible for smaller companies to plan strategy and exploration efficiently.

While it is clearly not possible to attribute improved performance solely or even directly to the database, there has clearly been an increase in activities in Finland, Norway, Sweden, with 45 companies currently active in exploration for Au, Ni, Cu, PGM, ferrous metals and Hi-Tech metals, major new mines opening and old mines either expanding or re-opening.

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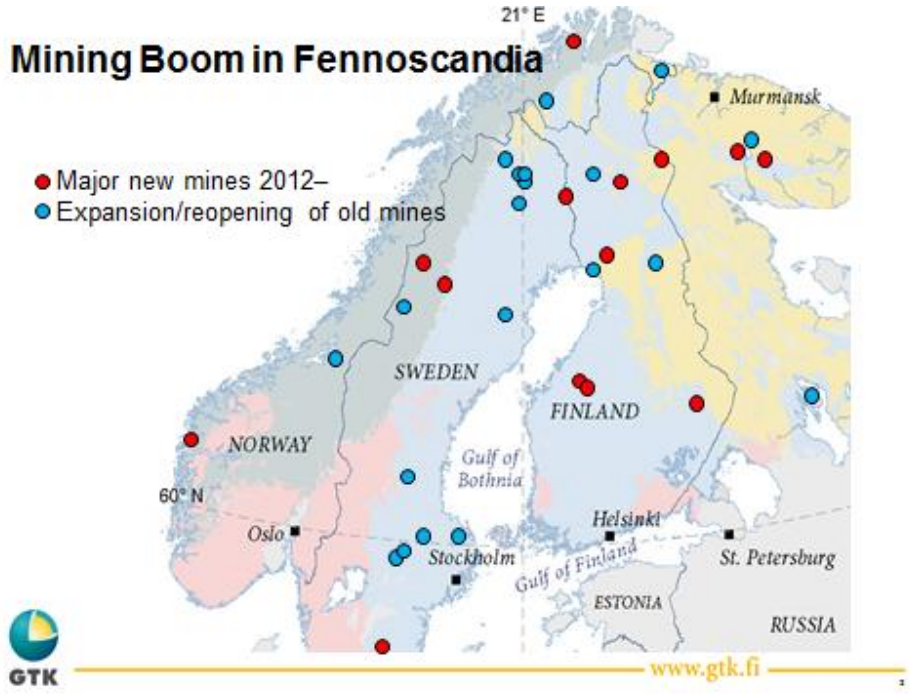

Source: GTK

Specifically in Finland, exploration expenditure increased from €54.3 million in 2007 to €86.8 million in 2012. In addition, there were other indications of increased activity, though with some variations around the trend.

Table - Developments in Finland 2007 – 2012

	2012	**2011**	**2010**	**2009**	**2008**	**2007**
Exploration investments, €m	**86.8**	81.0	60.8	50.5	60.1	54.3
Companies	**45**	52	49	42	45	38
Reservations	**197**	178 (*88 + 90*)	138	123	98	160
Claims, total area	**131 000 (*hectares*)**	108,000	89,000	96,000	110,000	
Exploration permits - old Act +new Act - hectares	**315,100 + (205,900)**	396,000 + 96,000	270,000			
Drilling, meters *Grassroot *Greenfield *Brownfield	**366,000** 36,000 103,000 227,000	369,000	363,000	271,000	340,000	223,000

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

As has been frequently pointed out, the availability of high quality information on a country's geology and industrial activity greatly assists not only the development of exploration and exploitation of raw materials by the industry, but also contributes to the overall governance of the

sector, feeding into planning and permitting processes and providing a better basis for decision-making by the authorities and helping to make the general public better informed and aware of the possibilities and importance of the industry. It also makes an important contribution to promoting sustainability and the development of the corresponding analysis and management techniques.

The Fennoscandian Ore Deposit Database and the associated metallogenic map continue to provide essential information on an important geological area, to elaborate the information base for the industry across a still under-explored region and to develop intelligence to assist industry in its investment decisions. Although there is not necessarily a direct link with increased exploration and mining activity, the developments of FODD may be judged to have greatly assisted this process.

Features relating to the wider adoption of the good practice

In order to develop FODD, cross-border co-operation between Nordic and Russian geological institutes has had to be built up consistently over a number of years and is now judged to be highly effective. The lessons of this process as much as the detail and quality of the information collected, together with the innovative generation of intelligence for industry are all elements that could usefully be adopted elsewhere.

Further Information

http://en.gtk.fi/ExplorationFinland/FODD

http://en.gtk.fi/research2/program/mineralpotential/fodd.html

Explanatory remarks on the database: http://arkisto.gtk.fi/tr/tr168.pdf

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Good Practice Cases – Case 7

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CASE 7 - MINERALS ONLINE – GIS, UK

Introduction

The Minerals UK website http://www.bgs.ac.uk/mineralsuk/ was set up in 1999 and provides information, maps and statistics about mineral exploration, mining production, GIS and spatial information and trade statistics. The website is operated by the British Geological Survey (BGS)'s Centre for Sustainable Mineral Development (hereafter "the Centre").

Theme

Strengthening information and the knowledge base

There are also elements relating to land use planning.

Reasons for Highlighting Project

There are only a few examples of a comprehensive approach to sharing and disseminating information and knowledge about minerals and metals in Europe. Despite funding reductions, the website is extensively used and is seen as an independent, impartial and authoritative source of information and data. The site used to require free registration but this requirement has been dropped in order to promote site usage. It places an emphasis on open access.

The website serves an important "public good" function by providing policy makers, regulators, land planning staff, local authorities, industry and civil society with information and data about current levels of mineral and metals production, the level of resources that are needed to meet current and future economic needs, etc. It has a broad target audience and it does not serve any particular interest group.

Description

Overview

The Minerals UK website was set up in 1999 with funding support from UK central government through the former DTI (now BIS) which formerly had responsibility for mining policy. Responsibility for national mining policy now lies with DECC (Department of Energy & Climate Change (DECC), which is responsible for issuing licences for oil and gas exploration. The Department for Communities and Local Government (DCLG) has responsibility for planning policy and also provided further funding support up until 2010. Although DCLG no longer funds the site directly, it continues to provide some input to site content on planning.

The website's aims and scope have been broadened over time. For instance, it was asked by DECC to provide information for planners on how to take mining issues (including mining sites of national interest) into account in planning processes. The website also now includes spatial information on mining resources, information on sustainable development, and information about the UK policy and legislative context for both planning and mining.

With regard to its evolution over time, an important consideration in terms of the political context in which the website operates is that when the website was set up, minerals and mining policy was UK-wide, whereas since that time, there have been significant changes in organisational responsibilities as a result of devolution. Responsibilities for planning and licensing have largely been devolved and the website has had to be adapted accordingly. England, Wales, Scotland and Northern Ireland all

have a broadly similar policy framework, but there are some differences between the four jurisdictions, and these have had to be reflected on the website. The limited mining activities that there are in the UK have a greater impact on England than elsewhere, reflecting that the majority of the UK population is located in England, and the amount of activism from local communities (which in recent years has been concentrated in England for new developments such as proposed Potash mining and shale gas extraction).

Aims and objectives

A more detailed description as to how the website operates, its aims and objectives and how it has evolved over time is now provided. A need was identified for a centralised resource containing all mineral-related information so as to ensure that archival data and previous exploration data and drilling history were made more readily available to prospective mining companies.

The website was set up to address identified needs and information gaps. Part of the reason that such information was not available previously through a centralised knowledge management database that was easy to access was that in the UK, unlike in many other EU countries, there is no legal framework for exploration and mining to support the development of the mining industry and mineral exploration activities. Whereas there is a national licensing system for oil and gas overseen by DECC, there is no such licensing system for metals and minerals.

Although there are various factors why the mining sector today is very small, such as the decline in the coal and steel sectors that dominated UK mining industry in the 1970s and 1980s, the absence of a national licensing scheme and regulatory framework similar to that in Ireland was given as one of the main reasons why the Minerals UK website was needed. There was no national level database or archive that systematically collects information from industry and from national bodies and agencies on the geological characteristics of a particular region or locality and planning information and mining.

The UK Minerals website was therefore set up with UK government funding and backing to provide an online information portal about mining and minerals in the UK. The site was intended as a place where the "user community" (e.g. geologists, estates managers and planning professionals, lawyers, industry and local communities) affected by mining exploration and production can obtain information and statistics about minerals and current and future resource needs, planning procedures and land use policies.

Information, research publications and data available through online platform

Since 1913, BGS has collected, monitored and analysed global minerals and metals production statistics in the UK and globally and is one of only two organisations worldwide that collects such mineral statistics (the other is the US Geological Survey). BSG is also the major UK national provider of spatial minerals information, and this is likewise made available through the website. A further aim is to provide a dissemination mechanism through the website for the distribution of statistics, as well as data collected by BGS itself, since the organisation produces a lot of geo-spatial information and data.

Research carried out by BGS on minerals and mining-related issues directly relevant to the user community is also published through the website. For instance, research has been published on metallogenesis, land-use and the impacts of mineral extraction and geo-materials. Some website content and downloadable materials are aimed at a more general audience, whereas some content has been developed to meet more specific user needs. Examples in this regard are the drawing up of fact sheets to provide information about mining and land use relating to the planning sector. The need for such information to be provided was identified through feedback from the planning

community since many planning officers in local authorities are not fully familiar with the technical aspects of the intersection between planning issues and minerals and mining policy issues. The website also provides information on environmental issues.

The website makes a number of research publications available. Although these would have been produced anyway by BGS, they are promoted and disseminated through the website. The main types of documents and statistics available are: the United Kingdom Minerals Yearbook, which is one of the best-known publications available on the website and provides comprehensive statistical data on minerals production, consumption and trade to 2011 and estimates of production for major mineral commodities in 2012. Other key publications are the Industrial Mineral Assessment Unit (IMAU) reports and maps and the World mineral production 2006-2010.

The Exploration Guide to the UK - 1990 and 2000 editions – is one the most popular documents on the website, although there has been no funding to update the guide. It was noted that the situation in terms of the legislative framework hasn't changed much during the period in terms of licensing and planning. However, environmental legislation has evolved over this period.

BGS has recently carried out some work jointly together with the Crown Estate on offshore resource maps. This has immediately been made available online through the web portal for the user community to use.

Outputs and results

A number of outputs and results were identified, such as:

Outputs	• The number of website visitors • The number of unique users.
Results	• Number of research publications downloaded • Number of statistical downloads
Impacts	• Greater awareness among user community about mineral and mining policies in the UK • Increased availability of relevant information and data through a single centralised information portal • Use of research results by divers stakeholders (industry, planners, environmental bodies and citizens)

At the time this report was produced, no data were available on the web statistics for the UK minerals website, although the data have been requested. It was acknowledged that one aspect that could be improved is addressing the lack of detailed data on website metrics, in terms of which publications are being downloaded and by whom. BSG commented that although there is a lack of website data on key metrics, they know that statistical data produced by BGS is extensively used by industry. It was commented by the interviewees that the Minerals UK website receives high numbers of users and this has continue even though funding has stopped (although the site could be doing a lot more if it were to be better funded). There are a lot of repeat visitors to the site, which suggests high levels of utility.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

Over the years since it was set up in 1999, the initiative has helped to promote the sustainable supply of Raw Materials. For instance, there is a section on the website that deals specifically with the sustainable use of resources. Geographical Information Systems (GIS) data available through the website on mineral resources are also useful in ensuring the sustainable use of resources through

their integration into problem-solving applications such as land-use planning and Strategic Environmental Assessment.

Pulling together disparate information is in itself a major value added to industry since this saves valuable time and resources in investigating the potential of a given area. For instance, digital 1:50 000 scale data of mineral resources are available as vector data in a variety of formats under license only. This allows industry to use the data in GIS and to integrate the data on the website with other types of spatial data. Industry also benefits from the making available of the entire series of Industrial Mineral Assessment Unit (IMAU) reports and maps. The website has a section setting out industry news, although this has not been updated for some time (since 2011). The site is not directly meant to contribute to sectoral competitiveness, but BSG has received feedback from industry that exploration firms in the minerals and mining sectors use it as an online resource extensively in researching the geological potential of particular localities and regions of the UK.

Resourcing

As regards funding sources, the site was originally funded by the former DTI (now the Department for Business, Innovation & Skills (BIS)). However, their contribution to funding finished in the early 2000s, since they no long have responsibility for mining and minerals policy. In the past, BGS received small grants towards the costs of operating the site (the most recent being circa £10000 per annum from DCLG). The site is now entirely self-financed by BGS itself.

In terms of the direct costs of the website, the costs of maintenance and updating the website are about £10000 per year, mainly the costs of employing a website specialist part-time, who is responsible for uploading information, data and generate website updating. It has been estimated that the amount of work involved in website maintenance and updating per year is only about 20 days. Given the wide usage of the site, the website certainly demonstrates good value for money.

The site requires significant additional human resource inputs to carry out the research and to gather the statistics that are published and disseminated through the website. However, some of these activities would be undertaken by the BGS anyway.

Effectiveness

The website itself has been an effective tool for knowledge management in that the site is extensively used by industry and a variety of stakeholders.

However, in assessing the effectiveness of the web site, the UK context has to be taken into account, since it is not as conducive to the development of the mining industry for minerals and metals as in many other EU Member States and there is an absence in the UK of a legal framework on mining to support the development of the mining industry and mineral exploration activities and no licensing system. Since the major decline in the UK coal and steel industry in the 1970s and 1980s, the mining industry today is very small.

This has posed a number of practical and funding constraints for the Minerals UK website. First, there is no longer any funding from central government and no systematically collected national information Nor is there a supportive regulatory framework or a permits and authorisation system in place. Without this, it is very difficult to gather all the data and information together in one place. In the future, to improve the site, BGS are going to develop some information on “finding out what you need to know as a FDI investor”. Although there is already a description of land use planning, there is a need to produce an overview of which permits are needed from the different agencies, including the environmental permits required.

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Future development and sustainability.

The website has now been operating for more than 14 years and is now financially supported by BGS alone, with no external funding support.

This may limit the longer-term viability of the site – or at least the potential scope to ensure that new and useful features, research and data are made available for its users in future. Compiling statistics is resource-intensive and costly.

Companies in the minerals and mining sector, as well as the UK public sector are very keen that the website should be maintained and updated.

Features relating to the wider adoption of the good practice

Among the key conclusions identified through this initiative is the importance of securing the buy-in of different stakeholders to make different types of data available through a centralised online repository since their willingness to contribute up to date content and statistics is clearly central to maintaining the site's utility and in attracting repeat visitors.

This is only possible if stakeholders make regular contributions. For instance, BGS, which maintains the site, makes its statistics, publications and research available through the site, and different governmental stakeholders responsible for different policy issues e.g. planning, mining policy - provide information and data.

Sharing information through an open access data policy is a good practice. This has increased the number of visitors to the site compared with the earlier period of the website's existence, when a registration scheme was in operation and there was restricted access to particular datasets. Another aspect of good practice has been keeping the website relatively simple. A conscious decision was taken to avoid spending too much on the website or making it technically complex. The focus has been on maximising its utility as an information repository and on providing materials and content.

Transferability potential

The difficulties encountered in developing the website in the UK do provide some lessons for other countries where the raw materials sector is undeveloped. In spite of limited funding the site does provide a valuable resource for industry and other stakeholders.

Further Information

Further information and contact details: http://www.bgs.ac.uk/mineralsuk/

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Good Practice Cases – Case 8

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CASE 8 - DCENR EXPLORATION DATA RELEASE INITIATIVE, IRELAND

Introduction

The Exploration and Mining Division (EMD) of the Department of Communications, Energy and Natural Resources (DCENR) is responsible for the promotion and regulation of mineral exploration and extraction, and for development of minerals policy. As part of its remit, the Division administers the State's Prospecting Licence and State Mining Facility system, which is underpinned by a strong regulatory framework through the Minerals Development Acts 1940 to 1999.

The DCENR Exploration Data Release Initiative seeks to make available a wealth of previous exploration data through an open access and free of charge data policy. There are two main websites through which information is disseminated – EMD's industry-oriented Minerals Ireland website (www.mineralsireland.ie/) and the parent Departmental website www.dcenr.gov.ie/Spatial+Data/.

All Prospecting Licence (PL) holders in Ireland are required to submit biennial work reports to EMD that provide full details of the company's exploration activities, including the results of all prospecting work carried out. These reports are made publicly available six years after submission, or upon surrender of a licence if earlier. To date, EMD has published approximately 3,000 such reports online which relate to over 1300 PL Areas. A search engine has been developed in order to search these reports, as part of the open access data policy.

Theme

Information and knowledge bases

Reasons for Highlighting this Project

The initiative demonstrates the value added of an open access data policy in helping to make exploration and other relevant data readily accessible to industry, researchers and local communities. The release of tens of millions of Euros worth of exploration data into the public domain, coupled with Ireland's excellent mineral potential and attractive regulatory regime, has resulted in significant exploration interest within the State. Currently, in excess of 650 Prospecting Licences have been issued to over 45 exploration companies (the highest number of licences in over two decades). This initiative also shows the value added of the development of a centralised online repository to access data, information and knowledge through a single web portal.

It also shows that there are potential cost savings for industry in making data and information on previous exploration activities for metals and minerals in Ireland available publicly. Since exploration for raw materials is a costly activity, it is important that new exploration builds on previously collected data and the lessons learned through previous exploration activities.

Description

Overview

Since 2000, EMD has been releasing all of its non-confidential exploration data, free of charge and in digital format. Four broad data types have been made available:

- Company Exploration Reports (described above)

- Airborne Geophysical Data. Since 1995, over 60 low-level, high resolution, airborne geophysical surveys have been flown across Ireland. All airborne survey data (raw, processed and interpreted data, maps and associated reports) over four years old are made available to industry on request. Owing to its large size, the airborne geophysics data-sets are currently only made available on CD and DVD-ROM.
- Geospatial (GIS) Data. A plethora of geospatial data pertinent to mineral exploration can be visualized online using an intuitive, user-friendly map viewer (see http://spatial.dcenr.gov.ie/ExplorationAndMining/SpatialViewer/index.html). Currently available GIS layers include base maps, aerial photography, PL Area boundaries and status (i.e. open, held), bedrock geology, airborne geophysics survey outlines, mineral deposits and occurrences, drillholes, current and historic mines and environmental constraint areas (e.g. Natura 2000 sites, National Monuments, etc.). A number of geospatial datasets (PL Area boundaries, historic mines, airborne survey outlines) can be downloaded to facilitate integration within users' personal GIS projects. The integrated spatial data, exploration company reports and airborne data provide exploration clients with much of the information necessary to assess a region's mineral prospectivity and enable them to determine whether a Prospecting Licence application is warranted.
- Administrative Data on Prospecting Licence (PL) Areas. This includes former licence holders, PL start and end dates, size of PL Areas, minerals that the licence has been issued for and detailed maps of PL Areas.

Working together with other data and geo-information providers

A large volume of older company work reports submitted for current and expired PL Areas is held by the Geological Survey of Ireland (GSI). EMD has collaborated with GSI in making these reports publicly available. GSI and EMD have jointly released access to Exploration Company Report repositories through a map viewer and text entry screen. Users can seamlessly access work reports for a given area by either specifying a Prospecting Licence Area Number or selecting the spatial area they are interested in. This facility provides access to thousands of additional company work reports and associated maps, borehole logs, consultant reports, etc.

Industry feedback

Industry feedback suggests that the information and data made available online about previous exploration is very helpful. This extends back to the 1960s and even further for some licence areas. The data can be used by data capture programmes and then integrated into companies' Geographic Information Systems.

The making available of airborne data after four years as part of the data release initiative was especially appreciated by industry, since it is rare that such data is available free within Europe. It can be very costly for smaller exploration companies to procure such data.

Future developments and improvements to the website

The approach to the dissemination of data through the website has already proved effective, with positive feedback from industry. However, EMD seeks to improve the site on a continual basis. For instance, at present, airborne data are too large to download but can be requested on CD free of charge. In future, an FTP site will be set up to facilitate the download of these data.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

Key success factors

Among the key success factors identified contributing to the improved competitiveness of the sector in Ireland while advancing the goal of the sustainable supply of raw materials, are: an open access data policy; a strong regulatory framework; and efficient and transparent procedures for licence applications. These three elements are mutually reinforcing. The more data and information that are made available to prospective licensees, the lower the costs of exploration and the more efficient and effective the process of carrying out all the preparatory research to apply for a licence.

The success of the national licensing system helps to ensure that there will be a sustainable supply of exploration data and geospatial information in future, which in turn encourages industry to invest in exploration and increases the potential for further discoveries. Since there are currently over 650 active licences, data will continue to be made available through the data release initiative.

Benefits for the raw materials exploration industry

The availability of interactive maps, spatial data and reports is particularly appreciated by industry.

There are cost savings for Prospecting Licence holders in being able to access these data and information. This reduces duplication in surveys, and hence lowers costs for exploration companies. Making data and information available online provides a new licensee with a wealth of information and a basis on which to design their exploration programme. They in turn add value during the tenure of their Prospecting Licence which benefits any subsequent company carrying out exploration activity. This long-term approach should help to reduce industry costs and thereby encourage investment in exploration activities.

Features relating to the wider adoption of the good practice

There are a number of features of the licensing scheme that could be adopted elsewhere, and represent good practice. These are, in summary:

- **The imperative of a supportive regulatory framework and permits and licensing system.** The Minerals Development Acts 1940 to 1999 provide a robust, fair and transparent regulatory system. Without a successful national licensing system in place, exploration data would not be collected centrally by EMD and made available for release.
- **An open access data policy is crucial to promoting the development of a vibrant exploration sector.** The availability of data and information on geology, geochemistry, drill holes, geographical boundaries, airborne geophysics and the location of mineral occurrences enables industry to design an informed exploration programme, reduces duplication and hence costs.
- **Cooperation between different types of organisations that have data and information is crucial** in building up a repository and knowledge management system.
- DCENR integrates many different types of data online including data from GSI, National Parks and Wildlife Service and various other Government Departments. This approach, **which encourages information sharing and effective dissemination,** is crucial given that a number of bodies (licensing, planning, environmental authorities, providers of GIS data and services) have information and data that are vital to enable the exploration sector to make investment decisions.
- Spatial data is made available through the DCENR Exploration Data Release Initiative **and does not require any specialist GIS software, which would deter non-industry users**. The information and data can be viewed through a web browser (which opens up pages such as

the Spatial Data Map Viewer). In addition, spatial data can be integrated directly into companies' own datasets using GIS.

The above bullets describe a number of potentially replicable practices. Clearly, in transferring an approach from one EU country to another, there are always challenges in applying the same approach without adapting it to country-specific circumstances. However, the data release initiative is a potentially replicable model.

DCENR is willing to provide information to interested parties on the two websites – Minerals Ireland (www.mineralsireland.ie/) and the Department's own website www.dcenr.gov.ie/Spatial+Data/.

Further Information

Further information can be obtained from the Department of Communications, Energy and Natural Resources:

Contacts are: Dr. Eibhlin Doyle (+353 1 678 2814) or Dr. Wayne Cox (+353 1 678 2677).

Eibhlin.Doyle@dcenr.gov.ie or Wayne.Cox@dcenr.gov.ie

Good Practice Cases – Case 9

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CASE 9 - GERMAN MINERAL RESOURCES AGENCY (DERA), GERMANY

Introduction

The German Mineral Resources Agency (DERA - Deutsche Rohstoffagentur) was established in 2010 as part of the Federal Institute for Geosciences and Natural Resources (BGR). Its objective is to become a mineral resource competence centre and to serve as a central information and advisory platform for the German government and the German industry in the area of mineral raw materials. DERA provides a wide range of information services including analysis of developments in the minerals markets, reviewing raw materials potential and analysis of alternative sources of supply as well as one-to-one support to firms. In parallel, it represents a think tank for the Federal Government to support policy-making.

Theme

Strengthening the information framework and the knowledge base in relation to raw materials

Reasons for highlighting this Project

The German Mineral Resources Agency represents a particularly good example of a public service providing quality analysis of the future supply and demand of raw materials from primary and secondary sources and effectively addressing the needs of the industry, across the whole raw materials supply chain. The reports of DERA, which make use of the existing knowledge base available in the Federal Institute for Geosciences and Natural Resources, and other sources, are publicly available and cover a range of thematic areas that are of relevance to the industry. Tailored services to individual firms are also an effective mechanism for promoting better planning in the use of raw materials, an improved response to fluctuations in raw materials markets and, ultimately, a more sustainable use of raw materials. The strong co-operation and co-ordination with industry associations at national and local level that ensures the relevance of DERA's outputs and activities is also noteworthy.

Description

The creation of DERA was the result of a process initiated in 2005 when a high-level raw materials summit was organised by the Federation of German Industries (BDI) with the participation of the German chancellor. The developments concerning access to mineral commodities at a global level, characterised by supply shortages, rising and volatile commodity prices and, as a result, uncertainty concerning raw materials supply, had provided the context of that discussion.

For the German industry – which is to a large extent dependent on commodity supply and relies on access to specific types of minerals for the development and expansion of its high-tech industry and the renewable energy technology sector[13] – key issues were the problematic access to quality business intelligence, the need for more reliable information on raw material markets and better understanding of developments. The pertinence of these issues has been confirmed in subsequent surveys by the Association of German Chambers of Commerce and Industry (DIHK) in most recent years (2010 to 2012).

[13] In 2009 the value of imports of raw materials in Germany was around €84 billion, €22 billion of which concerned metal raw materials.

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The discussions between the industry and the German government led to a number of strategic decisions including, among others, the foundation of a service (DERA – Deutsche Rohstoffagentur) that would provide quality information on mineral commodities and become a competence centre advising both the industry and policy makers on issues related to the secure supply of raw materials. Other measures taken were the formation of a Centre for Resource Technologies in Freiberg[14] and an inter-ministerial forum with the involvement of the Federation of German Industries to improve coordination.

DERA was given the following tasks[15]:

- Establish a raw materials information system to improve transparency on the raw materials markets and provide a more reliable basis for the German industry in its efforts to secure access to raw materials;
- offer advice and support for companies and business associations. The needs of SMEs[16] are given priority since they are the ones that have limited capacity to acquire and analyse information in matters of supply of raw materials and current market trends. Their assistance is related to the reduction of the price of raw materials and of supply risks, diversification of sources of raw materials, participation in projects to explore for or extract raw materials, and apply efficient processes for extracting and processing raw materials;
- support the Federal Government in setting up and implementing assistance programmes in the fields of exploration and extraction of raw materials and raw materials efficiency;
- be involved in research and development projects at the preindustrial stage examining the potential for raw materials, new instruments and methods for raw materials, and
- develop co-operation with countries rich in raw materials.

Initially DERA took the form of a liaison office within the Federal Institute for Geosciences and Natural Resources (BGR). Since 2012 it has become a separate department with its own facilities in Berlin. Currently DERA occupies 15 staff and in 2013 its budget was €3 million – up from €2.5 million the previous years - almost fully covered by the Federal Government[17].

The main target group of DERA's services is that part of German industry that is involved in the exploration, extraction and processing of minerals and associated manufacturing processes, but also the exporters of mining machinery and equipment. SMEs[18] are given priority since they have limited capacity to acquire and analyse information in matters of supply of raw materials and current market trends. DERA also provides advice to firms on issues related to price and supply risks and sustainable production processes.

At the same time, DERA is expected to operate as a knowledge centre to support policy making by providing quality analysis to the government and supporting the implementation of certain policy measures. DERA reports regularly on developments in the raw materials sector to the Inter-ministerial Committee on Raw Materials.

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[14] http://www.hzdr.de/db/Cms?pNid=2423

[15] BMWI (2010), The German Government's raw materials strategy - Safeguarding a sustainable supply of non-energy mineral resources for Germany http://www.bmwi.de/English/Redaktion/Pdf/raw-materials-strategy,property=pdf,bereich=bmwi2012,sprache=en,rwb=true.pdf

[16] In the German context this includes the firms that comprise the Mittelstand that may have up to 1000 employees.

[17] http://www.bundeshaushalt-info.de/fileadmin/de.bundeshaushalt/content_de/dokumente/2013/soll/epl09.pdf#page=141

[18] In the German context this includes the firms that comprise the Mittelstand that may have up to 1000 employees.

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Tools of support

To achieve its objectives DERA has developed a number of tools and activities. They include:

- A commodity information centre producing reports (DERA Rohstoffinformationen) focusing on specific categories of minerals or specific sectors;
- A minerals price monitoring system;
- Reports and studies concerning the raw materials situation and potential and the mining industry in Germany and in selected countries
- Reviews of raw materials potential (exploration and mining projects, uses and waste) as well as possible alternative or new sources of supply;
- Provision of one-to-one advice to firms in relation to raw material supply risks and diversification strategies taking into account geo-strategic issues of safety and environmental aspects (development of alternative strategies and networking with industry)..
- Organisation of various events with participation of industry including the particularly successful – according to DERA and industry representatives - organisation of the DERA Industry Workshops[19] focusing on specific minerals. Additional events are organised in co-operation with local chambers and associations aiming to increase awareness on issues related to the supply and demand of raw materials.

In addition, DERA provides professional support to the operation of "commodity partnerships" between the Federal government and other partner organizations in the field of raw materials. It supervises the commodity support programmes of the Federal government (exploration funding, investment and loan guarantees). Additionally, DERA provides expert opinion on the applications for guarantees for untied financial loans relating to raw materials projects. It also manages the German raw material efficiency prize awarded to firms smaller than 1000 employees that implement outstanding examples of raw material and material-efficient products, processes or services and application-oriented research results[20].

In co-operation with the Chambers of Commerce Abroad (AHK) and the Germany Trade and Invest (GTAI) DERA supports firms that are interested in accessing raw materials globally, so far focusing on a number of countries including Australia, Canada, Chile, Peru, Russia and South Africa. DERA provides local contacts to help firms, participates in promotion activities and conferences. DERA has published reports reviewing the opportunities for German firms to be involved in the raw materials markets of those countries[21].

The services and activities of DERA rely on the expertise and the scientific and technical infrastructure of the BGR. Making use of the BGR technical expertise and databases, DERA's staff analyses and evaluates the international markets for mineral resources that area the basis for the information and advisory services provided. In parallel, DERA makes use of the active collaboration of the BGR with national and international networks of Geological Surveys, commodity associations and research institutions and with resource-rich countries.

The diagram below summarises the main objectives and key services offered by DERA.

[19] http://www.bgr.bund.de/DERA/DE/Veranstaltungen/veranstaltungen_node.html
[20] http://www.bgr.bund.de/DERA/DE/Rohstoffeffizienzpreis/rep_node.html
[21] http://www.bgr.bund.de/DERA/DE/Rohstofflaenderkooperationen/Studien/studien_node.html

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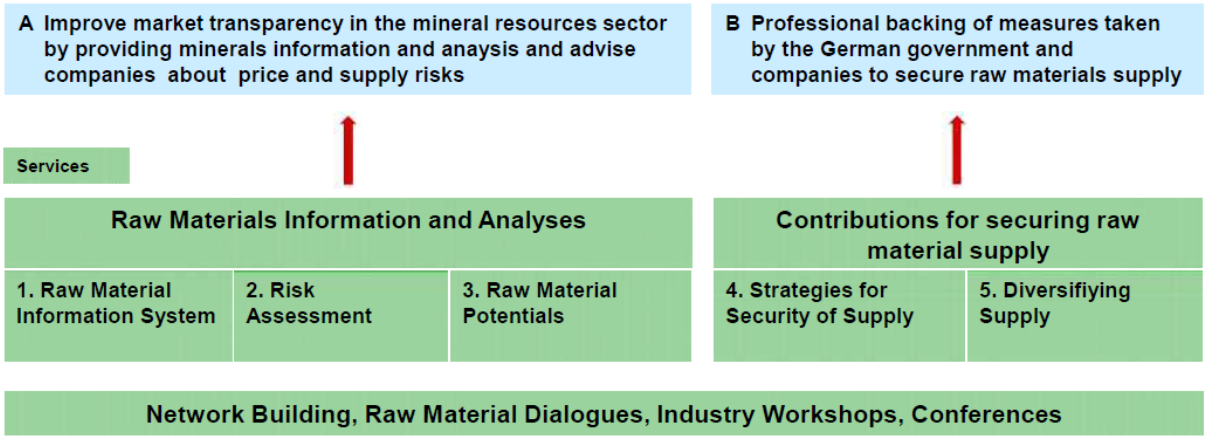
DERA objectives and services



Source: BGR[22]

The table below summarises some of main outputs of DERA Activities as presented in its 2010-2013 review report[23].

Output	Number
Total number of publications	31
Consulting services - Total	1365
- to SMEs	198
- Large firms	153
- Business associations	113
- Government and other stakeholders (NGOs)	233

Source : DERA

Features contributing to Improved Competitiveness

While it is still too early for a proper assessment of the performance of DERA and its impacts, there are already important positive indications of its role and contribution. DERA representatives refer to a continuously increasing interest of German firms from different sectors in getting more information on various types of raw materials (as indicated by the popularity of the workshops) and an increasing awareness of the risks associated with securing access to raw materials. In the past, most German firms did not give particular consideration to the management of the long-term supply of raw materials.

Industry representatives (BDI and VRB[24]) stated that DERA has assisted German firms through the provision of high quality information and serves as an early warning system on developments in relation to raw material commodities and possible access risks. It has also led an important number of firms towards the adoption of a much more proactive approach when it comes to securing access

[22] Presentation of DERA by BGR, Germany's Role in Mineral Resources Markets, PDAC, Toronto, 6th March 2013 http://kanada.ahk.de/fileadmin/ahk_kanada/03.Events/2012_Events/2012_Mining_Delegation/01.3_DERA_Steinbach_Toronto_130305.pdf

[23] http://www.deutsche-rohstoffagentur.de/DERA/DE/Downloads/Taetigkeitsbericht_2010-2013.pdf?__blob=publicationFile&v=1

[24] BDI – Federation of German industry; VRB - Association of German raw material extractive industries

to raw materials and development of short-term and longer-term raw material supply strategies. In an environment of increasing uncertainty concerning access to raw materials this can become an important competitive advantage. Looking forward, guidance in terms of identifying possible new markets for raw materials or possibly even own production of mineral resources is also expected to contribute in this direction.

Features relating to the wider adoption of the good practice

The analysis of DERA case also points to a few key elements of success. These include:

- the presence of a strong political commitment expressed also in the form of the national strategy for raw materials in which DERA is given an important role;
- the strong knowledge base that supports DERA activities based on the expertise and the resources available through the Federal Institute of Geosciences and Natural Resources (BGR);
- the intensive cooperation with industry that helps access the main target group (the firms) and provides the relevant feedback to ensure the relevance of its activities.

Moreover, most of the information services are provided for free (through 100% funding from the public sector) and this is important for the small and medium size firms that have limited resources and do not have organised units to analyse developments in the raw materials market. The long-term viability of such an approach depends on the continuous commitment and financial support of the government.

A few Member States (e.g. DK, FR, UK) have already identified this action as a good practice and have initiated the process of setting up similar services. However, the view of German industry representatives is that such a structure is not advisable for all member States. Not all countries and industries have the same industry size nor the same level of reliance on access to raw materials as the German industry. It may not be possible to sustain the operation of a similar agency if there is no substantial level of demand from industry for its services. The formation of an EU umbrella organisation networking existing structures or organisations with relevant expertise (e.g. geological surveys) could be a more cost-effective alternative.

Further Information

Further information can be obtained from the Federal Institute of Geosciences and Natural Resources and

http://www.deutsche-rohstoffagentur.de/DERA/DE/Home/dra_node.html

http://www.bgr.bund.de/DERA/DE/Rohstoffinformationen/rohstoffinformationen_node.html

Contact: DERA (+49 (0)30 36993 226)

dera@bgr.de

Good Practice Cases – Case 10

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CASE 10 - PROMINE PROJECT, FINLAND

Introduction

ProMine was the first major mineral resources project funded by the EU for 20 years. It was of a reasonable scale – with funding of over €18 million and over 400 participants from 30 partners in 11countries, with a variety of backgrounds.

Over the past four years, its various strands have made a series of significant contributions to the sector's knowledge base, not only addressing some of the headline requirements of industry in the form of extensive mapping and 3D and 4D modelling, but also delivering new products and processes and contributing to sustainability and competitiveness through technology for more efficient processing and reduced energy requirements. In addition, ProMine has created a strengthened community of researchers across Europe, linking research institutes, universities and industry. By itself this is an important new element in the knowledge base.

Theme

Strengthening the information framework and the knowledge base

In several of its activities, the ProMine project has also contributed to other theme areas including land use planning and governance.

Reasons for Highlighting this Project

Improving the availability of geological data and information and business intelligence for the raw materials industry has been a longstanding objective, as an important precondition for a reinvigorated and more sustainable sector. The ProMine project has made important contributions in this area, not least through its 3D and 4D work, but it has also extended the knowledge base in other ways. These include developing new products and processes and contributing to energy efficiency. Moreover, as a major and successful example of the benefits of collaborative research across many countries, the case represents a model for future developments of the knowledge base.

Description

The full title of the project was 'ProMine: Nano-particle products from new mineral resources in Europe'. It was funded by the seventh European RTD Framework Programme under theme 4 - Nanosciences, Nanotechnologies, Materials and New Production Technologies.

30 partners participated in the project from 11 EU countries. It was co-ordinated by the Geological Survey of Finland (GTK) and the partners included 6 mining companies, 5 geological surveys (including GTK), 6 universities and 11 industry and research partners and there was strong support from the European Technology Platform on Sustainable Mineral Resources (ETP-SMR).

Funding for the project was €18 million, of which the EU contributed €11 million.

Motivating ProMine was the objective of reducing Europe's dependence on imported metals and minerals and a series of insights, such as the perception that all solid and liquid materials at an exploitation or production site are potentially useful resources.

The aims of the project were:

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- To ensure that all potential resources (known and predicted) within the EU are fully documented and this information is available to the extractive industry
- To develop and to bring to market new, high value nano-products based on raw materials delivered by the extractive industry
- To develop better exploitation and production practices on sites, using all resources effectively and a more environmentally responsible management

The work was undertaken in 6 work packages plus a further project management package:

WP1: Geological mineral resource potential modelling across Europe
WP2: Modelling of mineralised belts – with 3D and 4D visualisation
WP3: New nano-products from mineral exploitation
WP4: Eco-efficient metal production methods and utilization of secondary materials
WP5: Assessment of sustainability and environmental impact
WP6: Knowledge management and Exploitation.

The specific objectives were stated as follows:

- Develop the 1st Pan-EU GIS data management and visualisation system for mineral resources and anthropogenic concentrations
- Develop the 1st ever 3D/4D mineral exploration geo-models in four major mineral belts in order to find unknown deep deposits
- Develop 5 new high-value mineral-based products
- Develop modern eco-efficient mineral processing and metal recovery methods, to extend the exploitable resources and develop treatment of new types of resources
- Promote more environmentally responsible management in mining
- Demonstrate the reliability of new technologies (including biotechnology) for an eco-efficient production of strategic metals

An important feature of the project was the degree of industry involvement, not from mining, but also from the abrasives, construction, paint, metal and paper industries.

The Results of the ProMine Project

The results have been rather impressive. They include:

- the first ever pan-European GIS-based database containing the known and predicted metalliferous and non-metalliferous resources of the continent. Together, these define the strategic resource base of the EU (including secondary resources);
- A major advance in geological subsurface models, applied in four major active mining belts in Europe: the *Fennoscandian Shield*, the *Forsudetic belt* in Poland- Germany, the *Iberian belt* in Portugal- Spain and the *Hellenic belt* of Northern Greece;
- estimates of the volumes in Europe of potentially strategic metals (e.g. cobalt, niobium, vanadium, antimony, platinum group elements and REE) and minerals that are currently not extracted;
- five new, high value mineral- based (nano) products;
- an enlargement of the number of profitable potential targets in Europe.

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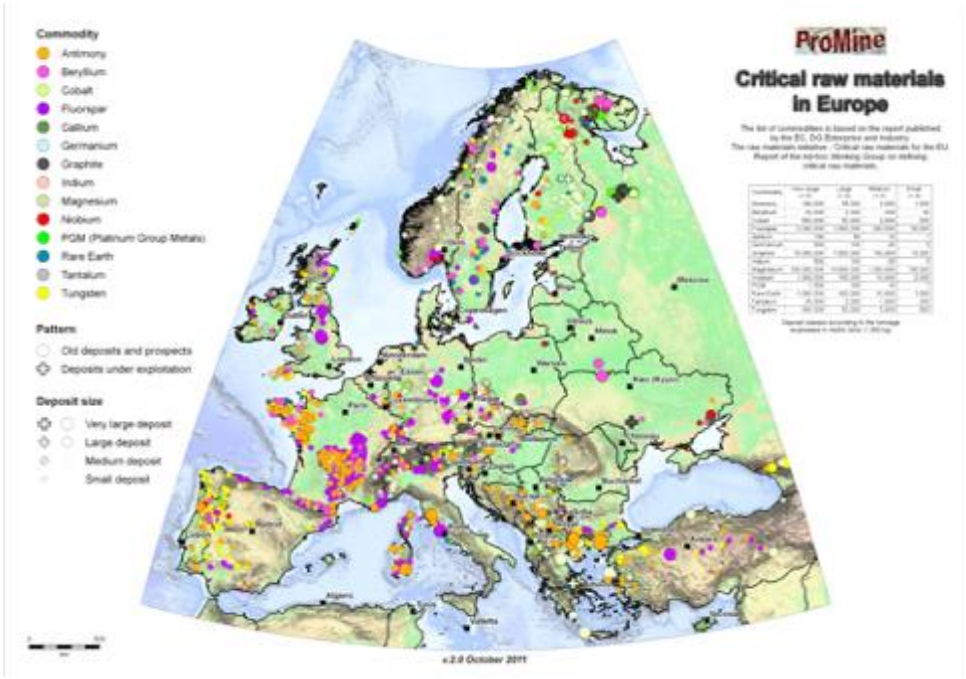
Figure 1 – GIS-based map of critical raw materials in Europe



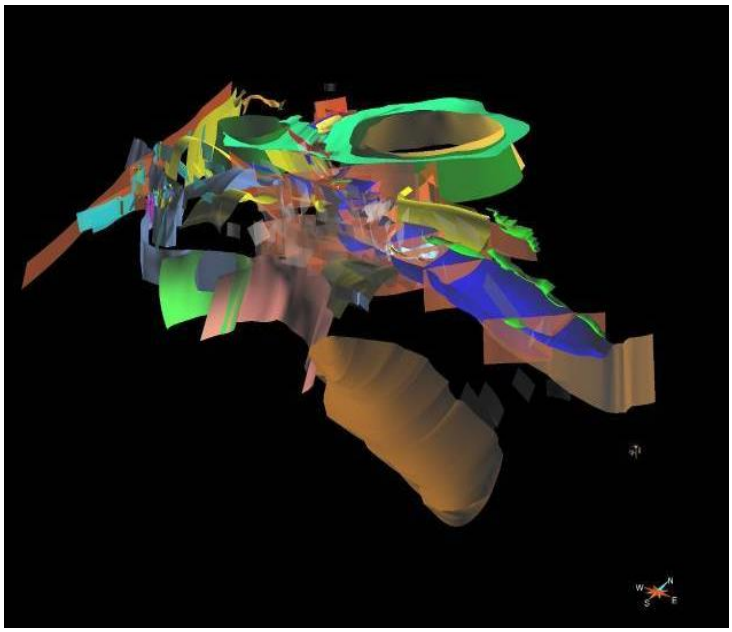
Source: PRO-Mine project

A further legacy of the project is a new, cross-platform information group between the European Technology Platform on Sustainable Mineral Resources (ETPSMR) and other platforms.

The pan-European GIS-based database has fully documented all potential mineral resources and developed a resource assessment and modelling system.

The 3D and 4D geo-models were developed for four areas. All the areas were selected on the basis of mineralogical, geochemical and geophysical ('multi –thematic') surveys from across the whole of the EU, so that a targeted approach, could be developed focusing on a regions with a high potential for mineral deposits (known as 'metallogenic provinces').

Figure 2 - 3D Visualisation



So, for example, the first built on the well-established work undertaken for the Fennoscandian ore deposit database (see Case 5), essentially providing visualisation of deposits in 3D, but also providing modelling for developments over time, in order to assist understanding of the formation of the geology and the processes leading to a concentration of metals and minerals.

The results of the 3D and 4D modelling have been made available on the ProMine portal and manuals have been developed to assist with the use of the modelling technology

outside of the project.

The databases of the European mineral resource potential constructed under WP 1 and the modelling of mineralised belts under WP 2 heave both aimed to provide the means for and efficient planning of resource utilisation.

The 5 high value mineral-based products are based on the processing of nano-scale raw materials generated by the extractive industry. This aspect of the project has therefore is a significant contribution to modern eco-efficient mineral processing and metal recovery methods that are contributing to greater sustainability through significantly more efficient extraction processes. It included the application of bio-hydrometallurgy for the production of strategic metals. The specific products developed were:

- Nano-silica for high performance concrete and other applications
- Nano-copper for ink jet paper
- Spherical rhenium and rhenium alloys for aerospace, turbine blades etc.
- Nano-iron oxyhydrosulfates for iron oxide (schwertmannite) paint pigments and for water purification
- Nano-silica for paper coating

Application of Products Developed under ProMine: Pigments from Schwertmannite
Vattenfall is the first industrial end-user to test the corrosion resistant coatings based on pigments from schwertmannite extracted from the Nochten lignite mine water in a process developed under Promine. The schwertmannite corrosion resistant coatings will be applied on the railway wagons that are used for the daily transport of coal to a power plant providing quality protection from the constant exposure to all weather conditions in a year-round operation.

The products developed under WP 3 are largely based on secondary resources or waste material and represent high added value, increasing the ability of companies to utilise complex and/or low-grade ores and waste materials. They thus contribute both to reducing waste volumes and increasing the efficiency and potential of the European mineral-based industry In addition, the new production methods developed under WP 4 allow the efficiency of the utilisation of secondary raw material to be improved in metal production and consequently contribute to the conservation of primary resources (ores).

There has also been a contribution to the knowledge base in a formal sense. There were 205 dissemination activities undertaken as part of the project (publications, media articles, posters etc.) and 80 meetings, workshops, exhibitions, training courses , but also:

- 16 exploitable foregrounds identified
- 14 patents and one process/method knowhow have been applied for or have been filed
- 1 spin-off company
- 17 peer reviewed publications

The economic impacts of the project have been estimated to be as follows:

- The in situ value of the undiscovered metals in Europe at 500-1000 m depth that the 4D modelling can reveal is in the order of €100 billion
- The total present market value for new mineral products to be developed is estimated to be € 50 billion, with an annual growth of 10-20%;

- The global market value of the new eco-efficient production methods, developed by the project, is estimated to exceed €500 million. Successful innovative processes development could lead to a > 5% increase production of Cu, Pb, Zn, Au, Ag, Ni in the EU.
- The reduction in energy consumption resulting from ProMine technologies used for the transformation of metallic or non-metallic mineral resources, can be expected to be between 10% and 50%, as compared with current technologies.
- Better use of mineral by-products resulting from the application of products developed by ProMine could reduce processing wastes by 10-20%.
- A one year life extension of active mines in the 4 mining belts, for which 3D and 4D modelling has been produced, would directly sustain up to 100000 people in employment, while indirectly the effect would be 4 times this amount.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

The extensive mapping across Europe undertaken under the ProMine project and particularly the three-dimensional predictive models for the mineral belts clearly show the potential of undiscovered resources in the various parts of Europe and are a major contribution to developing the supply of raw materials and improving the competitiveness of the sector. ProMine has provided a starting point for a future 3D Europe.

This project has therefore made important contributions to realising the improvement in the information and knowledge base that has been frequently called for at a policy level and by the industry. Furthermore this development is not only significant as a source of technical information for the industry, the 3D visualisation made possible also has important applications in communicating the situation to other stakeholders, not least as part of the land use planning process.

The other contributions of the ProMine project are also of major significance, both in the technical aspects of management of waste and the extraction of rare materials from or low-grade ores and in the promotion of better environmental management in mining.

Features relating to the wider Adoption of the good practice

The data management results of the ProMine project are available and in fact the project leaders are encouraging their take-up, including for applications in land use planning. Explanatory material has been developed to this end.

Interest in the technology and techniques developed in the other work packages is also being encouraged.

Further Information

Website of the project: http://promine.gtk.fi/

Contact details:

Geological Survey of Finland (GTK)

Juha Kaija: juha.kaija@gtk.fi

Good Practice Cases – Case 11

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CASE 11 – COMES – COMMITTEE FOR STRATEGIC METALS, FRANCE

Introduction

On January 24th, 2011, a Decree of the Prime Minister of France created the Committee for Strategic Metals (COMES). The aim of COMES is to assist the Minister for Industry in preparing and implementing a national strategic policy for metals, in order to strengthen the security of the supply of raw materials for the French economy and its sustainable competitiveness.

The Committee is chaired by the Minister responsible for raw materials (i.e. the Minister for Industry).

This formal forum engages the key stakeholders concerned by mineral raw materials in an active dialogue, to identify fully the issues all along supply chains that are critical to the French economy and to develop the strategies needed to address these issues.

Theme

Governance

Elements of COMES are also making important contributions to improving policy and the legislative framework and to developing the information and knowledge base.

Reasons for Highlighting this Project

In France, as in other European countries, there has been a debate, following the EU's Raw Materials Initiative, on the dependence of industry upon imported raw materials for which there is growing international competition and particularly on the need for high tech industry to have access to critical and often rare materials. Extending the awareness of the issues among all the public and private actors of the related supply chains and considering the implications in detail has been considered to be of major importance and also requiring an on-going engagement with industry - both suppliers of raw materials and users.

This case therefore describes an interesting response to a significant issue in the governance of the raw materials sector – the involvement of users in the development of raw materials strategy and policy.

Description

The members of COMES are:

- all the government departments concerned by mineral raw materials issues (Defence, Ecology and Sustainable Development, Research, Trade, Treasury in addition to Industry),
- industry associations from a variety of sectors (Metals and Minerals; Chemistry; Aerospace; Automotive; Recycling; Steel; Electronics; Naval Construction; Mechanical construction).

The daily operations of COMES are managed by its Secretary General, a member of the High Council for Economy, Industry, Energy and Technology (CGEIET). CGEIET is an advisory board under the authority and chairmanship of the Minister of Economy, and provides Ministers with advice on high level policy matters; it also performs audits, assessments, inspections and enquiries on behalf of the Ministers in charge of economic affairs, industry and electronic communications and other Ministers. The Secretary General reports to the COMES Chairperson, the Minister for Industry.

The Council comprises 5 thematic working groups:

1. Identification and assessment of the requirements of the French economy, of related actors and issues;
2. Assessment and sustainable development of the French mineral resources potential;
3. Resource efficiency and recycling
4. International co-operation
5. Substitutions

All the stakeholders previously mentioned participate in the activities of COMES, which consequently provides a unique space for dialogue and collective work.

Activities

The starting point for the Committee's work is the appreciation that France has a major dependence on raw materials and especially critical metals in strategically important products, together with the realisation that there are few substitutes for these materials, their sources are restricted and subject to increasing competition, particularly from emerging economies, and that the recycling rate is generally insufficient.

The working groups have prompted actions in a series of areas :

- Undertaking economic studies, providing information and increasing awareness of raw material industries and their global context;
- The development of tools to support strategic decisions relating to areas at risk;
- Promoting access to primary resources to secure supply;
- Encouraging the training of new personnel, with the aim of creating new industrial activity;
- Supporting research and innovation and helping industry to develop its activities in France and abroad;
- Promoting the development of a circular economy, through the development of eco-efficient resource use, recycling and the search for substitutions of the most critical minerals and metals;
- Helping to increase international co-operation.

The COMES Secretary General is also a Sherpa group member of The European Innovation Partnership on Raw Materials.

The activities of COMEs have resulted in a number of outputs that are publicly available (see references at the end of this section):

- The Ministry for Industry commissioned BioIS (Now Deloitte BioIS) to develop a risk evaluation tool to allow enterprises to independently evaluate the risks they may face in relation to the mix of metals they use in their production processes. This tool is available, (in French) at:

  http://www.dgcis.gouv.fr/files/files/directions_services/secteurs-professionnels/industrie/chimie/metaux-strategiques/DGCIS_Outil_vulnerabilite_BIOIS_v1-0.xls

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- The Interministerial Group for the Prospects and Assessment of Technological Changes (PIPAME) has commissioned SOFRED, a French consultancy to prepare a report on the issues relating to strategic metals in the aeronautic and automotive industries[25];
- ADEME has commissioned BioIS to prepare a detailed analysis of the recycling status and potential of rare metals[26].
- BRGM has published detailed analysis, so far, for 13 metals (Be, C (natural graphite), Ga, Ge, In, Li, Mo, Nb, Re, Te, Sb, Se, W). These provide a detailed overview of:
    - Demand (uses, technological trends, perspectives for the development of substitutes; supply chains),
    - Supply (primary and secondary – from recycling) - resources
    - Supply chains, with a focus on France;
    - Criticality issues and an assessment of the criticality at the time of publication.
- BRGM publishes "ECOMINE" 10 times a year, on behalf of the French authorities (Ministry for Industry; Ministry for Ecology, Sustainable Development and Energy). ECOMINE provides an overview of the global mines and metals industry, with information on trends at industry and national level plus a review of metals and minerals and their prices. ECOMINE and the detailed analyses are available via the French public web portal on mineral resources: www.mineralinfo.fr.

In addition, COMES organises conferences, inviting internationally renowned experts to present their experience on specific issues and specialised workshops, focusing on a single raw material where industry, authorities and research institutes discuss the issues and outline actions to be implemented.

The activities of COMES go well beyond the contributions of its formal membership. They foster a more general engagement in order to address the complex issues relating to raw materials supplies and sustainable development, well in line with the EU Raw Materials Initiative.

One of the results of these actions has been the creation of an Observatory on primary (non-energy) mineral materials. The Observatory consists of a network of partners, whose outputs are presented on an Internet site (www.mineralinfo.fr). This facilitates the systematic collection of national and international data, presentation in a standardised form and the dissemination of reliable public information on raw materials, allowing industry, consumers and policy makers to assess the challenges and risks. Initially the Observatory is focusing on the following areas:

- Metals
- Potential primary resources
- Secondary (recycled) resources
- Production and demand
- Imports & exports

[25] http://www.dgcis.gouv.fr/files/files/directions_services/etudes-et-statistiques/prospective/automobile/2013-04-metaux-strategiques-diapo.pdf

[26] http://www2.ademe.fr/servlet/getDoc?cid=96&m=3&id=73279&p1=00&p2=05&ref=17597

- Industrial processes for the treatment and transformation of recycled materials
- The life cycles of materials

COMES has also had an influence on broader policy developments. This has included a re-orientation of publicly-funded research programmes to help them better support strategic developments and also the proposals for a reform of the Mining Code that a separate group, chaired by Thierry Tuot has drawn up and that is now under consideration by the government.

Assessing the Results of the Activities

Assessing the longer-term impacts of COMES in terms of changes in perspective and adjustments in the strategy and actions of industry is always going to be difficult, but there are indications of the response to the initiative:

- The risk evaluation tool has been downloaded about 700 times since its public launch, in October 2012. After a phase of rather intense downloading (knowing the very specialised nature of this tool) from October 2012 to May 2013, things have calmed down. However, in the recent months the download rate still oscillates from 20 to 35 per month. Specific feedback has been received from some automotive and aeronautics industrialists who wish to see the tool further improved, with a possibly broader coverage of metals and minerals and some methodological developments.
- COMES conferences have an average attendance from 60 to 100 people. Attendance is by invitation only. Targets are participants from industry – from enterprises of all sizes – who are directly exposed to, or concerned by, issues relating to raw materials. Invitees include purchasing managers or research/ Innovation managers.
- ECOMINE readership is quite broad, given the very technical and specialised, nature of this online journal. The average download rate per issue observed in 2013 is 180, with a minimum of 125 and a maximum of 254.
- MINERALINFO Portal: After over 10 years in existence, the MineralInfo portal began a major overhaul in 2012, both in terms of its content and management system. The full new system will not be functional before March 2014. Therefore, although MinerlInfo.fr in the past had up to 800 visitors per month, the new, still incomplete portal, currently has about 300 single visits per month and the trend being growing. This is considered to be satisfactory, considering the comparatively limited community of French language end-users.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

COMES has the merit of being an initiative that has brought together an impressive group of stakeholders, who are simultaneously addressing the major strategic questions posed by the growing global competition for raw materials while, at the same time, developing highly practical operational instruments to assist industry and others to respond to these challenges.

Features relating to the Wider Adoption of the Good Practice

A relatively high profile initiative, engaging key players, but also allowing scope for all part of the sector to become engaged in actions to develop strategy and make appropriate responses to the significant challenges that are posed.

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Further Information

Websites:

http://www.dgcis.gouv.fr/files/files/directions_services/secteurs-professionnels/industrie/chimie/metaux-strategiques/comes.pdf

http://www.mineralinfo.fr/

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CASE 12 –RESOURCE ALLIANCE, GERMANY

Introduction The Resource Alliance (RA) was founded in spring 2012 following an initiative of the Federation of German Industry in response to the increasing limitations and risks regarding the supply of raw materials critical for industry. The objective of the Resource Alliance is to improve and sustainably secure its shareholders' and associated partners' long-term supply of selected raw materials. To achieve this objective, the Resource Alliance clusters the raw material interests of the participating companies and undertakes mineral specific analyses (market development and supply chain analyses, project evaluation and assessment of financing instruments) to develop demand-specific supply options. Thereby, it facilitates collaborations with raw material project companies and minimizes risks in their realisation. In the course of this work, the Resource Alliance has a close dialogue with the government and other public institutions.

Thematic area

Governance

Reasons for Highlighting this Project

This case refers to a major example of an industry driven initiative, and as such illustrates a significant aspect of the theme of governance, for which the mobilisation of a variety of stakeholders in addressing strategic issues is an important consideration. It is true that the main activity of the Alliance, up until now has been in addressing the global supply of key raw materials - an issue which falls more under Pillar I of the Raw Materials Initiative, than Pillar II which is the main concern of the current exercise. However, the mechanisms used are certainly of interest beyond their initial area of application.

Description

Background and objectives

The Resource Alliance is an initiative of the Federation of German Industry (BDI) founded in spring 2012. It is a direct result of a project initiated by the BDI, and supported by a number of large German companies, which analysed the development of the commodity markets in order to reduce the level of dependence for critical raw materials on specific markets and to secure the long-term supply of raw materials. A proposal for a raw material alliance of German industries was developed and its implementation was initiated in January 2012.

International commodity markets have been undergoing a fundamental change since the beginning of the millennium: The rapidly increasing demand for raw materials, which is likely to continue to grow, has been met by an increase in government interventions around the world, including export restrictions and competition-distorting subsidies. As a result, international markets can no longer guarantee the availability of relevant raw materials in the required quantities. **The objective of the Resource Alliance is to improve and sustainably secure its shareholders' and partners' supply of selected raw materials.** To achieve this objective, the Resource Alliance clusters the raw material interests of the participating companies and undertakes mineral specific analyses (market and supply chain analyses, project evaluation, assessment of financing instruments etc.) to develop demand-specific supply options. Thereby, it facilitates collaborations with raw material project companies and minimizes risks affecting their realisation. In the course of this work the Resource Alliance has a close dialogue with the government and other public institutions.

This means the Resource Alliance acts primarily as a facilitator to promote a long-term supply option. In this connection, it also provides a communication platform to enable an exchange of information and to support the mutual tracking of projects, while ensuring compliance with antitrust laws.

Companies participating in the Resource Alliance enjoy various benefits including:

- joint pursuit of interests in relation to supply projects, which are risky by nature; this minimises the risk for each individual firm;
- grouping of interests, which improves the purchasers' negotiating position in the conclusion of long-term supply contracts;
- improved access to information to support possible action.

The activities of the Resource Alliance are organized in different raw material clusters. The different raw material clusters reflect the focus of the Resource Alliance on specific raw materials that are considered to be strategic by its shareholders. Currently, there are five raw material clusters: Coal; Graphite; Non-ferrous Metals; Rare Earth Elements; Specialty Metals. Beside possibilities for sourcing raw materials from extraction projects, possibilities for building up closed loop recycling models are also analysed within the clusters.

Services provided

The Resource Alliance's services include various products that aim to improve planning reliability and secure access to critical raw materials for the members. The range of activities includes:

- A communication platform – a moderated communication and information platform for shareholders and partners, focusing on critical mineral raw materials while ensuring compliance with antitrust laws;
- Strategies for securing the supply of raw materials – Development and implementing of strategies for securing the supply of critical mineral raw materials, including identification, evaluation and engagement in potentially interesting raw material supply projects;
- Lobbying – Conduct of lobbying work on topics relevant to the Resource Alliance with national and international institutions;
- Mining know-how and market expertise – Analysis of attractive raw material projects and research on relevant trends in selected raw materials (market analysis, supply and demand analysis);
- Project financing and insurance – structures and mediates equity capital and debt financing for appropriate mining projects, develops financing plans and identifies project-related insurance policies;
- Project management – acts as a communication interface between project developers/operators and shareholders/partners of the Resource Alliance.

The key service of the Resource Alliance is the support provided in the development of co-operation with raw material project companies. This can be achieved either through equity investment in the project companies combined with long-term offtake contracts or through long-term supply contracts only. For this co-operation, special purpose legal entities may be created on behalf of the Resource Alliance in which the relevant shareholders and partners of the Resource Alliance hold stakes. Individual companies often suffer from an unfavourable negotiating position. By pooling their interests and knowledge of the markets, the Resource Alliance is able to improve this position. Moreover, the broad range of the raw materials concerned increases its attractiveness as a partner for mining companies. The Resource Alliance also takes care of finding and structuring German federal loan and guarantee instruments, improving financing for its partners. It also has an active

role in the identification and securing of co-investors. This can be either in the form of financial support from individual investors or financial participation from specialised commodity funds.

Sustainability

The principles of sustainability inform the approach of the Resource Alliance in terms of participation in the selected projects and the management of these projects. In addition to the risk analysis and the responsible monitoring of the projects, it is required that projects support the aftercare of the sites. Ecological aspects (environmental footprint and environmental protection) are carefully assessed not only when projects are selected, but also in the process of project guidance and prior to the completion of a project. In addition, good working conditions, dialogue with local communities and securing economic benefits for the local economy are also goals that the Resource Alliance aspires to achieve in all projects.

Management structure of the Alliance

The Resource Alliance is organised as a limited liability company (GmbH). Currently, the shareholders[27] are 12 German companies with a significant industrial value creation capacity in Germany that use raw materials for their own production purposes and other processes. A second group of associated partners[28] includes firms that may require raw materials for their own use or that have key competencies in extracting or processing raw materials.

A small management team is responsible for delivering the strategy. The CEO consults with an Advisory Board on questions concerning corporate strategy. The members of the Advisory Board are appointed by the shareholders.

Features contributing to improved competitiveness

As no project has been completed yet, it is too early to assess the overall impacts and the contributions to competitiveness of the Resource Alliance. However, several concrete project proposals are currently in the appraisal phase.

On the basis of its proposed working plan and services structure, the key contribution the Resource Alliance provides to industrial enterprises will be opportunities to prevent long-term bottlenecks and secure the supply of raw materials. By mediating suitable raw material projects, the Resource Alliance creates supply options for specific raw materials for its shareholders and partners.

Another important contribution to improved competiveness lies in the detailed information on the development of the relevant raw materials markets and on the supply chains which the Resource Alliance provides to its shareholders and partners, and in the exchange of information between the companies which Resource Alliance makes possible. This increases significantly the transparency for the participating companies and enables them to take appropriate countermeasures on their own.

The Alliance is open to extending its partnership base to other European companies with different roles along the raw materials supply chain.

[27] Aurubis AG, BASF, Bayer AG, BMW AG, Bosch, Evonik Industries AG, Georgsmarienhütte Holding GmbH, Rockwood Lithium GmbH, SHS - Stahl-Holding-Saar GmbH & Co. KGaA, ThyssenKrupp AG, Volkswagen AG, Wacker Chemie AG

[28] Brose Gruppe, Daimler AG, Südzucker AG

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Features relating to the Wider Adoption of the Good Practice

The Raw Materials Alliance is a private sector initiative with no public financial support even though it receives moral and political support from the German government. One main strength is the participation of some of the most important German companies along the raw materials supply chain that have joined forces. The Resource Alliance thus represents a broad and significant market demand which strengthens its attractiveness as a co-operation partner as well as its negotiating power.

Evidently, the capacity and the need for the replication of such an initiative across Member States with weaker industrial bases are rather questionable. In such cases, the public sector may be able to provide political discussion platforms. One example is the "Austrian Raw Material Alliance" founded in 2012 by the Austrian Federal Ministry of Economy, Family and Youth which acts as a discussion platform for stakeholders interested in the improvement of raw material supply. However, so far the focus of the Austrian initiative has been on identifying strategies to increase the recovery of critical raw materials (critical for the Austrian economy) out of waste and not on the larger scope of opportunities for supply with primary and secondary raw materials that are in the focus of the Resource Alliance's attention.

Further Information

Resource Alliance website: http://rohstoffallianz.com/en

Email: info@rohstoffallianz.com

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CASE 13 - GUIDANCE DOCUMENT FOR LOCAL STAKEHOLDERS RELATIONSHIP MANAGEMENT, SPAIN

Introduction

The guidance document is a comprehensive guide developed by the Spanish Aggregates Association (ANEFA) directed to firms in the aggregates sector aiming to assist them in forming a proactive policy for the prevention and/or management of potential Not-In My Back Yard conflicts with local communities. It is a practical guide on how to develop and manage the relationships with local stakeholders, to better communicate with local communities, to adapt messages to the specific audiences, to interact with media in order to prevent and resolve conflicts and crisis events.

The document, which was developed with the participation of multiple experts, has already been disseminated to most firms in the sector. It is considered as particularly relevant and helpful by mining experts and firms and appears to have already brought positive results in terms of the adoption of more proactive communication strategies, more effective interaction of firms with local stakeholders, reduction of conflicts and the time required for permits, thus contributing to less costlier and greater access to raw materials.

Theme

Governance

Reasons for highlighting this project

This initiative is noteworthy in that it provides practical, effective answers to one of the key issues faced by the mining industry, namely the resistance of local communities and environmental groups to the extension of quarrying and other mining activities. It also provides a framework for more productive interaction and information exchange between firms and stakeholders thus strengthening the social corporate responsibility practices.

The initiative is also quite innovative. According to ANEFA, the only similar initiative is the Community Relations Handbook for the Aggregates Industry of the National Stone, Sand & Gravel Association (NSSGA) in the U.S.A[29]. However, that publication has a more narrow scope than that of the guide developed by ANEFA.

Finally, a key point is that the initiative can be easily replicated across different countries with limited costs.

Description

Context and objectives of the initiative

The aggregates sector – as well as most of the mining sector – is affected by a continuously increasing number of Not-in-my-back-yard (NIMBY) conflicts that represent a major obstacle to expanding activity in existing quarries or opening new ones and often lead to long delays in the permitting process. Thus, it represents a significant obstacle to gaining access to new resources. In many cases, the reluctance of local communities and other stakeholders stem from misconceptions

[29] NSGGA (n.a.), Community Relations Handbook for the Aggregates Industry https://www.nssga.org/commerce/Community_Relations_Handbook_regform.cfm

as to the type of activities that take place in quarries and a lack of knowledge of the project, the methods and the technologies applied, the actual impacts of the activities and the possible benefits.

At the same time, most of the firms in the sector – largely SMEs – tend to adopt a passive approach when it comes to communicating with local communities and key stakeholders and are mainly only reacting when specific situations arise – such as stakeholders resisting the extension of a quarry or the creation of a new one in the local area. Most lack the necessary expertise and capacity for effective communication with the respective local communities and do not adopt a proactive approach that can help prevent or resolve NIMBY conflicts. When it comes to the preparation of permit applications, firms often focus on the technical aspects and ignore the important issue of communication and interaction with local communities, necessary to promote the project and to avoid conflicts that often lead to important delays.

The objective of the initiative of the Spanish Aggregates Association (ANEFA) has been to develop a guide to assist firms in the sector to develop a proactive policy focused on the prevention and/or management of potential NIMBY conflicts. It provides practical advice on how to develop and manage the relationships with local stakeholders, to better communicate with local communities, to adapt messages to the specific audiences and to interact with media, all with a view of preventing and resolving conflicts and averting crisis events.

The prime target audience of the initiative is firms in the aggregates sector, including company owners but also technical managers, communication advisers (in the case of SMEs they do not exist) and individual employees. The latter, usually members of the local communities themselves, can be an important part of the overall communication strategy.

Beyond the aggregates sector, the guide is also addressed to clients, subcontractors and distributors of the aggregate sector and ultimately, stakeholders such as the local community, educational institutions, authorities, environmental groups. The guide is intended to inform them of the activities actually taking place in modern quarries and the approaches that be followed to minimise environmental impact and health and safety risks.

The guidance document was developed by the Image and Communication Committee of the Spanish National Aggregates Association (ANEFA). The objective was to create an easy to follow guidance document with a clear structure that provide answers to key aspects of the communication needs of an extraction company. A group of experts from the industry drafted a first document that was then widely circulated within the sector for feedback but also to collect examples and real-life experiences to further enhance its utility.

The project lasted around 2 years (2008-2010) with a total cost (drafting the document, approval of the final version, design, publication and dissemination) of around €30.000. The costs were partly covered by the European Social Fund (programme Empleaverde[30] run by the Spanish Biodiversity Foundation) and ANEFA. Seven firms from the sector also participated with a small financial contribution.

The outcome was a guidance document of 140 pages with many pictures and illustrations and practical recommendations. It uses experience of more than 20 years on preventing and solving conflicts related to access to resources, citing a series of examples. The structure of the document reflects the different situations that can arise in the life cycle of an extraction site. It includes the definition of the project, the application for a permit, the provision of information to the local stakeholders and the adaptation of messages to each different type of stakeholders. It also covers

[30] http://www.fundacion-biodiversidad.es/inicio/emplea-verde

the role of proactive dialogue and communication as a tool to prevent conflicts during the life of the site, the management and solution of complains, the involvement of the companies in the local development or the organisation of extractive sites open days. More specifically, the guide covers the following key topics:

- Planning the relationship with local stakeholders: Description and comparison of the reactive and the proactive models, definition of goals, identification of stakeholders groups, ways to build support for a project, actions to have a positive image (analysis of the initial situation, improvement action plan, workers participation, local involvement, contribution to the community, corporate social responsibility).
- Communicating actions of the company: Basic rules of the communication, credibility development, building permanent communication channels, complaints management, organisation of open days.
- Adapting messages to different stakeholders (Stakeholder identification, communication strategy, preparation of the messages adapted to the audience, selection of the communication tools and media, evaluation of effectiveness).
- Conflict prevention and solution: use of consultation as preventive tool, learning to listen, dialogue oriented policies, third part mediation, role of meetings and communication fora;
- Interaction with the media: preparation, elaboration of precise messages, coordination of the communication, avoiding controversy.
- Organisation of site open days: preparatory actions, welcoming of visitors, safety in the visit, explaining activity.
- 10 basic recommendations to improve stakeholder relationships.

Main outputs and results

So far, a total of 3.500 copies of the guide have been distributed to firms through the regional aggregates associations but the guide was also provided to other key stakeholders (trade unions, local, regional and national authorities, Universities).

The association has established an evaluation and monitoring framework to assess the effectiveness of the initiative. The Communication Committee and the Board of the Spanish National Aggregates Association (ANEFA) is expected to review the effectiveness of this initiative on an annual basis using a number of indicators. Indicators such as number of open days organised and number of visitors, number of firms having complaints management system, number of communication initiatives are monitored. The data for the period 2007-2013 show a continuing increase in the number of firms making use of the Guidance document but also of all types of communication activities promoted by the guidance document.

The organisation of open days is considered by ANEFA to be a particularly important communication tool promoted by the guidance. In 2013 168 open days were organised with the participation of more than 14.000 people – more than three times greater than in 2009. They visited quarries and were informed about the type of activities, the technologies used but also the mitigation measures taken to protect the environment and the rehabilitation activities. Furthermore, there has been a sharp increase in the number of positive reports in the public media but also in the number of firms that have adopted proactive communication approaches making use of public media and developing complaint management systems.

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Table 1 - Main outputs and results linked to the use of the guidance document

	2007	2008	2009	2010	2011	2012	2013
Number of firms reporting the use of ANEFA's Guidance document for local stakeholders relationship management	--	--	--	150	370	425	514
Number of reported open days	15	51	55	98	114	143	168
Number of on site visitors	489	3.825	4.510	7.252	9.006	11.583	14.280
Number of schools involved in open days	18	61	70	127	171	222	294
Number of positive published news / reports in public media	193	205	465	380	822	1.374	1.279
Number of firms with sustainable development information in websites and/or public sustainability reports	ND	ND	ND	33	114	189	218
Number of firms reporting social media communication (e.g. Facebook, twitter)	ND	ND	ND	12	24	37	94
Number of firms reporting complaints management systems	ND	9	11	24	127	145	196

After a few years, a firm survey will help assess in more detail the level of use and the added value of the guide.

ANEFA has also received input that indicates a high level of acceptance and use of the guide. 98% of a sample of 523 experts within the extractive industry estimated in 2012 that this initiative is a great step to help the industry to reach the goal of improving access to resources. Anecdotal evidence provided by individual firms suggests that it is helpful for managing crisis events such as accidents or demonstrations by local communities.

Furthermore, while it is still rather early, anecdotal evidence available to ANEFA suggests that there has been a reduction in the number of conflicts and of the time for approving applications for new quarrying activity, a key priority for the firms in the sector.

Figure 1 – Open day visits

Features contributing to Improved Competitiveness

The development of the guide is expected to contribute to the sustainable access to raw materials and the development of the mining sector integrating a number of principles and objectives of the Raw Materials Initiative: The initiative :

- Increases the knowledge of the general public about the extractive industry though real life experience (i.e. open days) and greater interaction with local stakeholders. Thus, it raises the level of awareness and eventually creates a greater level of public acceptance and trust of the quarrying – and more generally the raw materials sector.
- Contributes to a reduction in the number of conflicts related to the approval of permits for new quarrying activities and to reducing the length of the procedures. Thus, it is reduces the costs of operation for the firms while also contributing to a longer term access to necessary resources.
- Helps firms to improve their communication policies, to adopt more proactive approaches, to develop the necessary skills for managing crisis events of various types and to strengthen their corporate social responsibility practices.

The initiative has been highlighted in the recently approved Strategic Plan 2012 – 2025 for the Aggregates Sector in Spain. It is considered as a contributing element to the sustainability of this industry.

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Features relating to the Wider Adoption of the Good Practice

The initiative of ANEFA is easily transferable across the EU Member States. It had a rather small budget and it primarily relies on the use of existing practical expertise. There are no apparent context-specific limitations for the use of the guide.

There is already evidence of interest in its uptake at the national and the European level. The Spanish Non Energy Extractive Industries Confederation has already asked to make use of the guide and promote it to its members. Furthermore, the initiative was presented in the Public Relation and Communication Task Force of the European Aggregates Association (UEPG) where there was great interest in the adoption of similar initiatives in other countries. The same have also happened with the South America Aggregates Federation. In all cases, ANEFA is offering the use of the guide, the pictures and the rights of translation for free, providing a strong starting basis for replication, although the guide may have to be adapted to the specific characteristics legal framework and cultural aspects) of each country or region.

Further Information

Guidance document: "GUÍA PARA LAS RELACIONES CON EL ENTORNO SOCIAL" – ANEFA 2010
ANEFA : César Luaces Frades - cluacesfrades@aridos.org
www.aridos.org

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CASE 14 - MANUAL FOR CONSULTATION AND COMMUNICATION BETWEEN THE REINDEER HUSBANDRY AND MINING INDUSTRIES DURING THE PERMITTING PROCESS FOR EXPLORATION AND EXPLOITATION, SWEDEN

Introduction

Sweden is one of Europe's leading mining nations. The mining sector is export orientated and international demand presents numerous opportunities to facilitate its ongoing expansion. To support the sector, the Swedish Mineral's Strategy has been introduced to address a number of barriers and challenges that present limits to the growth of the sector.

A key issue identified in the Strategy relates to strengthening the governance of developments relating to raw materials. Given the sensitivity of planning new mining activities, the Strategy emphasises that dialogue and cooperation with key local stakeholders is central to promoting growth.

The majority of future mining activities are planned to take place in northern Sweden. This region is characterised by areas of high natural and cultural value. It also provides a working environment for reindeer husbandry overseen by the Sami people. For the mining industry to move forward on a sustainable basis, consensus with the Sami people is necessary.

This case looks at efforts that have been made by authorities and industry to engage local communities in the planning process. In this context, the Norrbotten County Administrative Board has been given the task to develop a manual for consultation and communication between the reindeer husbandry and mining industries during the permitting process for exploration and exploitation.

Theme

This case will look at measure number three of the Swedish Minerals Strategy. This measure has provided funding and support to the Norrbotten County Administrative Board to develop a manual for consultation and communication between the reindeer husbandry and the mining industry. As a result, it provides a good example of improving the **governance of developments relating to raw materials,** though there are also aspects that relate to land use planning and the permitting process**.**

Reasons for Highlighting this Project

Local communities are at the heart of all major planning activities. Engaging with key local actors at an early stage and in a structured and transparent way enables the building of trust and design of planning proposals that meet the needs of all parties affected. Planning proposals that have already been discussed and developed in tandem with local communities prior to their submission are more likely to receive approval by authorities and the resulting permits are less likely to be appealed. The mining industry would clearly benefit from improving governance arrangements with regional and local interest groups.

Description

The Swedish Minerals Strategy emphasises that good dialogue and clear distribution of responsibility among stakeholders provide an important basis for stimulating national competitiveness, more jobs and growth in the mining and minerals industry and in addition the wider business sector in areas affected by large-scale initiatives. Disseminating timely and clear information when planning and

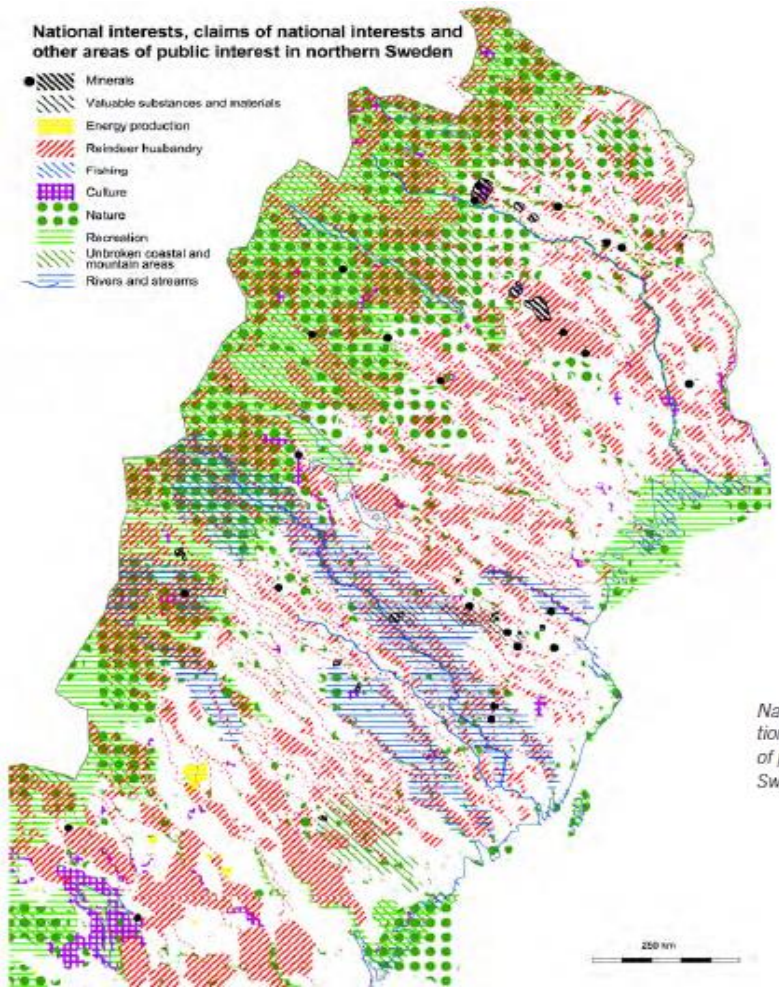
establishing new mines and quarries also creates common objectives and enables work to be speedily implemented in a coherent fashion.

The planning phase places considerable demands on the municipality in which the mine is being located. Actors with a variety of remits and responsibilities take part in the processes and there must be good communication and dialogue between them to reduce conflict and identify areas of common interest. To help municipalities effectively and efficiently manage this responsibility, efforts have been made under the Swedish Minerals Strategy to support structured communication and engagement between industry and local interest groups at appropriate milestones of the planning process.

The establishment of the majority of new mines are planned for development in northern Sweden where there are environments of high natural and cultural value, a range of active outdoor pursuits and where the Sami people have a long tradition of reindeer husbandry. It is important that mining expansion takes place in cooperation with and respect for other industries and interest groups.

The map below, developed by the Geological Survey of Sweden, indicates how different regions of northern Sweden are dominated by different regions that have been declared as Regions of National Interestunder the Environmental Code. The western part of northern Sweden tends to be dominated by nature and recreational interest groups whereas the central and eastern part of northern Sweden is generally characterised by reindeer husbandry interests. For several areas different National Interests overlap.The map provides a clear indication of the range of issues that the mining industry must deal with during the planning phase.

Figure 1: Areas of National Interest under the Environmental Code



National interests, claims of national interests and other areas of public interest in northern Sweden. Source: SGU.

Source: Geological survey of Sweden

Where mines are planned in Sami reindeer husbandry areas, careful consideration is required by the mining industry. Both the Sami right to land and water and the right to reindeer husbandry are founded on traditional/ancient customs. Reindeer husbandry is protected in the Swedish constitution and regulated by the Reindeer Husbandry Act (1971:437). Reindeer husbandry is central to Sami culture, which is also protected in Sweden's Instrument of Government. The Swedish Government has introduced polices to promote a vibrant Sami culture, based on ecologically sustainable reindeer husbandry and other Sami industries. The Sami are also recognised as Sweden's only indigenous people. The Sami parliament is responsible for monitoring and supplying information on areas of national interest for reindeer husbandry. Under the mining permitting process, the legislation provides a strong legal standing to the Sami people and comments received suggest that they have a legal standing similar to land owners.

Given the need for robust communication and dialogue with the Sami people as part of the planning process, under the Swedish Minerals Strategy, the Norrbotten County Administrative Board has been given the task of overseeing a project to develop a manual for consultation and communication between the reindeer husbandry and mining industry during the permitting process for exploration and exploitation. The project has received €70,000 and will be completed by the end of 2014. The National Mineral Forum which has been set-up to oversee the National Minerals Strategy will examine the manual in March 2015.

In cooperation with an appointed leader at Norrbotten County Administrative Board, both the industries' sector organisations, the Sami Parliament and the Mining Inspectorate of Sweden, are participating in this project. The manual will set out a roadmap for engagement between industry partners and indicate when communication and dialogue should take place. This will help to appropriately structure the process and make clear the type of input and information that are required at each stage. A clear distinction is made between exploration and exploitation activities, appropriately informing interest groups of the difference between the two. Given that is has been identified that both parties lack knowledge on the legislative framework in certain areas, the legal standing and rights of both groups are highlighted in the manual. For example, the Sami people are informed of their right to examine licenses, to check that certain conditions are met and to request financial compensation for the physical restoration of land. The mining industry is generally informed of the way the Sami people use certain areas for reindeer husbandry including migrating from one area to another between summer and winter.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

The main objective of the manual is to speed up the planning process for exploration and exploitation and to inform both parties of the input and information requirements at appropriate intervals. It is anticipated that the manual will help facilitate a smoother planning process, with a larger number of stakeholder consultations taking place, leading to a larger number of plans being approved with benefits being realised for all parties concerned. The overall number of appeals will be reduced, the general acceptability of proposals will increase and this will help to shorten the planning time required to access raw materials.

Features relating to the Wider Adoption of the Good Practice

Taking proactive measures to facilitate sustainable engagement with local communities represents good practice for the mining industry. The introduction of consultation manuals helps to inform

interest groups at an early stage of the steps that form the planning process. This supports the activities of interest groups to appropriately prepare for communication and dialogue in a structured way. A smoother and better planned planning process can help to reduce conflicts and facilitate win-win outcomes for all parties concerned. Ultimately, this makes the process more manageable for authorities, improves and increases the acceptability of official decision-making.

Further Information

Swedish Minerals Strategy

http://www.regeringen.se/content/1/c6/21/89/31/dcee0282.pdf

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CASE 15 - INCREASED SUSTAINABILITY FROM THE USE OF ROYALTIES, PORTUGAL

Introduction

Portugal has introduced changes to the royalties system to ensure that part of the income generated benefits the local communities in areas where mining activity takes place. Under the new scheme, up to 25% of the royalties payable as part of all concession agreements for exploration or exploitation can be allocated to finance sustainable development projects. The measure simplifies the royalties regime and ensures that the local communities get additional benefits through social-economic or environmental support projects in their area. In parallel, it helps the mining industry improve its public profile and strengthen the ties with the local communities.

Theme

Governance but also permits and authorisation

Reasons for highlighting this project

This specific case is an illustration of governance strengthening through the provision of a mechanism and incentives for a greater level of engagement with local communities and local authorities. In parallel, it simplifies and improves the legal framework for exploration and extraction activities and improves the profile of the sector.

Description

In Portugal, royalty payments – which are above any tax payments – for the exploration and exploitation of natural resources are determined in concession agreements between the State and the concessionaries. The level of royalties is usually linked to the net smelter return on sales, with a minimum of 0% and a maximum of 25%.

Until recently, income from royalties paid to the national government had contributed to the government budget with no specific reference or direct benefit to the region or district where the exploration and exploitation activity takes place. More generally, there has been no clear link between the income from royalties with actions and measures to support the development of the mining sector. At the same time, mining companies often finance local social, economic and environmental programmes in the areas where they have mining activity as part of their social corporate responsibility programme and where, among other objectives, they make efforts to enhance their profile within the local community. This financial contribution comes in addition to any royalties paid to the central government.

The change of the royalties regime has been one of the first measures proposed and implemented under the National Strategy for Raw Materials – Mineral Resources (Axis D – Economic, social, environmental and territorial sustainability). It aims to strengthen the contribution of the mining sector to local development and improve its profile and social acceptance. It provides that up to 25% of the royalties due to the Central government can be allocated to sustainable development projects that can benefit local communities. The nature of these projects is to be determined in co-operation with the regional or the local authorities. They can include:

- local/regional social responsibility projects and programmes;

- local, regional or national environmental projects or projects to highlight geology and mining heritage;
- projects proposed by local authorities (municipalities, districts) covered by the area of the mining activity.

In addition, in accordance with the National Strategy, the remaining part of the royalty payments are intended to be used to support measures under Axes B of the National Strategy (Knowledge and appreciation of the national potential) which includes research and technological development projects in relation to the mining sector and the strengthening of the geological knowledge base.

So far, thirteen exploration, six experimental exploitation and two exploitation contracts have been signed since the adoption of the new royalties' regime in 2012. Data on the total level of royalties that have been directed to local development projects are not available at this stage. The Mining Authority is developing a database that will include information on the budget of individual contracts signed, the municipality/region benefiting and the type of projects financed that will help better monitor the implementation of the scheme.

Features contributing to Improved Competitiveness

The specific measure combines an improvement of the legal framework concerning royalties with a streamlined mechanism for the use of income from royalties to support local development projects.

From the point of view of the industry, the new regime is considered to be a positive step since it allows firms to make better use of an expense that many firms already incur, to improve their profile and that of the mining sector as a whole. Higher levels of social acceptance can clearly contribute to better conditions for investment in the sector and it can also help avoid or mitigate conflicts and delays in the permit and authorisation process, thus making access to raw materials deposits easier.

From the point of view of the local communities, it provides access to funding to support local development projects, environmental rehabilitation activities or projects to exploit the mining heritage, thus potentially creating additional sources of economic development. For the central government, it represents an important source of funding for research projects related to new exploration and extraction technologies and the creation of new geological knowledge.

Features relating to the wider adoption of the good practice

To the extent that a royalties system exists in other Member States, this is a good practice that can be rather easily replicated. An important aspect, highlighted by an industry representative, is the presence of a clear framework defining the process and the type of projects that are eligible under the royalties scheme. It is important to ensure that projects are directly or indirectly relevant to the mining sector so that they are also attractive to firms.

Further Information

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CASE 16 - GREEN MINING: MINIMUM-IMPACT MINES 2011-2016, FINLAND

Introduction

One of the significant initiatives following the development of Finland's Mineral Resources Strategy in 2010 has been the Green Mining programme. Now integrated into the Finnish Action Plan for Development of Sustainable Extractive Industries, Green Mining is a programme that supports key developments across a broad section of Finland's extractive industries value chain, illustrating a strategically intelligent approach to strengthening Finland's industrial capacity in the sector, while also having clearly in view the aim of making Finland a world leader in sustainable mining.

Theme

Governance

Elements of the Green Mining programme consist of important contributions to the information and knowledge base.

Reasons for Highlighting this Project

Finland is widely recognised as providing a good environment for the raw materials industry and has regularly come first in the assessment based on the annual survey of Mining Companies conducted by the Fraser Institute in Canada. However, beyond a conducive administrative and investment environment, there is also the issue of the strength of the economic framework within which individual companies operate.

At one level, Green Mining can be seen as a series of projects supporting particular points in the value chain, but in pursuing a diverse but systematic approach to strengthening different parts of the sector, it illustrates an important facet of the strategic governance. Green Mining is, in effect, promoting a national mining cluster, with international ambitions.

Description

Green Mining is a strategic programme aiming to promote the sustainable development of the Finnish raw materials sector. It is co-ordinated by Tekes, the Finnish Funding Agency for Technology and Innovation, with a budget of €60 million, out of which Tekes funds €30 million and the other partners the rest.

The Duration of the programme is from 2011 to 2016 and it covers the whole of the raw materials industry – mining, aggregates, stone, machinery, technology and equipment and related services.

In developing the Green Mining programme, Tekes and its partners were inspired by the vision set out in Finland's Mineral Resources Strategy, which saw Finland in 2050 as a global leader in the sustainable utilisation of mineral resources and the minerals sector as one of the key foundations of the Finnish national economy. It is worth noting that there are two important elements in this vision. One the one hand, there is the objective of having a leading part in the development of sustainable techniques and processes, but at the same time, there is the objective of making the industry in all its parts a major contributor to the national economy and, although the title of the programme suggests a focus on the first element, in fact, this objective is intertwined with the second element, which sees a significant potential for the sector in the future Finnish economy.

The aim of Green Mining, therefore, is:

- to make Finland into a global forerunner of the responsible minerals economy by 2020;
- to develop, in addition to conventional extraction activities, new business requiring leading edge skills that offer export opportunities to Finnish mining sector companies;
- to achieve global leader status for Finnish mineral industry research in selected sectors.

Priorities include minimising environmental and social impacts affecting communities across the production chain, the development of new and better working methods and safety standards at mine sites, and a more proactive approach when ore deposits are exhausted and mining ends.

Finland has a long history of mining activity and metal production. Iron ore mining began in the mid-sixteenth century, since when close to 300 metal mines have been opened. Copper, nickel, zinc, cobalt, chromium, iron, gold, vanadium, and other metals are produced, along with industrial minerals, such as carbonates, apatite, and talc. Finland is Europe's only chromium producer and its largest producer of talc and wollastonite.

A number of new mines have been opened recently and more are under development. Current projections indicate that output could reach over 70 million t/a by 2020, including many metals and minerals critical for high-tech applications.

Finland is Europe's only chromium producer and its largest producer of talc and wollastonite. A number of new mines have been opened recently and more are under development. Current projections indicate that output could reach over 70 million t/a by 2020, including many metals and minerals critical for high-tech applications.

Beyond the core exploration and mining activities, Finland is a leading country in mining technology, machinery, and metallurgy and already has a well-resourced, internationally networked and innovative mining cluster, with a strong SME-network capable of exporting technology and services.

A central goal is to increase the number of SMEs targeting the export market within the mineral cluster and consequently the programme is creating new business that make use of new, specialised expertise alongside the field of traditional mining (which is also growing). Supporting this, the programme aims to achieve global leader status for research conducted in selected sectors.

Organisation of the Green Mining Programme

Every project to be funded must include at least one of the following concepts and aims: energy and material efficiency, new mineral resources for future generations, new and better working organisation and practices, minimising adverse social and environmental impacts, sustainable mine closure practices. Each of these requirements has been included in the programme in order to achieve specific impacts. The programme concept has therefore, been summarised as follows:

Objective	Effects
Promote materials and energy efficiency	Less energy used in process Renewable energy utilised Less side rock and wastes Less water used and discharged
Ensure availability of mineral resources for future needs	New ore reserves Advanced exploration techniques Mineral processing for low grades
Minimise adverse environmental and social impacts	Reduction of environmental footprint and emissions Maximising positive social impacts Consideration of stakeholder interests
Improve work and organisational practices	Culture of continuous improvement of the safety, quality and environmental performance of the

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Objective	Effects
	companies
Ensure sustainable land use following mine closure	Mine closure plan is started simultaneously with mine planning and is updated regularly during the whole life time of the mine

At the same time care is being taken to address significant elements in the value chain of the raw materials sector, covering exploration, mining and processing, but also technical services.

The programme was expected to have 40-50 different projects over the 2011-2016 period. Currently the programme has more than 50 projects and it is now expected to have close to 60 by the end of programme in 2016. Approximately two thirds of the funding is directed to companies and one third to research organisations. Three calls directed at research institutes have been made and there will not be any more public research projects. However, proposals for the projects by companies can still be submitted at any time.

The programme involves companies, research institutes, and universities and the Geological Survey of Finland (GTK) is closely involved in helping develop the expertise needed, working together with universities, other research organisations, and mining technology and mining companies. The programme is promoted through networking events and regional road shows and support is provided in the form of service expertise and assistance with the travel expenses for developing international cooperation, since developing international cooperation is also a major priority.

Tekes has specific evaluation criteria for the research and development projects. In addition, in the case of the Green Mining programme, there are the following funding criteria:

- The use of international networks is required
- The skills developed need to be of an internationally high level
- The programme will finance only those projects that take into account the materials and energy efficiency and related environmental aspects of the life cycle. A life cycle impact assessment plan must be presented in the project plan.
- The projects are expected to have a vision of how the results will be utilised by businesses.

Projects can be private, company-led projects – which account for the bulk of the programme – or public research projects. Funding for companies from Tekes can be in the form of grants (35-50%) or loans (70%), while public research organisations receive grants (60/70%).

Implementation of the Green Mining programme

The first 27 Green Mining projects were launched in 2012 and cover areas such as sustainable exploration, producing gold by thiosulphate leaching, recovering REE compounds from apatite minerals, new methods for the online monitoring of environmentally critical substances in process water and wastewater streams, and geothermal heating and cooling at mine sites.

Currently (November 2013), there are 29 projects led by industry with inputs from mining companies (7), technology providers (6), instrument manufacturers (3) and providers of materials. In addition there are 28 public projects, with 38 private partners and 30 international partners. Altogether, there are 19 research organisations participating, 23 mining and exploration companies, 61 technology and service companies, 7 municipalities and associations and 30 international partners.

In addition to the areas initially covered, there are now projects dealing with arsenic handling, nitrogen handling, arctic exploration, waste treatment, particles and noise and social impacts and license to operate.

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Example - Geothermal energy production - MINERES
Needs • Energy efficiency is needed to reduce costs and emissions and create green image of the mining industry • New ways for utilisation of closed mine sites **Approach** • Active and closed mines host significant geothermal resources which can be utilised using modern heat pump technology e.g. in heating the inlet air of the mines or for heating of residential areas. This is researched in several case studies. **Benefits** • Geothermal energy is a renewable and cost efficient alternative to fossil fuels • Mining sites can provide energy for industrial and residential needs even after their closure **Challenges and opportunities** • The distant locations of Finnish mines limit their use as **geothermal energy** sources for residential needs • Export potential - the results of successful pilot projects can be utilised in mining industry all over the world

Further brief details are provided of projects funded by Green Mining on the Tekes web site[31].

Results & Impacts

The programme has not yet been evaluated since it is still ongoing. However, Tekes has a policy of subjecting all programmes to interim and ex post evaluations. These evaluations aim to provide information on how far programme objectives have been achieved and what have been the impacts. The evaluations also aim to provide information for the strategic development of programme activity and for the operation of Tekes, as an organisation.

Metal ore production has grown strongly in Finland in the past decade and although clearly there are other factors, the Finnish Minerals Strategy and now the Action Plan, which includes the Green Mining programme, appear to be having a positive effect.

[31] https://extranet.tekes.fi/ibi_apps/WFServlet?IBIF_ex=o_projekti_rap1&YTARKASTELU=Y&YEDTASO=OHJELMA&YOHJELMA=Green%20Mining&YMUOTO=HTML&YKIELI=E

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Figure 1 - Evolution of ore output from metal mines

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

In aiming to pursue the vision for the Finnish raw materials sector set out in the Minerals Strategy adopted in 2010, the Green Mining programme has supported not only high standards of sustainability, but also developments to strengthen the country's raw materials cluster at critical points in the value chain. Thus the programme not only supports developments in new technology, but also innovation in work and organisational practices.

It therefore aims to promote competitiveness in a broad sense. By taking a view of the needs across the industry and supporting actions from exploration through to processing and the delivery of services, Green mining offers strategic support and promotes the competitiveness of the industry as a whole.

Features relating to the Wider Adoption of the Good Practice

As much as in the detail of the projects supported, the Green Mining programme illustrates a strategic, and indeed a global vision that could well inspire similar approached elsewhere.

Further Information

http://www.tekes.fi/programmes/GreenMining

Green Mining, programme presentation:
http://www.tekes.fi/en/gateway/PTARGS_0_200_403_991_2092_43/http%3b/tekes-ali2%3b7087/publishedcontent/publish/programmes/greenmining/documents/greenmining_esittelydiat_en_01062012.pdf

Link to the **Research projects in Green Mining Programme**:

http://www.tekes.fi/en/gateway/PTARGS_0_200_403_991_2092_43/http%3b/tekes-ali2%3b7087/publishedcontent/publish/programmes/greenmining/documents/uutisia/gm_kalvot.pdf

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CASE 17 - MINERAL RESOURCES PLAN, AUSTRIA

Introduction

The Austrian Mineral Resources Plan has been cited as best practice in land use planning at a European level on a number of occasions. Various features of the Plan, including its systematic approach, continue to constitute good practice and further detail has recently been provided on its implementation at a local level.

Theme

Improving land use planning processes

The case also has elements of Improving policy and the legislative framework and improving the governance of developments relating to raw materials.

Reasons for Highlighting this Project

Although this case is already relatively well known, it was decided to include it in the land use planning section of this Report because it continues to show a number of features that characterise it as good practice, including its reference to principles agreed at a European level, its inclusion of demand-side considerations, its coverage of a wide range of raw materials, good co-ordination between different levels of government and recent evidence of implementation on the ground.

Description

As part of Austrian national minerals policy, a minerals strategy has been established, with the aim of ensuring and improving the supply of minerals and commodities for the Austrian economy. The Austrian authorities had welcomed the Raw Materials Initiative of the European Commission and, like the RMI, the strategy is based on three pillars:

- **Pillar 1:** Securing minerals supply from domestic resources (realisation of the Austrian minerals resources plan)
- **Pillar 2:** Securing minerals supply from Non-EU countries (raw materials partnerships)
- **Pillar 3:** Promoting resources efficiency (substitution, recycling, development of new methods with reduced minerals input)

A key element in Pillar 1 is the Austrian Minerals Resources Plan, whose function is to provide the mechanisms for an efficient delivery of the objectives of national minerals policy through local planning systems. This consistent and systematic application of policy at different levels is already a feature of good practice, but the Austrian authorities have also prided themselves in using 'innovative, objective and system-analytical methods' to achieve a highly effective integration of the raw materials dimension into the of land use planning system.

The Legal & Administrative Framework

The legal base for mining in Austria is the Mineralrohstoffgesetz ('MinroG')[32], which came in force on January 1st 1999. In contrast to the former mining law (Berggesetz 1975 with amendments) MinroG

[32] Mineralrohstoffgesetz Federal Gazette I Nr. 38/1999

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applied to all mineral commodities. Since 1999 there have also been further special ordinances governing procedural law, industrial safety, health and safety and the environment.

MinroG regulates prospection and the extraction of minerals and determines which minerals are free for mining, which are state-owned minerals and those that belong to landowners.

Extracting raw materials is the responsibility of the private sector, but there is a public role in providing an appropriate information framework, including data on the spatial distribution of raw material resources and on land use, but also other relevant data.

The public responsibility in Austria is divided between the four levels of government in the federal structure – the Federal Government, Federal States (Länder), Districts and Municipalities. The federal government, specifically the Ministry of Economy, Family and Youth, is responsible for overall raw materials policy, but spatial land use planning is the responsibility of the federal states. As a result, each of the nine federal states has its own regional planning laws, which in the past had differing provisions in relation to the safeguarding of mineral resources. As work on the Mineral Resources Plan progressed, and with the assistance of the federal government, most of the states have developed sectoral regional development plans for raw materials and have designated 'suitability zones' or "mineral safeguarding areas'. Of course, in the developments at the federal state level, it is necessary to take the local interests and sensibilities into account.

However, this process began with an amendment to the Mineral Raw Materials Act in 2001, when the National Council approved the following motion calling upon the Minister of Economic Affairs and Labour,

> *'… to prepare an Austrian Mineral Resources Plan documenting deposits of needed minerals within an appropriate period of time. Based on these maps, a national master plan for securing the supply of mineral resources should be drawn up in cooperation with the provinces and municipalities which should serve as the basis for future mining activities.'*

Finally, it should be mentioned that as a result of the Mineral Deposits Act[33] of 1947 the Geological Survey and the Mining Authority are obliged to cooperate in surveying the territory for any minerals. The long standing and constructive co-operation developed on the basis of this requirement has provided an excellent basis for establishing high quality minerals-relevant information.

The Context for the Plan

A constructive relationship has been developed between the Austrian authorities responsible for raw materials policy and partners at a European level, in which recommendations, such as those made in 2010 by the Ad hoc Working Group of the Raw Materials Supply Group have fed into thinking at a national level, but equally Austrian experience has provided inspiration in formulating principles at a European level and the Mineral Resources Plan, in particular, has been cited as best practice on a number of occasions. As a result there is a good cross-reference between objectives expressed at European and national levels.

The explanation of the Mineral Resources Plan[34], published in 2012, begins with an overview of the meaning of raw materials for society and then proceeds to analyse the availability of raw materials within the EU and the security of supply before making reference to strategic developments at a

[33] Federal Gazette 247 / 1947
[34] Leopold Weber et al ' Der Österreichische Rohstoffplan' Geologische Bundesanstalt, 2012

European level. The context therefore for the explanation of the details of the Plan shows an orientation and motivation that is highly consistent with the developments that have been advocated at a European level.

Here it is regarded as essential to use land use planning to safeguard actual and potential mineral resources effectively and to avoid improper land use and/or the sterilisation of mineral resources.

The Ad hoc Working Group had agreed that a Raw Materials planning policy is a key component of a national minerals policy, which should describe in detail the ways that future minerals supply will be secured and demonstrate a strong link to land use planning policy and regulation. It should be based at least on the following elements:

- a digital geological knowledge base;
- a transparent methodology for identification of mineral resources (quality, quantity, local importance);
- long term estimates for regional and local minimum demand (especially for construction materials), which take account of other sources of materials (e.g. recycled materials), based on sustainable development principles;
- a monitoring tool;
- identifying and safeguarding mineral resources to meet minimum demand, taking account of other land uses.

It will be seen that these elements play an evident part in the Mineral Resources Plan

The Process

Work for the Plan was carried out in two phases so that the experiences of the federal and provincial administrative authorities, companies, interest groups and the scientific community could all be taken into account as the work progressed.

The main purpose of Phase 1 was to draw up a baseline survey. This involved surveying, documenting and evaluating all occurrences of raw materials in Austria and also carrying out a thorough analysis of the potential supply risks. An effort was also made to find innovative approaches to the exploitation of typical alpine deposits. The work of Phase 1 was carried out in four working groups:

Working Group 1: Geology and Resources: evaluation of raw material areas with near-surface construction materials or deeper seated deposits such as metal ores, industrial minerals and coals. It included a survey by the Geological Survey of Austria (GBA) of soft and hard rock throughout Austria together with an assessment of their quality and quantity. The Expert Committee for Mineral Deposit Research from the Mining Society of Austria also developed a special method to evaluate occurrences of metal ores, industrial minerals and coal and to determine the area needed.

Working Group 2: Mineral Economic: Parallel studies, conducted by the University of Leoben to evaluate the economic aspects of raw materials deposits. These studies made a major input into assessing the grounds for classifying mineral areas as being worthy of being safeguarded. They included analysis of Austria‘s supply situation and the probable development of prices and demand, the Austrian raw materials industry and ways of improving Austria’s ability to meet demand from domestic sources and the international situation and trends, possible supply risks etc.

Working Group 3: GIS Implementation: Exploration of the possibilities to produce maps of the survey results (although the results were not published at this stage).

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Working Group 4: Supply Security: Analysis of how vulnerable the economy is to interruptions in the mineral raw materials supply chain, including an identification of the raw materials that are of greatest importance for the economy.

Phase 2 of the Plan, made use of the work of the initial phase to identify areas for raw material exploitation, by adopting a strategy of conflict elimination. The areas identified and mapped in Phase 1 were digitally superimposed on regional development plans showing areas where the extraction of raw materials is prohibited or hindered. By removing prohibition and conflict zones, the remaining areas of interest were identified, where exploitation is possible. Essentially, Phase 2 consisted of a process that was designed to eliminate land use conflicts.

Implementation

The implementation of the systematic approach adopted was assisted by a sound heritage in terms of mapping the territory.

Between 1977 and 1982 the entire area of Austria had been surveyed from the air, aero-magnetically. Results were available both as printed maps and digitally and in some instances data were reprocessed.

Over a similar period, more than 36.000 stream sediment samples and more than 6.000 samples of heavy mineral concentrates had been collected in the crystalline complexes of Austria and analysed for 35 elements. The results are available as maps[35] and digitally. Between 1990 and 2010 the remaining areas (calcareous alps, tertiary basins) were surveyed (and approximately 8.000 samples collected) as well. As a result, the geochemical survey covers the entire territory of Austria.

Furthermore, the data are accessible through the Interactive Raw Material Information System (IRIS), developed through close co-operation between the key organisations for the sector[36]. This is an expert tool that allows simultaneous visualisation of geology, mineral occurrences, geochemical distribution of 35 elements (including geostatistical calculation), aero-geophysical survey, and information about size, shape, references etc. The information is of the greatest interest for both scientists and the extractive industry.

Overall, then the development of the new instruments under the Mineral Resources Plan was able to build on a good information base.

It is also important in describing the development of Mineral Resources Plan to highlight the distinctive approaches developed in the application of the methodology to take account of the varying circumstances of the different categories of raw materials - sand and gravel, solid rocks, high-quality carbonate rocks and marlstones, clays and metal ores, industrial minerals and coal. In particular, there were different methods applied in evaluating the need for the different categories of material.

In the case of metal ores, industrial minerals and coals, a distinction was first made between occurrences that are worth safeguarding and those that are provisionally worth safeguarding. The former are occurrences, which, because of their quality, quantity and yield could be or already have been mined. Past mining activity was taken to indicate residual (geological) reserves, with a high possibility that their quality, quantity and yield would enable them to be extracted again in the

[35] Thalmann, F., Schermann, O., Schroll E. & Hausberger, G: ' Geochemischer Atlas der Republik Österreich 1:1.000.000' – Geologische Bundesanstalt, Wien. 1989

[36] the Austrian Ministry of Economy, Family and Youth in close cooperation with the Austrian Geological Survey, the Austrian Academy of Sciences (Commission for Research for Mineral Resources) and the Minerals Research Committee of the Austrian Mining Association.

future. Mineral areas considered to be provisionally worth safeguarding are deposits that for economic reasons or because of mining or mineral processing difficulties cannot currently be exploited, but where there is a reasonable likelihood that with market changes and/or the development of new techniques they could be mined in the future.

The evaluation of a deposit's status was made by members of the Expert Committee for Mineral Deposit Research at the Mining Society of Austria.

Deposits were then categorised according to their potential to have local impacts. For those where open cast extraction would be used, the area to be safeguarded covers the entire operating area of the open pit slopes, and the auxiliary infrastructure, including storage facilities, waste dumps and tailing ponds. For underground mining, a distinction was made between near-surface deposits (up to 50 m depth), low depth deposits (50 m–200 m) and deep deposits (> 200 m) and differing assumptions made about the area that needed to be safeguarded to take account of subsidence, and in fractures. Again the mine's auxiliary infrastructure was included in the area safeguarded, together with areas necessary for access purposes and haulage and transport.

In phase 2, the maps for metal ores, industrial minerals and coals were overlaid on the prohibition zones. However, where there is an occurrence of high quality minerals and this coincides with a conflict zone, there is a systematic process of discussion with the officials of the federal states to determine where these conflicts are manageable and where conflicts cannot be resolved.

Different approaches were used for each of the other categories of material. The situation of sand and gravel, for instance, was relatively complex. The initial information was gathered from regional distribution and lithological description of the material recorded on the maps of unconsolidated sediments, together with information in the materials archive of the Geological Survey (GBA). An innovative evaluation assessment was then conducted, taking into account three dimensions:

- the number and operating status of the sand and gravel pits in an area
- information from the pit operator regarding the use of the material, relative size of the pit
- the importance of the pit for regional / local raw materials supply.

The quality of the material was then assessed and classified into five different categories. This was then combined with the results of the earlier analysis in order to calculate the geological potential of a body of sediment.

The next stage was to compare the geological potential with the economic significance of the raw materials at a regional level, taking into account factors such as transport distances, population density and other elements of regional planning, but also allowing for the fact that relatively small amounts of sand and gravels can be important to alpine communities. The geological suitability of an occurrence was thus determined by a combination of geological potential and regional importance and again classified into five categories.

In phase 2, the occurrences of sand and gravel of sufficient suitability (areas of very good to medium suitability) were systematically compared with 'prohibition' and 'conflict' zones arising from regional planning specifications, although it should be noted that these varied appreciably in nature and detail between states. Prohibition zones are those areas in which the extraction of mineral raw materials is forbidden by federal or state law. Conflict zones are defined as those areas in which there are obstacles to extraction. These areas include, for example, Natura 2000 areas, where raw materials can only be extracted if there has been a positive nature compatibility analysis.

The areas where there was no prohibition or conflict were then subjected to a volumetric analysis to verify that supply is sufficient to meet regional demand and a further analysis to distinguish between wet and dry working. Maps are available to show the results of this analysis.

Finally, in terms of the overall approach, it should be said that there are a series of other initiatives in parallel to the detailed analysis, including several actions to raise awareness of the importance of raw materials for society and how resources can be handled sustainably.

The Results

At the time of the latest publication on the results of the Plan in 2012, they were as follows:

- *Sand and Gravel:* Approximately 48 % of the territory of the Republic of Austria is covered by unconsolidated sediments. Of these, approximately 18 % fall into suitability class 1, and 8 % into suitability class 2. The land use requirement for the quantities of sand and gravels in suitability classes 1 and 2 and reserves > 50 years, is only 1.47 % of the total surface area of the country.
- *Solid Rocks:* Approximately 2,900 occurrences distributed across the entire country were assessed. 346 of these proved to be worth safeguarding.
- *High-Quality Carbonate Rocks and Marlstone:* More than 650 occurrences distributed across the country were analysed. 171 of these occurrences proved to be worth safeguarding.
- *Clay:* A total of 108 raw material zones in the brick category were identified and 85 zones were identified as being worth safeguarding or provisionally worth safeguarding.
- *Metal Ores, Industrial Minerals and Coals:* A total of 245 mineral occurrences were identified that are either worth safeguarding or provisionally worth safeguarding. 28 of these fall into the group of iron ores and steel alloys, 14 into non-iron metals and 17 into the group of precious metals. Moreover, 89 occurrences of industrial minerals and 97 occurrences of coal were identified as being worth safeguarding or provisionally worth safeguarding.

The report on the Plan goes on to provide information about the implementation of the results of the analysis at a federal state level, since it is at this level that the results of the analysis have to be taken up, although it should be said that this only concerns the situation up until March 2011.

While in some federal states, such as Vienna and Lower Austria, the determination of the position was still to be made, in others, there have been a variety of developments. At the level of the state planning legislation and policy instruments, the Raw Materials Plan and the need to secure access to raw materials has been recognised in a number of instances and in the case of Burgenland, for instance, given a high profile. The "Mineral Resources Plan" has been implemented as planning instrument in the "Land Use Management Act" of Vorarlberg, so that it has to be considered in land use management processes in the state and in the Tyrol, the principles of the Plan are also being integrated into regional planning law and procedures. In Steiermark, the digital results of the Raw Materials Plan have been taken up and used as the basis for the regional development programme, and the process of carrying this through to designation of priority areas is underway, while in Salzburg, there is a pilot project to assist with implementation of the provisions of the minerals plan. In other states, such as Carinthia, the process is more complex, with differences in activity at a municipal level and mechanisms such as reconciliation processes being put in place, and in Upper Austria, the process has focused on identifying the exclusion zones, making extraction possible in areas where it has not been excluded.

Clearly these processes have continued since the publication of the latest report, but the diversity of approaches emphasises the complexity involved in carrying through the work of the Plan to full implementation.

Good Practice Cases – Case 17

A

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

Providing a systematic spatial analysis of raw materials potential, both in a physical sense and in relation to the needs of the economy, is a major contribution to the effective development of land use planning in a way that recognises the needs of the raw materials sector. It is not the whole story, since the interests and requirements of other land uses need to be taken into account and, in the case considered, this requires a substantial input from the authorities across the country. Nonetheless, by focusing the attention of the appropriate authorities on the issues of raw materials land use and by providing robust instruments to analyse current and potential uses, the Raw Materials Plan has made a substantial contribution to facilitating exploration and sustainable exploitation at a local level.

Features relating to the Wider Adoption of the Good Practice

The Mineral Resources Plan in Austria has helped the formulation of the principles advocated at a European level, notably in the report of the Ad hoc Working Group, and continues to be a model assisting the more widespread adoption of a distinctive contribution to the development of land use planning.

Further Information

Austrian Federal Ministry of Economy, Family and Youth

http://www.en.bmwfj.gv.at/Energy/Seiten/TheAustrianMineralResourcesPlan.aspx

Leopold Weber et al 'Der Österreichische Rohstoffplan 2012'

http://opac.geologie.ac.at/wwwopacx/wwwopac.ashx?command=getcontent&server=images&value=AL0026_001_A.pdf

Division of Raw Material & Basic Material Policy: POST@IV7.bmwfj.gv.at

Good Practice Cases – Case 18

A

CASE 18 - INCREASE THE CAPACITY AND EFFECTIVENESS OF LAND USE PLANNING, PORTUGAL

Introduction

This is an initiative of the Portuguese Mining Authority developed under the national strategy for geological resources. It establishes a land use planning management system organised at 3 levels: national, regional and municipal. The objective of the intervention has been to develop land use plans which will clearly demarcate areas allocated to geological resources, to facilitate and expedite the mineral licenses process and to help avoid or mitigate land use conflicts.

Theme

Land use planning, with some implications for permitting.

Reasons for Highlighting this Project

This is an example of a structured approach that improves the land use regime and ensures access to raw materials. It provides a consistent framework for demarcating existing deposits and areas of potential geological interest across the whole country while taking into account other land uses. It also ensures co-ordination among the different levels of land use planning - national, regional and local – integrating the most recent information from geological surveys. In parallel, it contributes towards a more transparent, predictable and effective permit regime.

Description

An important problem for the mining industry in Portugal has been the problematic access to territory for exploration and extractive activity. There are often conflicts with other economic activities, inappropriate demarcations of the different land uses and often inconsistencies between the land use plans of neighbouring municipalities (e.g. areas demarcated for mining use under one plan that extend over multiple municipalities are not recognised as such in the land use plans of the neighbouring municipalities).

Such inconsistencies create uncertainty and lead to important delays to the approval of applications for mining activity but also an inability to implement an effective strategy for the exploitation of mineral resources.

Thus, the objective of the specific intervention by the Portuguese Mining Authority (DGEG) has been to ensure that exploration and exploitation permit areas and areas with a potential mineral resources interest are clearly demarcated in land use plans and that mining and quarrying activities are always considered in land use planning policies. This should be done in accordance with the overall land use planning strategy determined at the national level and taking into account the most recent geological surveys.

The intervention was initiated in 2004 with the development of the National Plan for Land Use (PNPOT). The PNPOT is a national plan which considers the land use policy of the whole country and defines the major lines of intervention in different sectors of activity, including natural and geological resources. The PNPOT defines the principles and policies for the country. The Portuguese Mining Authority took part in the meetings and contributed to the various working documents in the development of the PNPOT.

Good Practice Cases – Case 18

A

The application of the national plan at the regional and local level started in 2007 with the gradual adaptation and update of the regional and municipal land use plans. There are 5 different regional plans for each of the regions (PROT - Plano Regional de Ordenamento do Território) in the country and 278 municipal plans (PDM - Plano Diretor municipal).

The land use planning system includes three levels: national, regional and municipal:

- At the national level the main principles and policies concerning access and use of mineral resources and the development of mining and quarrying activity are defined.
- At the regional level the principles and policies are implemented taking into account the geological knowledge and the potential of each region.
- At a municipal level, land use plans demarcate areas allocated to geological resources (Spaces of Geological Resources) for exploration and exploitation indicating areas where the mining activity is the main land use and others where the development of other activities does not compromise the access to mineral resources.

The new land use plans also ensure that a consistent terminology is used to characterise land uses related to raw materials including:

- potential areas (areas for which there is no sufficient knowledge but for which there are sufficient indications of the presence of raw material deposits. Such areas can be used for research and exploration contracts)
- conservation areas (areas for which there is already recognised geological potential that can be used in the future when this is considered appropriate)
- areas for exploration (areas for which there is recognised geological potential which are available for exploration and exploitation)

Exploitation permit areas are demarcated in the land use plans as restricted areas where mining activity is the main land use. Furthermore, overlaps with other land uses, to the extent that they do not compromise the current and future access to the minerals, are also possible in the case of areas identified as potential or actual conservation areas.

The Mining Authority has been responsible for overseeing the implementation of the policy and ensuring the implementation of land use plans at the municipal level – which eventually take the form of regulations. It ensures that the plans properly cover mining and quarrying activities and that areas dedicated to geological resources exploration and exploitation are included. DGEG participates in the meetings of the municipal land use plan committees which also include representatives of the relevant regional development, environmental and spatial planning bodies and the bodies responsible for cultural heritage. Its key role is to ensure that the information available from geological surveys – included in geo-referenced maps - is properly integrated and that existing and potential raw materials deposits and mining activities are considered and demarcated.

So far, a total of 203 Municipal land use plans have already been updated, out of a total of 278 municipalities in the country. They are being used for the processing of applications for mining and quarry operating permits by regional or municipal authorities, depending on whether the operations are medium-large or small scale.

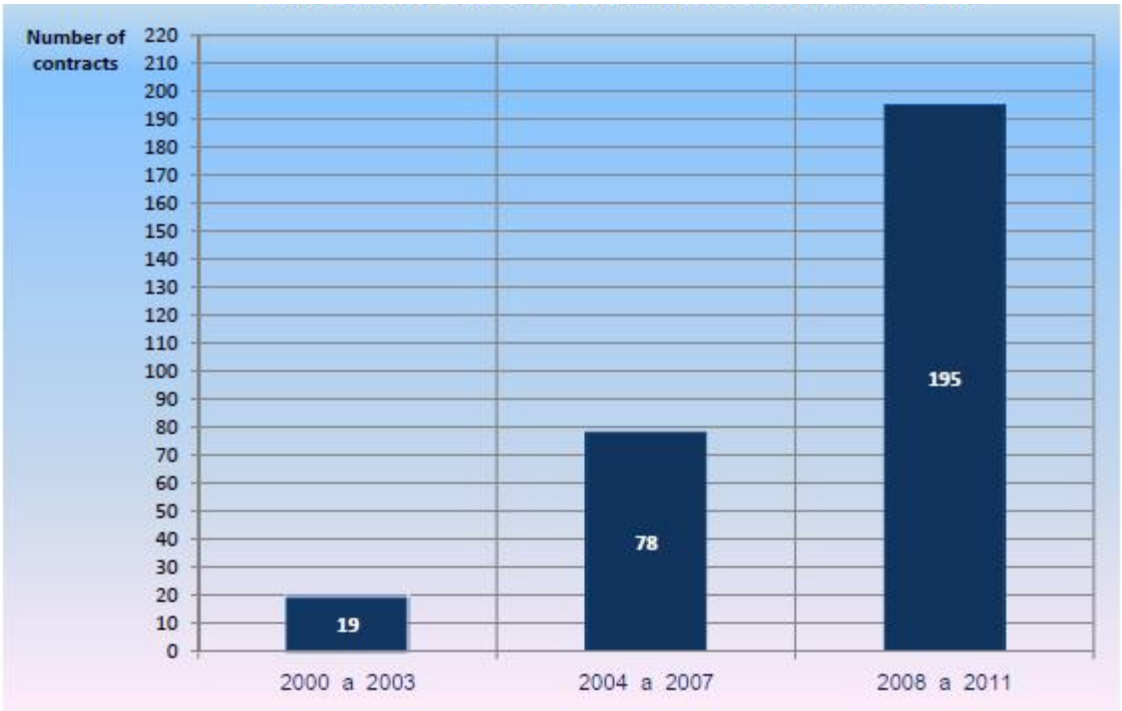
Features contributing to Improved Competitiveness

While only in the initial stages of its implementation, the new measure is recognised by the mining industry as a particularly positive step towards a much needed clarification of the situation concerning land uses and providing greater certainty in relation to future exploration potential. It also ensures that mineral resources are recognized and considered in parity with other natural

resources and also that the local land use plans integrate the most up-to-date information available in geological surveys. It also makes the permit application process simpler, more transparent and potentially more efficient since information on the land use is available prior to an application.

While it is not possible to establish direct causation at this stage it has coincided with a significant increase in the number of exploration contracts signed in recent years (see chart).

Figure 1 – Evolution of exploration contracts signed in Portugal (metallic and non-metallic minerals)



Source: DGEG

Features relating to the Wider Adoption of the Good Practice

This measure is rather easily transferable to other countries. A key element is the co-ordination and supervising role of the responsible entity – in this case the Portuguese Mining Authority. It ensures that the local land use plans are properly developed and that they are consistent with the broader regional and national plans. In each Member State, the responsible entity should be able to ensure effective implementation, avoid inconsistencies and maximise synergies between the local, regional and national level.

Further Information

Contact details:

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Good Practice Cases – Case 19

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CASE 19 - MINERALS PLANNING POLICY IN WALES, UK

Introduction

The Welsh government, in December 2000 published a report on *Minerals Planning Policy in Wales*. This sets out in detail the approach to be taken in planning policy as regards mineral extraction and related development (excluding marine aggregates). It superseded the preceding Minerals Planning Guidance Notes 1,2,3,6,7 and 10 – the others remaining in force until the relevant Technical Advice Notes could be published. The approach was seen as a useful improvement on the preceding situation as it integrated into one document the somewhat piecemeal situation that had evolved over time.

Theme

Land use planning processes

The case considers how Mineral Planning Authorities (renamed 'Unitary Planning Authorities' in 2004) prepare their unitary development plans (subsequently renamed 'local development plans') in a well-defined, co-ordinated and integrated manner, including engaging the wide range of other stakeholders involved.

Reasons for Highlighting this Project

This case study presents an example of a highly integrated and co-ordinated minerals land use planning process, which clearly sets out the roles of different levels of government (local, regional and national) and links with general planning policy. In addition, it indicates how and when liaison might be required with the relevant authorities in England. The approach is built around the creation of unitary development plans that look ahead 15 years and are reviewed at least every five years. Mineral Planning Authorities must also regularly assess mineral resources in their areas and the reserves for which planning permission has been granted.

Description

According to *Planning Policy Wales*[37], because of the differences between mineral working and other forms of development, the Welsh Government's land use planning policies for minerals development are contained in a separate document *Minerals Planning Policy Wales*. This sets out policy in relation to short and long term future use and the safeguarding of mineral deposits and is supported by specific technical Advice Notes.

However, in minerals planning, the principles of the Welsh Assembly's *Sustainable Development Scheme* should be adhered to. As far as minerals planning is concerned, these are[38]:

- *Social progress which recognises the needs of everyone*: to provide for the benefits of increased prosperity through an adequate supply of minerals that society needs now and in the future, together with protecting and improving amenity;
- *Effective protection of the environment*: to protect things that are highly cherished for their intrinsic qualities, such as wildlife, landscapes and historic features; and to protect human health

[37] Edition 5 of 2012 (1.1.6)
[38] Minerals Policy Wales, par. 7

and safety by ensuring that environmental impacts caused by mineral extraction and transportation are within acceptable limits; and to secure, without compromise, restoration and aftercare to provide for appropriate and beneficial after-use;

- *Prudent use of natural resources*: to help conserve non-renewable resources for future generations through efficient use, recycling and minimisation of waste; to protect renewable resources from serious harm or pollution; and to promote the use of appropriate alternative materials;
- *Maintenance of high and stable levels of economic growth*: to ensure an adequate supply of minerals needed at reasonable prices: and to safeguard mineral resources for future generations.

The organisations responsible for implementing the planning process are the **"Mineral Planning Authorities" (MPAs)**. They are any authority responsible for planning control over mineral working and include any county or county borough council and each national park in Wales. One of their key roles is to identify when Environmental Impact Assessments (EIAs) are required.

The MPAs work with a wide range of other organisations (including other MPAs) at local, regional, national and even international level. For example when ensuring the meeting of supply requirements, this can include, for aggregates: the North and South Wales Regional Aggregate Working Parties who provide a regional overview of supply and demand. For other minerals, there are other partners, for example, for coal there is the Coal Authority, and even the Confederation of UK Coal Producers, or the Coal Communities Campaign. There is also a Quarry Products Association and work with government in for example the Department of Trade and Industry (e.g. for licensing), as well as government departments involved in waste, energy and conservation matters.

As regards aggregates, planning authorities are provided with technical advice through the **Managed Aggregates Supply** system (before Welsh devolution this was an integrated system between England and Wales – now each has its own although they still co-ordinate). This provides a formal channel for the supply of technical information to planning authorities, with Welsh government policy backing, that underlies planning applications and appeals. The technical information and advice is the result of the deliberations of aggregates working parties which include representatives of industry and the authorities. Here information is shared about what the supply and demand conditions are in specific areas and the results are fed into the relevant planning authorities. The position is set out in an Annual Report. Authorities are obliged to use that information in their assessment of future need. This creates a certain degree of stability for the industry and planning environment. As regards issues around confidentiality of data, data are published in aggregated format so that individual company data are not readily apparent, and the industry seems to have adopted the view that although there are risks involved, the benefits outweigh the risks. One comment from industry is that they would like the advice of the Aggregate |Working Parties to be given more weight. At present it is just "guidance", whereas in England it is considered as more than just guidance and closer to an imperative.

The **overriding objective** is to provide a sustainable pattern of mineral extraction by adhering to 5 key principles that authorities must take into account in development control and when formulating unitary development plan policies. They are:

- To provide positively for the working of mineral resources to meet society's needs through, as far as practicable, the identification of areas for future working where this can be undertaken in a sustainable way; and to safeguard deposits of minerals from permanent development that would prevent or hinder their subsequent extraction for future generations.
- To protect areas of importance to the natural and built heritage from inappropriate mineral development

- To reduce the impact of mineral extraction and related operations during the period of working by, for example, ensuring sensitive working practices and improved operating standards.
- To achieve a high standard of restoration and aftercare, and provide for beneficial after-uses when mineral working has ceased.
- To encourage the efficient use of minerals by promoting the appropriate use of high quality materials and by minimising the production of waste by maximising the potential for re-use and recycling where environmentally acceptable.

To achieve these objectives, Mineral Planning Authorities need to develop **Unitary Development Plans (UDPs)**[39]. These plans should consist of two parts. The first part sets out the broad strategy for mineral working and related development while taking into account the Assembly's policies. The second part of the UDP relates policies and proposals to identifiable areas of land unless there is a good reason why this is not possible. Policies should cover mineral resources which are currently used or which may need to be used in the foreseeable future.

UDPs should provide further clear guidance as to where mineral extraction is likely to be acceptable and include policies which protect sensitive environmental features and provide protection for the environment and resources.

They should, for example: define where buffer zones are need between different land use types, provide guidance on aftercare and restoration, encourage on-site recycling (also for construction and demolition waste) and support co-ordinated transport strategies (preferring rail and water transport to that by road).

UDP policies for mineral development should cover at least 15 years from the base date and must be reviewed every 5 years or earlier where there are particular pressures for change or where changing circumstances dictate the need for a fundamental reassessment of priorities.

To facilitate this in relation to mineral policies and proposals, authorities should undertake regular assessments of mineral resources in their areas and of the reserves for which planning permission has been granted. They should also assess with regard to local, regional and national considerations, the significance of all types of mineral working in their area taking into account the need, distribution and production of each type of mineral. It is essential to have a comprehensive and up-to-date set of information to facilitate future sustainable planning for mineral extraction.

Further guidance has been issued in **Technical Advice Notes**, in particular, on aggregates (Technical Advice Note 1, 2004)).

The policy provides for ensuring **sustainable access** to raw materials by explicitly stating that there is a requirement to consider the potential for extraction of minerals from a location *before* undertaking other forms of development there. To this end it is necessary to know the location and quality of deposits, to consider the environmental constraints on such extraction, and to identify such areas on proposal maps and in policies.

Through these measures that were consolidated into the Minerals Planning Policy there was an improvement of the applicable legal framework in the country as previously there were many separate Minerals Planning Guidance notes issued.

It is clear that the approach implies a considerable amount of identification of data (e.g. as regards actual and potential deposits) as well as sharing of data between various stakeholders, both public

[39] Minerals Policy Wales, paragraphs 8-9.

and private. As such it has led to strengthening the information framework and the knowledge base in relation to raw materials (information on e.g. production, trade, supply, reserves).

This approach has led to an improvement in the governance of developments relating to raw materials supply as it requires input into and knowledge sharing between a wide range of stakeholders in order to develop and manage policy. The improvement in land use planning processes has also provided a better basis for the permits and authorisation process (including environmental impact assessment that is related to the authorisation procedure).

Future Developments

As regards the provision of a **sustainable supply** of raw materials in the future, the Minerals Planning Policy has some explicit provision to ensure this:

- MPAs must check within the UDPs that mineral needs are met (local, regional, national and UK). This involves working with other relevant groups.
- MAPAs must agree between each other the extent to which different regions contribute to supply – not just locally but in terms of the overall picture.
- The contribution of recycled products and waste needs to be included in the overall picture.

MPAs must also identify **areas for future working**. The way in which it is foreseen that this should be done differs for energy and non-energy minerals, as in the case of energy minerals supply is subject to conditions in world energy markets and this makes planning much more difficult, so the key here is to obtain as much information as possible from as many sources as are. For non-energy minerals future supply is seen as coming from identifying areas where extraction in the future is likely to take place, use of land banks, borrow pits and inactive sites.

Sites where extraction might take place are identified as follows:

- Specific sites where extraction is likely to take place and there will be a likely acceptance
- Preferred sites where it is known that there are deposits of commercial potential and where a reasonable chance of exploitation exists.
- Areas of search are those where it is believed there is some chance of mineral deposits – they are broadly defined.
- Other areas are areas outside the plan where exploitation should not take place unless there are shortfalls in supply and exploitation can occur in an environmentally and socially acceptable way.

In addition, MPAs can provide for **land banks** which consist of a stock of planning permissions for extracting non-energy minerals that might ensure for continuous production despite fluctuations in demand. A regional approach to the development of such land banks needs to adopted, which will require collaboration between the MPAs involved.

Furthermore use can be made of **borrow pits** which are temporary in nature to provide supplies for construction sites, for example.

Inactive pits, those that have permissions but are unlikely to reactivated need to be identified and planned into the development of a future strategy by the MPOAs and UDP (e.g. in terms of what might have to be done as regards restoration and after-use).

Good Practice Cases – Case 19

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Features contributing to sustainable supply of raw materials and improved competitiveness of the sector

The development of a land use planning system for the whole of Wales has made a significant contribution to the competitiveness of the industry, , through the clarity and certainty that the co-ordinated framework provides.

Industry is appreciative of the fact that the policy goes quite far in identifying what is meant by "sustainable", spelling out the social, environmental/ natural resource and economic components of the term in a way that is useful for planning purposes and discussions between the planning authority and industry. The balance of interests must drive decisions.

Furthermore, by putting future materials needs at the centre of the system and making allowances for developing sustainability issues into the future, together with te provisions for adjusting plans, the approach manages to combine clarity with an important degree of flexibility, allowing a response to changing circumstances.

At present (2013-2014) there is a consultation taking place as regards planning policy in Wales. It appears that the approach to change will probably be incremental rather than involving a radical overhaul of existing legislation.

Features relating to the wider adoption of the good practice

A reasonable amount has been achieved in Wales to provide a better framework for land use planning, without any major direct expense, largely though applying consistent principles that have to be observed by all the authorities involved and based on the recognition of future needs. However, this does require some commitment to co-ordination and sharing of information between the stakeholders involved.

Further Information

Wales Government Planning Division: Planning.division@wales.gsi.gov.uk

Good Practice Cases – Case 20

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CASE 20 – DEPARTMENTAL QUARRY SCHEME, FRANCE

Introduction

The initiative was first launched in 1992 and materialised with the adoption of an Act in 1993. It is managed by the French Ministry for Ecology, Energy, and Sustainable Development.

Departmental quarry schemes are an instrument to assist the prefect's decision when it allows quarrying operations to go ahead in accordance with French legislation on classified installations for the protection of the environment.

Schemes determine the conditions in which quarries are built, taking into account economic, regional and national interests as well as the availability of different types of resources, raw material needs inside and outside the department, as well as considerations as regards the efficient and rational use of resources. The environmental aspect of these schemes also involve the need to protect the natural habitat in areas where deposits are in order to exploit them, reconciling different land uses, reduce environmental impacts, and integrate recycling for a better economy of resources. The initiative aims primarily to encourage a sustainable and efficient use of resources.

Only industrial minerals (talc, quartz) and aggregates are covered by the initiative. According to French standards, aggregates can be distinguished according to their origin: alluvial deposit of solid rock, recycled materials (after demolition) and artificial materials (by-products of the construction industry). Mining has a separate legal status from quarrying in France. Thus metallic substances are not covered by this initiative.

Theme

Land use planning: The departmental quarry scheme is an instrument which serves to define the areas and optimal scope of extraction operations as well as to anticipate the development of operations in order to determine the future of the sites once operations have been completed. The quarry schemes also inform economic strategies and policies taken by public authorities at local and departmental level.

Schemes take into account rural and urban development planning projects and prioritise above all an efficient localisation of raw material resources whilst guaranteeing access to these resources.

Reasons for Highlighting this Project

The departmental quarry schemes synthesise forward planning activities in terms of departmental land use for urban and rural development purposes and the impact of quarries on the environment. The initiative as a whole aims to address challenges arising from the contradictions between environmental preservation and development needs. For instance, the modification of alluvial valleys resulting from extraction activity is a major environmental concern which is usually addressed in the schemes.

The Act imposes on aggregate producers a number of conditions under which extraction activities can be undertaken, incorporating the concept of sustainable development in managing a non-renewable resource. The industry must fully comply with principles of environment protection but also with economic imperatives. In many respects, the exploitation of raw material deposits reveals a number of contradictions and conflicts that are commonly encountered in environmental management and these schemes aim to overcome possible conflicts of interest between

development imperatives and landscape preservation, and the contradictions that may arise between current supply and demand in aggregates.

Last but not least, the spirit of the 1993 Act is to minimise the visual impacts of quarry extraction activities in an effort to preserve natural habitats and to avoid the relocation of residents. It requires the raw materials extraction industry to guarantee the natural regeneration of the area already exploited as to limit the visual impact of extraction activities on landscapes.

Description

Overview

Departments are required to produce plans for quarried minerals. At the level of the departments, an analysis has to be conducted of the need for natural materials (i.e. industrial minerals, construction minerals) the geological possibilities and the production capacity. These plans must include information on the supply of, and demand for, quarried minerals, and in particular for sand and gravel. This aids identification of possible new sources of aggregates, in order to meet existing shortages.

These schemes must include:

- an inventory of known resources,
- an analysis of the Department's likely demand for minerals,
- the impact of existing quarries on the environment,
- an evaluation of future local needs, in order to eventually take into account the particular national needs,
- the setting of objectives to ensure the wise use of resources and to minimise impacts on the environment,
- an examination of transport networks and preferential routes and transport types (e.g. road, rail and waterways) for transporting minerals,
- environmentally protected areas,
- preferred after-use of mineral extraction sites (such as forest, leisure, agriculture, re-development, wetland, etc.).

For gravel and crushed rock, inter-regional evaluations have also to be conducted, as there are areas with a large consumption. A typical example is the Paris basin.

Aims and processes

Departmental quarry schemes take into account raw material requirements across different industries, the protection of sensitive landscapes and of natural environments, a well-balanced use of resource-rich natural habitats and an efficient use of resources. Project objectives of departmental plans revised careers are divided into strategic objectives, from which are declined operational objectives.

Some of the most recurrent strategic objectives include: guaranteeing security of supply for the department and its central areas of population; avoiding imbalances in the supply of aggregates between neighbouring departments/regions; ensuring access to resources of national importance; intensifying efforts to preserve the environment in quarrying activities.

The design of a quarry scheme requires a concerted effort at departmental level. There are four working groups to this effect with a special focus on different topics (inventory of resources with government experts; evaluation of resource requirements with local authorities and departmental

councils, identification of environmental issues with NGOs; and security of supply and transportation with relevant local level and industry representatives).

The raw materials industry contributes thus to the design of the schemes. The industrial needs of other sectors (infrastructure and construction) are taken into account. Schemes are designed so as to correspond as much as possible to the economic realities the different extractive industries are faced with. Rural or urban development projects at municipal and departmental level are also duly taken into account in the design of these schemes. There is however no direct link with improvements in authorisation processes. There is therefore little impact on the process for the delivery of authorisations.

Departmental quarry schemes must be consistent with the requirements of urban and rural development schemes and water management schemes (SDAGEs), particularly in terms of the catchment basin area. Most schemes make it necessary to preserve water resources and the integrity of the valleys. Preservation requires, from the moment the quarry is built up to its redevelopment, the protection of catchment basins and of groundwater. Compliance with the preservation of the integrity of valleys requires either the maintenance or restoration of a vegetated landscape quality as far as is possible.

Schemes allow for the identification of areas in which the establishment of quarries is not possible due to their strong environmental protection considerations. Decisions for building a quarry must meet a series of environmental criteria. Schemes allow efficient localisation for the building of quarries: some areas require environmental compensation and others are called 'white areas' where building requires no environmental compensation.

The working groups advise policy makers on decisions regarding the establishment of quarries. Policy makers may also have a better understanding of the costs of authorizations through these schemes. All these working groups are relatively strongly committed to environmental protection.

Within each department at the municipal level, the identification of potential extraction areas result from coordination between departmental urban development planning and departmental quarry schemes. However it is ultimately up to local councils to define and delimit these areas and to negotiate rehabilitation is accordance with municipal-level urban planning.

State funding is channelled to the decentralized services of the central government. The cost of developing a departmental quarry scheme ranges between €40k to €80k according to the size and the raw material resources of the department. The revision of a departmental scheme after 10 years costs about the same price because it is the same procedure.

The budgetary allocation for the initiative as whole is of 400 million Euros per year. According to rules of good governance, the Ministry caps its contingency funding to €20k per year and per department over the lifecycle of a scheme so as to help a greater number of departments at any one time.

Part of the funding is supported by the BRGM (Bureau of Geological and Mining Research) in cases where it contributes to the design of a scheme. The 96 metropolitan departments of France are involved in this initiative as well as 6 DOM (Departements d'Outre Mer).

Since the adoption of the initiative, the economic downturn has resulted in a drop in demand for aggregates. Currently, despite the economic recovery, there is stagnation in production. Due to transportation costs, extraction operations are usually preferably performed nearby areas of consumption. This is due to the high costs of road transportation, which remains the preferred type of transport for the flexibility it offers compared to other types of transport.

On average, an extraction site will be located 50 km away from the area where raw material supplies are delivered. The location of aggregate extraction sites is another major source of conflict which the initiative has aimed to address. Often located in large valleys, activities extractions are mostly performed in shallow water areas (and more and more due to the rise in ground water levels) which can potentially create problems for agricultural and construction activities as well as in terms of landscaping.

Rural areas have land that is still very affordable due to the difficulties encountered by the agricultural world. In a rural context, the adaptation of the habitat to extraction activities is met with little protest. Compared to the rate of urban expansion (business areas, suburban habitat, and infrastructure), the rate of spatial use in extraction activities is typically higher. These areas are therefore far less affordable and sometimes protected: certain regional urbanism plans require the protection of agricultural areas or green spaces near built-up areas and conurbations. Nuisance generated by extraction activities is barely tolerated by the residents and operations linked to the adaptation of the land for extraction purposes are also more stringent.

Shift from departments to regions

With all these substantial evolutions occurring over the past 20 years, the scope of the 1992 Act governing quarry schemes will soon be extended to the regional level in order to better take into account raw material flows and to improve coordination with land use planning activities. These changes will come into force in early 2014.

The upcoming legislative changes which will apply to future schemes include the resourcing of marine aggregates and recycled materials from construction waste. The entire initiative's contribution to the sustainable use of resources will be improved. These changes aim to offset the increase in resource requirements through the recycling of aggregates (though this is not applicable to all materials).

Building quarries at regional level will allow for a better consideration of rural and urban development projects at regional level. Transportation and resource management policies will be better coordinated through the regional level. The raw material needs of other regions will also be better taken into account. This reform was designed to secure the supply of raw materials on a national scale as well as effective access to deposits.

This change in the law is the result of a government-led consultation launched in 2011 and which ended in 2012. The framework consists of four areas of improvement through which the initiative is carried out: sustainable and efficient use of natural resources; effective forecast of raw material requirements at regional and national level; protection of the environment, of landscapes and sensitive natural habitats; good governance in terms of land use planning. This initiative fits into the wider national strategy for sustainable development.

Promoting resource conservation and managing environmental and landscape aspects are the main challenges that the reformed initiative aims to tackle. The reformed initiative will, amongst other things, merge elements of quarry scheme management with the use of construction waste.

Alluvial aggregate resources still remain relatively inexpensive and of fairly good quality. The cost of aggregates remains lower than that of crushed/demolition materials. This however leads to the systematic use of aggregates and also to extraction wastage. The financial pressures resulting from a drop in the demand for construction materials have led to a concentration within the aggregates sector, and today production is concentrated amongst a handful of large companies. However, this concentration has resulted in the abandonment of several extraction areas without leading to smaller companies focusing their activity on other types of materials. It is in this context that the

reformed initiative aims to enhance the sustainable use of aggregates by promoting recycled demolition materials as a safe or even safer alternative in the manufacturing of various types of concrete.

There is also the desire to better articulate quarry schemes with urban planning documents in the amended Act, which will enter into force in early 2014. There are also measures to protect mineral deposits in urban planning documents. The reformed initiative promotes measures already taken by the EU on the protection of resources and regional rural or urban development. Improvements in terms of transportation should propose alternatives to road transport for raw materials (railways, waterways). The initiative allows a better distribution of efforts in terms of extraction and a system of inter-regional support so as to avoid the concentration of extraction activities in the same locations. This is particularly relevant as regards marine aggregates.

Through the regional quarry schemes, the Ministry for Sustainable Development aims to achieve economies of scale. It is estimated that decentralized state services that have piloted the regional scheme have spent between €100k and €200k on a scheme covering 4 to 6 departments. These figures are still very much provisional as they do not account for the entire development a regional scheme.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

The initiative has over the years promoted the extraction of other natural materials such as marine aggregates, granite and limestone. Their extraction has a lesser environmental impact, although the nuisance associated with their extraction is far from negligible (longer periods of extraction, high share of non-recyclable materials). Their increased use has involved a reorganisation of the supply chain geared towards sustainability and efficiency from the extraction of materials to the development of new techniques in the construction sector.

In terms of the recycling of existing materials, major efforts have been made by public and private policy players in this area thanks to the initiative. Considerable progress has been made within the sector in terms of recycling: e.g. 98% of the production of glass is through recycling. Schemes have led to the design of charters between construction sector developers and public authorities for the sustainable management of aggregates highlighting the role of both public and private actors in the promotion of recycled materials. These various initiatives propose as many interesting alternatives to landfilling.

There is growing awareness of the need for the sustainable and economical use of resources and progress has already been made in this respect. The French Ministry for sustainable development aims for the best possible use of each deposit as regards aggregates. Research has been conducted by the BRGM (National Bureau of Geological and Mining Research) to establish typologies of preferential use depending on the nature of the materials (aggregates). This has had a positive effect on the efficiency of extraction operations. For minerals, it is rather innovative techniques that are used to improve the performance of the industry in terms of sustainable use of resources.

Features relating to the Wider Adoption of the Good Practice

The main lesson drawn from this initiative is the importance of achieving convergence between economic interests and environmental interests. Consultations with the industry and environmental players to decide where quarries should be established can only improve policymaking in this area. The importance given to the recycling of construction waste has been identified as a key factor to

reconcile economic and environmental interests. It is also possible to link these schemes with water management schemes (in accordance with the Framework Directive on water).

It is possible thanks to the initiative to set out different scenarios as regards costs generated by the exploitation of resources and the implantation of quarries. It is thus possible to make informed decisions in economic matters for regional schemes.

In terms of performance measurement, there only exist very few ad-hoc tools. This has been identified as the major weakness of the initiative. It remains therefore difficult to collate the data, for example on raw material needs, to have an overview of the extent to which efficiency or competitiveness in raw material extraction has improved. These schemes require the design and implementation of monitoring indicators. However, the central government has no budget to appoint a service provider to monitor scheme indicators. The need to develop monitoring indicators has been identified as critical. For instance, the establishment of a central database on resource requirements would greatly facilitate the development of the schemes.

The main principles of the initiative are transferable to other countries, mainly because it aims to balance environmental and economic interests, to encourage the development of sustainable transportation whilst securing raw materials supply.

It is important to strengthen the industry taking into account its environmental impacts because it leads to greater acceptance from the public towards extraction and quarrying projects. This is part of a wider sustainable development policy at national level.

Improvements in terms of quarry management and in terms of the sustainable use of alluvial aggregates have been achieved by public policy players at departmental level thanks to these schemes which have spawned the setting of construction standards, incentives for recycling and sustainable use of natural resources, through interactions between focus groups bringing together around local projects government officials, environmental and residents' associations and industry players. Quarry management schemes constitute an area of experimentation for sustainable development and land use. The imperative of satisfying economic development needs requires the constant resourcing of raw materials, and the schemes aim to reconcile these disparate objectives whilst minimising environmental impacts.

Further Information

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CASE 21 - MINERALS DEVELOPMENT, IRELAND

Introduction

The Minerals Development Acts 1940 to 1999 govern mineral exploration and development in Ireland. Exploration and extraction in the sector are regulated by the Exploration and Mining Division of the Department of Communications, Energy and Natural Resources (hereafter "DCENR"). In this context, minerals exclude stone, sand, gravel and clay, peat and petroleum.

Exploration is undertaken under a simple, user-friendly licensing system, that provides for flexibility of exploration activity while maximising "on the ground" expenditure and stimulating grass-roots exploration for a diversity of minerals. This is done through a **Prospecting Licence** (PL)**,** which is typically issued within four months of application. There are currently 659 Prospecting Licences issued. The PL gives the holder the right to explore for certain specific minerals. Only holders of current licences are considered for Mining Facilities to develop such minerals within the licence area, whether the minerals are State-owned or privately owned. A PL typically covers some 35 sq. km and is normally issued for six years, with the option of renewal if the holder has met the agreed requirements.

The development of permitting process is straightforward and designed to achieve **environmentally responsible mining, whilst taking into account issues of long-term economic viability.** Mining requires a **State Mining Facility** under the Minerals Development Acts. This is normally granted when permits have been obtained from two other agencies. These permits are **Planning Permission** from the Local Authority and an **Integrated Pollution Prevention Control (IPPC)** licence from the Environmental Protection Agency (EPA). Close contact is maintained between the three agencies responsible for issuing licences. The time taken from application to issue for large deposits should be within 18 months. The promotion of the exploration sector for metals and minerals is considered to be strategically important in terms of employment creation and in attracting and maintaining inward investment in Ireland.

Theme

Permits and Authorisation, but on the basis of a sound regulatory framework and with elements of good governance also.

Reasons for Highlighting this Project

The reasons for highlighting this project are that it shows the advantages of putting in place a robust legislative system that is transparent and efficient. The case also provides insights into effective cooperation with other agencies, in particular at the application and closure stages of mining.

Description

Overview

DCENR is responsible for the application of the Minerals Development Acts to mineral exploration and development; encouragement of the early identification and responsible development by private investors of Ireland's minerals deposits in accordance with best international practice; and enhancing the attractiveness of Ireland for international and national minerals investment through active promotional measures. In this context, "minerals" excludes stone, sand, gravel and clay, peat and petroleum. Exploration and development are carried out by private industry under leases or

licences from the State. The exclusive right to work all minerals under the Acts, regardless of ownership, was vested in the Minister by the Minerals Development Act 1979, although exception was made for minerals, which were already being worked at the time. The 1979 Act provides that, where the Minister licences third parties to work private minerals, compensation is payable to the mineral owner.

Procedures for obtaining a license

The licensing system put in place in Ireland appears to be both efficient and effective, and industry-friendly. Indeed, in an annual survey by the Fraser Institute focused on the metals and mining industry, Ireland ranks sixth in the world in terms of how industry perceives the overall business–friendliness of the regulatory and licensing and permitting environment. The Exploration and Mining Division (EMD) within DCENR is responsible for issuing Prospecting Licences and should a viable deposit be found, for granting State Mining Facilities (SMF).

Prospecting Licences are issued under the Minerals Development Acts 1940 to 1999 for a period of six years for specified minerals and can be renewed for a further six years, and thereafter every two years. The time taken to award a PL is approximately four to six months. Under an active PL, a minimum work programme and level of minimum expenditure is required, details of which are agreed with the licensee. Progressively increased work and expenditure commitments are required on licence renewal. Work reports are required every two years, and are held confidential for six years or until surrender of the licence (if earlier). However, an exception is regional airborne surveys, the data from which is made public after four years except over ground still held by the company that commissioned the survey. Third party insurance, indemnifying the Minister, is required for the period of the licence. Licensees should respect the wishes of the landowners regarding access, and be environmentally responsible and comply with environmental regulations.

Staff from the Exploration and Mining Division maintain close field-based contact in order to keep up to date on exploration programmes and to ensure that environmental aspects are satisfactory, and provide advice as required.

The development permitting process is designed to achieve environmentally responsible mining whilst at the same time ensuring long term economic viability. Development permitting is undertaken through a **State Mining Facility** under the Minerals Development Acts. Mining also requires Planning Permission from the Local Authority and an Integrated Pollution Prevention Control (IPPC) licence from the Environmental Protection Agency (EPA). Close contact is maintained between the three agencies. Permits required for development may be applied for and can be processed in parallel, although the State Mining Facility is normally granted when the other two permits have been obtained. The time taken from application to issue for large deposits to obtain all three permits ranges from between 2 to 4 years. Mining is subject to Environmental Impact Assessment (EIA) through the planning legislation and the Minister for CENR is a statutory consultee in that process.

The Minerals Development Acts provide for individual agreement of the terms for each State Mining Facility. The general conditions are usually relatively similar. These include:

- A fixed term related to the predicted length of the operation;
- Financial payments, normally consisting of a fixed annual fee and a royalty payment related to tonnage produced or revenue; royalties are individually agreed. The fixed annual fee is usually offset against royalties for the relevant period;
- Efficient and continuous working to ensure optimum development;
- Provisions to protect the rights and safety of third parties;

- Sureties to ensure that the site can be fully rehabilitated on closure;
- In cases involving private minerals, indemnification of the Minister against successful compensation claims.

Applicants for State Mining Facilities are required to demonstrate that they have the necessary financial and technical capability to work the minerals effectively, and provide for orderly rehabilitation of the mine area when mining has ceased. They are also required to show that an adequate reserve of minerals has been defined, such as can be reasonably expected to support a viable mining operation, and that they have made arrangements to obtain any necessary ancillary rights, such as access and surface rights. Mine inspections are carried out regularly to ensure that the terms of the SMF are complied with.

Fees payable for both PLs and SMFs are available on the website. Royalties are agreed on a case by case basis and currently range from 1.75% to 3.75% NSR for metalliferous minerals, depending on whether the minerals are privately or State owned. These arrangements are documented in the Minister's Report to the Oireachtas[40], published every six months. Royalties for lower value bulk minerals are normally set on a price per tonne basis.

Interagency cooperation is important in order to ensure that the licensing process is as efficient as possible, industry-friendly, whilst at the same time allowing for the concerns of local communities to be raised and to ensure that high environmental standards are maintained and environmental legislation is complied with. To this end, DCENR works closely with the Environmental Protection Agency (EPA) and the relevant Local Authority and in the interest of transparency, all prospective PLs and SMFs are advertised to allow submission of objections or comment prior to any award.

However, interview feedback from industry suggested that although the licensing system works well overall, it can take time to deal with several different bodies responsible for different aspects of the licensing and planning system. An industry representative commented that "Not all the bodies involved talk to one another regularly enough, and we would prefer to deal with a single body but overall, the licensing system works well".

Reports are published every six months ending 30th June and 31st December of each year, which list the current State Mining Facilities and Prospecting Licence Areas. Every three months, additional publications list those PL Areas that are open for application under competition.

Industry feedback suggests that information and data made available online about previous prospecting is helpful since this "extends back to the 1960s and sometimes even further". A further value added from an industry point of view, was that data can be readily digitized and integrated into companies' GIS systems. The application procedure is transparent and reasonably quick. A particular value added was that the department provides advice not only on the licensing scheme that it administers but also on environmental permitting and legislative requirements and on archaeological-related matters.

Economic and employment benefits of raw materials

DCENR recently commissioned an independent study[41] on the economic contribution of the mineral exploration and mining sector in Ireland. The overall conclusion of the study indicates;

[40] Minister's Report to the Oireachtas

[41] Assessment of Economic Contribution of Mineral Exploration and Mining in Ireland, Indecon International Economic Consultants

- 'That the economic value added contribution of the mining and mineral exploration industry to the Irish economy is considerable and far-reaching.'
- Of particular importance is the 3,306 jobs supported both directly and indirectly by mining and exploration activities.
- That the economy-wide expenditure impact is estimated at €809.7 million, paying €56.6 million in Exchequer Contributions (including Local Authority rates, etc) and some €9 million in Royalties, Licence Fees, etc.

The mining sector also provides employment in less developed regions, especially in areas of Ireland that are more sparsely populated. The Indecon report found that 1260 people are directly employed in mining activities, with further indirect employment benefits, through spill-overs and income multipliers. By its nature, mining typically takes place in less developed areas of Ireland, or areas of low employment, and thus contributes to regional development. The PL system offers incentives to encourage exploration in areas where no exploration activities have taken place for a considerable time period. Examples are less onerous work and expenditure requirements under the terms of the PL.

Evaluation and monitoring

Although no formal evaluations have been undertaken to evaluate the effectiveness of the licensing system, internal monitoring arrangements have been put in place by DCENR that involve continual internal review, not only of licensing application procedures, but also of how DCENR can best monitor license holders and ensure that any information and data gathered through exploration activities is fed back to industry through an open data policy on surrendered licenses (see the parallel case study on the information and knowledge management theme (Case 8: DCENR Exploration Data Release Initiative).

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

The licensing system in Ireland has helped to promote the sustainable development of the minerals and metals mining industry. Overall, there are a large number of Prospecting Licences that have been issued and a significant amount of exploration activity, increasing the potential for new mineral discoveries. This has helped to support the efficient development of new sustainable raw materials resources. Such development can be described as sustainable in that:

- Mineral concentrates are exported to other EU countries, thereby reducing Europe's dependency on third countries:
- The State take from mining in the form of taxes and royalties enhances the State's provision of benefits locally and nationally and the spend by mining companies and their employees contribute to the local and national economies;
- Potential environmental impacts of the development are identified and mitigated through the EIA process.

EMD also plays a role in promoting awareness about the metals and mining industry in Ireland and its importance to the Irish economy in order to help strengthen the sector's visibility and to promote societal and community acceptance of mining-related activities.

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Features relating to the wider adoption of the good practice

There are a number of features of the licensing scheme that represent good practice. These are, in summary:

- **The imperative of a supportive regulatory framework to underpin the licensing and permit system. Strong co-ordination and co-operation** between the different bodies responsible for SMF, planning and environmental permitting in order to ensure that decision-making and procedures are efficient and transparent.
- **The ability for some permitting and licensing activities to take place in parallel, rather than sequentially**. This reduces the timeframe between a company making an application and it being granted the necessary licences and permits. This is vital because lead times are long.
- **An emphasis on transparency in order to streamline procedures and timeframes for licensing** – this is achieved by publishing the names of licensees and the geographic coverage of PL Areas in advance,
- **Flexibility for licensees as regards meeting commitments under Prospecting Licences**- the absence of a rigid approach and flexibility to roll over commitments in exceptional circumstances by negotiation was viewed positively by industry.
- **Revenue generation through a royalty-based model.** Royalties are only due from companies that make the transition from exploration to production. The licensing system in Ireland generated €9 million in royalties and fees in 2012, in addition to corporation tax which is levied at 25% for mining profits, double the standard rate for other trading profits.
- **The requirement to make exploration reports available to other companies once Prospecting Licences have been surrendered** – this brings about efficiency savings for exploration companies considering investing in a relinquished licence, since under the DCENR data release initiative (see separate case study), information and company reports are available for free.

In transferring an approach from one EU country to another, there are always challenges in adapting the approach to country-specific circumstances.

The licensing system put in place in Ireland has proven to work very well over a period of years. As such, this provides a potentially replicable model. DCENR is willing to provide information to interested parties as to how the licensing system was set up and the way in which it operates once Prospecting Licences have been granted to exploration companies. The importance of having a legal framework in place to support mineral exploration is seen as a pre-requisite before the Irish approach can be adapted and implemented in other EU countries.

Further Information

Further information can be obtained from the Department of Communications, Energy and Natural Resources:

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CASE 22 – MODEL AGREEMENT BETWEEN SUPPORT COMMITTEES AND RESIDENTS, BELGIUM

Introduction

Support committees involving local residents and formed in response to quarry operations started to emerge in Wallonia in the late 1970s. Today many extraction companies and other key stakeholders meet regularly with their local residents' associations in such committees. These committees at first did not constitute an arrangement formalised in legislation but today many of them are formally created when an environmental permit is granted to extraction companies by the public authorities. These support committees are in fact initially referred to in agreements or charters agreed by different groups of stakeholders, including local residents. Today, the Environmental Code of Wallonia explicitly provides for the establishment of support committees for certain quarry extraction projects activities.

The purpose of support committees is periodically to gather representatives of the three parties concerned by extraction activity (public authority, local residents and the company) in order to negotiate solutions to environmental problems caused by the industry. Prior to the establishment of a support committee, the regional advisory committee on quarrying (CRAEC: Commission régionale d'avis pour l'expoitation des carrières) publishes a model agreement or charter that companies and local residents agree to, with local authorities being responsible for ensuring that its principles are observed by both parties if the authorisation is granted. Under a typical model agreement or charter, the company undertakes to control its environmental impacts and to implement a constructive consultation process. The local residents, for their part, undertake to respect the consultation rules that have been agreed.

Model agreements (also known as charters) are based on the principle of mutual commitments and are the reference document on which support committees involving local residents are established. The interests of the different stakeholder groups at a local level are articulated around a model agreement or charter, a key document which is drafted prior to the granting of permits and authorisations.

In practice, support committees only become fully operational after an authorisation has been granted. But the model agreement or charter usually determines in advance the composition of those committees, and it is usually good practice for the committee members to get together and start a dialogue prior to the granting of an authorisation.

Theme

Permits and Authorisations, with aspects of good governance.

Reasons for Highlighting this Project

The practices which have developed in recent years whereby quarrying companies seek to foster a dialogue with local communities prior to the granting of an authorisation and public authorities show the extent of their commitment to improving the sustainability of the whole sector's industrial processes. In light of this, the extractive industry in Wallonia has been quite successful in improving its image by forming solid partnerships with a wide range of local stakeholders, including residents. Quarrying companies have understood the importance of fostering a dialogue as early as possible so as to settle a conflict which will only be more difficult to resolve at a later stage.

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By means of these model agreements establishing partnerships with local stakeholders and by the compliance with the Walloon Region's comprehensive legal framework (notably with regard to the environment and regional planning), the extractive industry has put itself in a position to be able contribute to the sustainable development of the region. There is in fact evidence to show that in recent years the extractive industry in Wallonia has improved its environmental performance and its competitiveness.

Description

Model agreements

Model agreements or charters typically set out the pledges made by signatory companies to control their environmental impacts, to implement a constructive dialogue, and develop their environmental competence. On the other hand they also set out the commitments of residents to respect defined rules of consultation. Once an authorisation has been granted, charters are under the control of the local authority (or authorities) that are in charge of ensuring that the principles are observed by all parties.

These charters initially set out a non-formal partnership between various key local-level stakeholders, including the company, residents and owners of neighbouring property, municipal or local authorities, and a range of other relevant partners (Directorate General for transport and urban planning, industry federations). These partnerships become fully operational support committees in cases where the competent authorities deliver an authorisation for a quarrying project.

Since the minimisation of impacts resulting from raw material extraction is the foundation of any environmental initiative, companies agree to a charter under which they pledge to ensure that their activities do not affect ecosystems (by minimising the environmental impacts on water, air, landscape and biodiversity) or local residents' quality of life (by reducing noise emissions, vibration and dust). Through such charters, companies agree to implement a set of good practices to limit their environmental impacts through the use of the best available technology in consideration of the funds they have at their disposal.

Environmental charters can be articulated in different ways according to the objects referred to, such as the coverage of all the environmental impacts of a quarry site or of a quarry basin, or the targeting of a specific problem on a site or of a particular problem common to several sites within a quarry basin. For quarry basins in particular, stakeholders are advised to prepare several special charters, each focused on a specific topic such as transportation problems, rather than trying to cover everything in a single document.

A charter describes technically the basic activities common to the entire sector, which are then addressed one by one specifically from an environmental perspective and from a geological perspective (e.g. special features of the extraction site). The aim here is to build a framework which will guarantee good communication and transparent negotiation between the different stakeholder groups.

These charters are valid in a local context. Besides the general principles systematically included in the charters (as described above), there are specific contingencies which vary according to the local context and the length of the operations or projects. These contingencies and other specific principles can be adjusted over time as is necessary. Indeed, on the one hand industrial practices are in constant evolution, and on the other the vicinity is likely to change, in numbers, in its composition, its aspirations and in the organisation of its representation.

There is no absolute rule or method for determining who is considered as a local resident in the formation of support committees. Public surveys are usually conducted by local authorities to establish areas where residents might be directly affected by raw material resourcing operations, but they are often not the most appropriate reference areas to address specific problems such as blasting and noise nuisances, transport nuisances, or dust. The radius is thus variable and may be different depending on the type of operations to be conducted, and it can also be influenced by the direction of prevailing winds and a series of other local circumstances such as territorial continuity within the local area. In the formation of support committees, the importance here is to establish consistent rules to determine local residents' exposure to operations and not to create discrimination within a neighbourhood. The consistent determination of a neighbourhood radius is useful for enabling residents to organise themselves appropriately as associations.

Support committees

As mentioned previously, the primary function of support committees (also known as consultative committees, liaison committees) is periodically to gather representatives of the three main parties concerned by the operations of extraction companies (businesses, public local authorities, and residents) to negotiate on solutions to minimise the various environmental impacts caused by quarrying projects, and to communicate these solutions to the competent authorities responsible for delivering authorisations.

Whether they have been formalised or not (i.e. before or after an authorisation has been granted), support committees have a consultative function and, as such, have no decisional powers. It is ultimately local officials and regional parliament members within Wallonia that set environmental conditions in the granting of environmental permits prior to formalisation, and it is then regional administrative bodies that are in charge of monitoring compliance with these conditions once the support committee is fully operational. It is however generally the case that the solutions proposed by the non-formal support committees will often be taken up by the authorities as well as influence authorisation granting decisions, as they are solutions that have been accepted by all the interested parties.

It must be noted that support committees only deal with environmental issues that concern residents. Other issues which may have an environmental dimension such as workers' health are addressed by other specific bodies (e.g. Committee for Prevention and Protection at Work). Support committees also only takes an interest in company-specific standards to be applied to a particular project or activity, and do not deal with standards applicable to all the companies in the raw materials extraction industry (which is the role of the CRAEC: Commission régionale d'avis pour l'exploitation des carrières).

Once formalised and fully operational, these support committees also allow extraction companies to consult other parties officially and in a more transparent way in cases where ad-hoc measures or operations are needed, and to contact and inform effectively other parties in the case of incidents or accidents. The designation of contact persons representing local residents proves to be very useful in this particular regard. The practice of direct relationships with residents on a day-to-day basis therefore coexists with official communication and correspondence.

The main benefits generated by these support committees are that residents can report directly to the operating companies and to the relevant environmental authorities of the various problems they may encounter which result directly from quarry extraction through their representatives. As such the number of problems can be solved more easily and faster than through mail correspondence between residents and authorities, for instance.

Also, conflicts are solved through negotiation rather than through other channels (e.g. judicial processes or the media). Negotiations give rise to agreements between all the parties involved, which is always preferable to a solutions imposed from the outside. In this sense, committees are very independent in solving problems. Another considerable advantage is that the representatives of the various parties get to know each other, and therefore to trust each other in finding solutions and agreements.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

The good practice developed in model agreements (or charters) between support committees and residents has led to increased sustainability in raw material resourcing. Generally speaking, there has been a reduction of the impacts caused by atmospheric emissions generated by extraction operations in recent years. This improvement has mainly resulted from the industry's responsiveness to environmental obligations as enshrined in agreements with local authorities and residents.

With companies often pledging to make use of the best available technology in consideration of the funds they have at their disposal as part of their agreement with local residents, this allows them to develop technologically, and improve their performance in sourcing raw materials efficiently as well as their overall competitiveness. This has also been a direct influence on the decisions of the authorities competent to grant authorisation.

Overall, the extractive industry is a sector that has sought to improve its image by fostering trust with residents affected by its operations in Wallonia. The major highly industrialized quarrying companies, in particular, have the desire to be at the forefront of technological progress in the effort to protect the environment and preserve natural habitats as far as possible.

Fostering trust with local residents and other relevant stakeholders has in fact become a key determinant for obtaining authorisations. The model agreements establishing support committees have become a very useful instrument for the quarrying industry in this respect.

There are a number of examples to illustrate the progress made by the extractive industry in terms of sustainability and competitiveness thanks to model agreements leading to the creation of support committees involving local residents and stakeholders.

Since 2006, the cement and lime sectors, and the extractive industry is governed by a Sectoral Agreement (a voluntary agreement signed by the sector and the public authorities) the aim of which is to improve energy efficiency and the reduction of greenhouse gas emissions. The companies that have signed the Sectoral Agreement have undertaken by 2012 to improve their energy efficiency by 8.6% and to reduce their C02 emissions by 8.8%. Since 2007, the sector has been improving its performance constantly and in 2009 it already surpassed the commitments it made under the Sectoral Agreement.

Agriculture and quarrying are two areas of human activity that are essential to society but that are carried on in the same physical space. In July 2007, the Belgian Federation of Extractive Industries (FEDIEX) and the Walloon Federation of Agriculture concluded a Cooperation Agreement between the two sectors. This Agreement is intended to both encourage consultation among producers at the local level throughout the process of operating the sites, and to reinforce permanent dialogue between the signatory Federations. A joint consultative committee is responsible for monitoring the implementation of the Agreement, taking on any problems related to coexistence and fulfilling a mediating role if necessary. Furthermore, in the event of conflicts or misunderstandings before,

during or after extraction, the FEDIEX and the Walloon Federation of Agriculture offer to their members a mediation service that is neutral, flexible and free of charge, and that has in many cases of dispute made it possible to offer concrete solutions.

Features relating to the Wider Adoption of the Good Practice

It is good practice for the support committee to meet with local residents prior to the granting of an authorisation, even if it only becomes fully operational once an authorisation has been granted.

Generally speaking, support committees help companies to integrate themselves into their social environment through the social relations they foster around a common project. As such, local residents can learn more about the company operating in their area which increases their acceptance of the activities or projects undertaken. Through the partnership process, companies are better integrated within and accepted by the local community. There is a sense of trust which develops whereby companies commit to meeting set environmental performance targets and give themselves the means to do so.

In terms of social acceptance, companies that are party to these partnerships submit through the charter proposals that are in line with the expectations and objectives of other regional stakeholders. To this end, companies have a responsibility for guaranteeing a constructive dialogue prior to the start of a quarrying project as well as throughout the lifecycle of a project. This particular commitment is absolutely critical as exchanges between stakeholders within support committees are expected to go beyond institutional or formal communication, and to focus on interactive relationships for the solving of issues on a regular basis.

From the company's perspective, the adoption of a charter involves making a commitment to control its environmental impacts, implement a constructive dialogue, and develop environmental competence. For local residents and property owners, the adoption of a charter involves making a commitment to respect the rules of dialogue as they are defined.

Companies are subject to different levels of commitment, including compliance with standard conditions for exploitation operations applicable to companies operating in Wallonia, commitments made in response to local demands or pressures, or voluntary initiatives to improve environmental performance.

Companies that take part in support committees are encouraged to develop their capacity to manage their environmental responsibilities. To this end, companies may appoint an external auditor charged with monitoring compliance with the specific environmental commitments of the charter as well as with a common set of best practices defined in a repository on Environmental Progress (Référentiel de Progrès Environnemental).

For local level public authorities, their commitment is to foster exchanges between the different stakeholder groups by offering a platform for dialogue, monitor overall compliance with commitments from all parties, and seek compromises in cases where talks were to break down.

For other potential partners such as urban developers or trade associations, commitments are circumstantial, but they must be clearly formalised in the charter in the same way as for the company.

The main advantage of these support committees is that they provide the ideal platform for a constructive dialogue the residents express their observations or complaints and the developers inform them of their mode of operation, the problems they encounter and the solutions being envisaged. Certainly, disagreements sometimes remain, but generally speaking this arrangement makes it possible for parties with conflicting interests to find solutions together.

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Further Information

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Good Practice Cases – Case 23

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CASE 23 – THE CONCESSIONS PROCEDURE UNDER ACT NO. 43 ON MINING, HUNGARY

Introduction

Prior to the introduction of the Mining Act (1993) in Hungary, land was offered to mining firms on a first come first served basis. The introduction of the Mining Act sought to stabilise the process through a concessions procedure. Under the Act, relevant raw materials are owned by the state and are only offered to firms when deemed appropriate through a tender procedure. If awarded the concession, firms are granted a 35 year period to seek approval of exploration and exploitation activities. This offers mining companies some stability and a generous timeframe to plan for future business investments.

Theme

Permits and authorisation

The background to the permits and authorisation procedures considered is a legal and administrative framework that operates through the granting of concessions. There are therefore elements relating to the policy and regulatory framework that are a significant part of this good practice case.

Reasons for Highlighting this Project

This case provides an example of how mining authorities have aimed to improve the permits and authorisation process. Prior to the of granting of mining licenses, the Hungarian concessions procedure facilitates consultation with government stakeholders to assess the acceptability of whether land should be tendered as a potential mining opportunity. Firms have rights to awarded concessions over a significant duration, which offers some stability for future business planning activities.

Hungary's mining industry has undergone transformation in the last 20 years.

Description

The Hungarian mining industry has experienced radical change in the last twenty years. In the early 1990s, the large state owned companies in the fossil fuel and metallic ore sector collapsed and/or were transformed into private companies and many mines closed. The aggregates sector and the industrial minerals companies which was characterised mainly by SMEs adapted more easily to the changes.

In 2008, according to the register of the Hungarian Office for Mining and Geology (HOMG) 879 mining companies carried out active minerals and geothermal energy production on 1858 mining sites. The mining royalty provided by the extractive industry (ca. EUR 400 million equivalent) is recognised as a significant contribution to the central state budget.

Today, the mining sector is particularly stable and the Hungarian Government offers concessions when there is a national interest to do so. A range of government stakeholders are placed at the centre of the decision-making of whether land is suitable for mining. This is done in the context of an appropriate (environmental) research and assessment framework. In addition, firms are offered generous timeframes for exploration and exploitation activities if awarded a concession and ultimately a mining license.

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Until the 1990s, legislation for mining activities dated back to the 1960s. Accessing minerals during this period has been perceived as slightly chaotic with interested parties gaining mining rights on a first come first served basis. In order to help stabilise the political and economic changes taking place and to provide long-term stability and a business friendly environment for industry, the Hungarian government in 1993 introduced Act No. 43 on Mining. The purpose of the Act is the regulation of:

- mineral raw material mining exploration;
- extraction of geothermal energy;
- establishment and operation of hydrocarbon transmission pipelines.

The Act defines the Government's legal basis for estimating reserves, providing geologic and technical information needed to outline concession tender conditions, determining environmental risks associated with mining, (temporarily) stopping mine production, and regulating exploration, mine operation, and mineral processing, as well as overseeing mine closures and mine site remediation.

However, the key legal tool of minerals management is the *concession procedure* (this applies to ore and energy raw material industries whereas aggregate and industrial mineral industries can directly apply for a mining license and if successful can submit exploration and exploitation plans).

The main objective of the concessions procedure is to provide a legal basis for the state (Ministry for National Development) to have exclusive ownership rights of all underground commodities. The state has the power to decide whether to open-up certain areas for the exploitation of certain minerals in the form of *open concession tenders.* This enables the state to have a planning function, with mineral exploitation being planned and controlled in the national interest on a long-term basis. Discussions have indicated that if the market cost of production of certain raw materials is higher than that of imports, then the government may cease with the concession procedures for certain raw materials until more beneficial market conditions emerge.

Other benefits of the concessions procedure have been identified. Open tenders for concessions facilitate competition between companies. One area of competition is the value of the concession fee and eventual mining royalty on minerals extracted offered to the government by the tenderer. Competition on the technical aspect of the proposal encourages innovation. Another key benefit is the length of time the selected tenderer can hold the concession for (i.e. for a maximum of 35 years). This means that after being awarded the concession, the selected company does not need to immediately initiate follow-up activities. The company can hold-on to the concession and plan according to their own needs. This may include raising funds for exploration and exploitation activities. As a result, the concession procedure offers long-term security and is perceived as business friendly.

Steps that Make-up the Concession Procedure

Until action is taken by the state, land is classified as closed for ore and energy raw materials mining. However, the state (Ministry of National Development) has the right to select land that may be appropriate for the concessions procedure. To begin with the Hungarian Office of Mining and Geology or the Hungarian Geological and Geophysical Institute survey the land (as of February 2014, a government resolution will introduce a Strategic Environmental Impact Assessment scheme at this stage). This is followed-up by a complex vulnerability and immission capacity study. The study examines the nature of the mining to be undertaken and the environmental consequences thereof. The main features of the study are indicated below.

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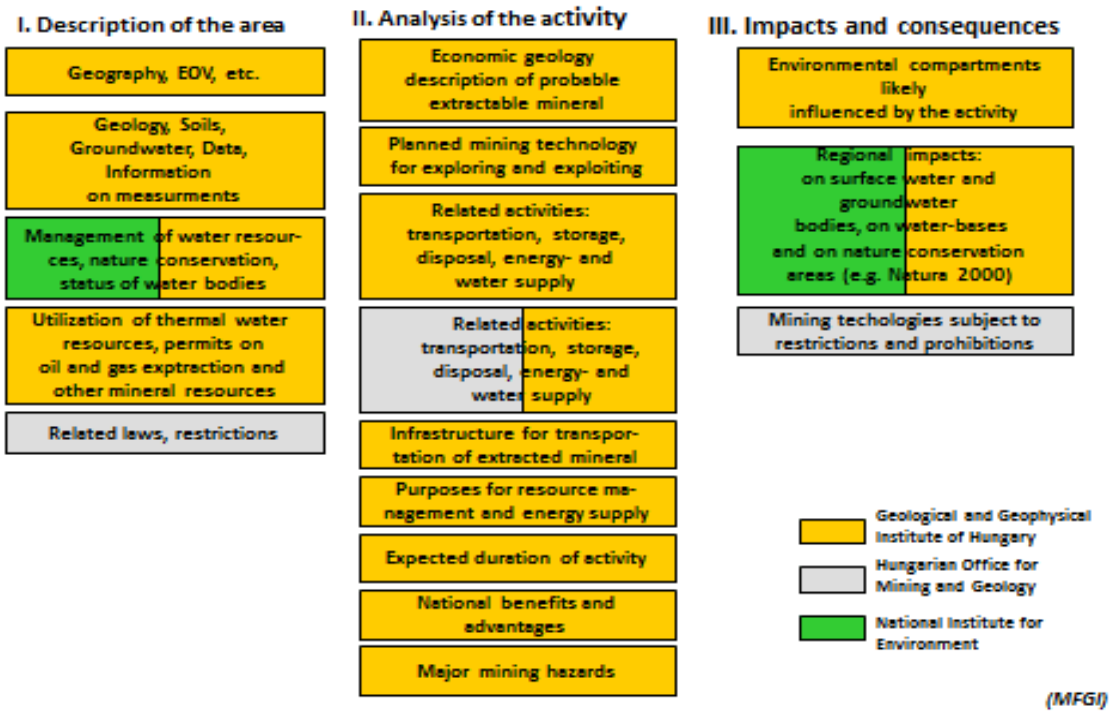
Diagram 1: Overview of a Complex Vulnerability Study and Immission Capacity Study



Source: Hungarian Office for Mining and Geology (The above diagram is subject to copyright and can only be used with the permission of the Hungarian Office for Mining and Geology).

The study is sent to a wide range of governmental stakeholders (including the National Inspectorate for Environment, Nature and Water, the National Public Health and Medical Officer Service, the County Government Office - Land and Forest Administration) for examination. The relevant national, regional and local stakeholders are interviewed and are free to issue a non-binding decision as to whether the concession is (un)acceptable.

Based on a positive confirmation from authorities, a concession tender is prepared (outlining the scope of the geographical land, its raw materials and other requirements) and a tender announcement is made by the Minister. The tender is published in the European Union's Official Journal. Tenders which meet the technical criteria are evaluated by a designated committee and the results are made public. The Minister then concludes a concession contract with the winner of the tender. The concession contract may be concluded for a period no longer than thirty-five years, which may be extended once, with not more than half of the concession contract duration. The main steps in the concession procedure are outlined below.

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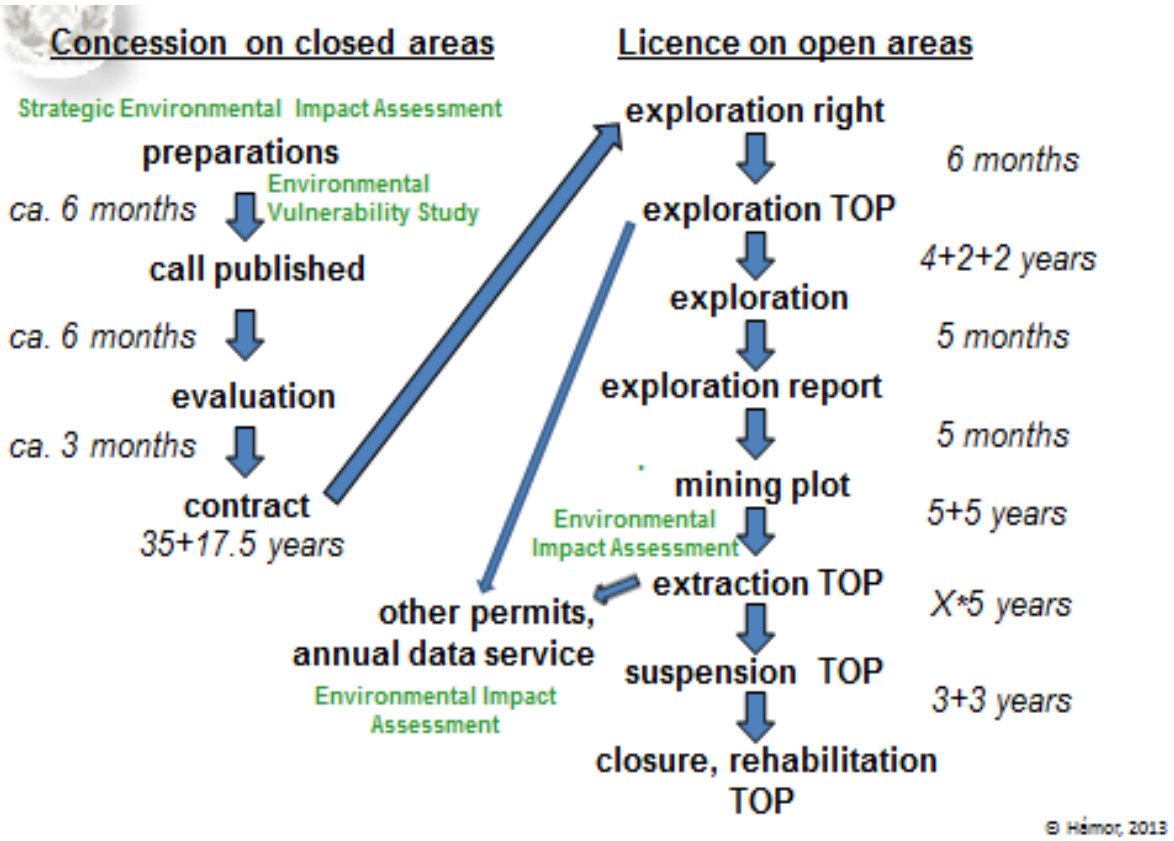
Diagram 2: Steps in the Concession and Licensing Procedure



After the concession has been granted to the selected tenderer, the company concerned is permitted to submit a license for exploration with a view to seeking the right to commence exploitation activities (see above). The company is required to submit a technical exploration plan to be approved by the mining inspectorate and later an Environmental Impact Assessment. (Given that the concessions procedure does not apply to aggregate and industrial minerals industries, companies can submit technical explorations plans directly to the mining inspectorate in order to seek approval for a license).

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

The concessions procedure enhances the competitiveness of the sector through the tendering aspect, encouraging firms to submit proposals of a high technical quality. After a tenderer is selected, only one company has the right to access the materials on the basis that a license is granted. The firm can invest considerable effort in ensuring compliance with the licence procedure (when appropriate for the firm) and if successful access the raw materials.

Features relating to the Wider Adoption of the Good Practice

The Hungarian government has sought to stabilise the exploitation of specific raw materials through the concessions procedure. When appropriate market conditions emerge, the Ministry of National Development seeks to identify areas for exploitation. However, national, regional and local government stakeholders are involved at an early stage to give their approval as to whether such

plans and sites are suitable for mining. This ensures that exploitation takes place in the right areas and under the right conditions.

The concessions procedure also facilitates competition between tenderers, enabling the government to select proposals that are high quality and offer attractive royalties.

Benefits can also be identified for selected tenderers. After the concession is awarded, the rights to the concession can be held for a significant duration and this provides stability for the firm. Companies can then plan their exploration and exploitation activities within a generous timeframe.

Further Information

Hungarian Mining Act No. 48 (1993)

http://www.mbfh.hu/home/html/index.asp?msid=1&sid=0&hkl=654&lng=1

UN- Hungarian Mining Industry Fiche

http://www.un.org/esa/dsd/dsd_aofw_ni/ni_pdfs/NationalReports/hungary/Mining.pdf

CASE 24 – PARALLEL PROCESSING OF APPLICATIONS, DENMARK

Introduction

It is frequently a problem in allowing exploration and extraction of raw materials that the necessary procedures are complex and time-consuming. This case explains how this issue has been addressed within the Danish system for granting permits for open quarries on land and on the seabed.

Under Section 8 of the Danish Raw Materials Act, the municipality to which the application for a raw materials extraction permit is submitted has a duty to present the application to other relevant authorities, responsible for issuing separate permits in case this is required according to other legislation, so that the information provided can be assessed in parallel. This is known as the municipalities' "coordination obligation" (samordningspligt). This system facilitates the process for applicants and enables the permits to be issued faster.

Theme

Improving the Permits and authorisation process (incl. environmental impact assessment related to the authorisation procedure).

Reasons for Highlighting this Project

This case illustrates an effective measure to improve the administrative processes and the access to permits through streamlining and rationalisation on the basis of the principle of coordination among the different authorities involved.

Description

The obligation for the authorities responsible for issuing raw material permits to coordinate with other authorities, in case the extraction needs authorisation under other legislation than the Raw Material Act, has existed since the 1970'ies. Other legislation that might affect the authorisation of extractions is typically to do with conservation areas, archaeology, protection of the environment, etc. This is for instance the case for legislation regarding conservation of areas of historic value or natural beauty or issues to do with public installations, town planning or building regulations.

Whereas permits used to be issued at county level by the 'amter', the respective responsibilities for issuing permits were reorganised in connection with the 2007 Municipal Reform in Denmark, which abolished the counties and reorganised the regional and municipal administration of the country, and the legislation was modified in order to take account of the new administrative processes involved in applying for permits for raw material extraction.

The Legal & Administrative Framework

The planning and administration of the extraction of raw materials is mainly governed by the **Danish Raw Material Act** (LBK no. 657 of 27/05/2013)[42], especially with regard to raw materials extracted

[42] The Act has been modified several times over the past years with the previous Act (LBK no. 950 of 24/09/2009) subsequently modified by Act no. 484 of 11.05.2010 (§3 regarding complaints procedures); Act no. 1273 of 21.12.2011 (§11 requiring public announcement of permits to happen digitally); Act no. 580 of 18.06.2012 (§13 on the Act implementing certain EU Directives), before the current Act (no. 657) was passed in May 2013.

from open quarries on land or from the seabed, such as sand, gravel, stones, granite, lime and chalk, clay, *moler* and peat, and the less common materials: flint, marl, bog iron ore and sandstone[43].

Apart from setting out the overall framework for its administration, the Act raises a number of other considerations that legally have to be respected with a view to sustainable development, such as the conservation of nature, landscapes and the environment, or various societal considerations.

The responsibility for raw material extraction is dependent on whether it takes place at sea or on land. The **Danish Nature Agency** under the Ministry of the Environment is responsible for the administration of extraction of raw materials at sea, whereas the responsibility for extraction on land is divided between the Regional Council and the Municipalities.

The **Regional Council** (Regionsrådet), representing the 5 main regions, has responsibility for mapping the occurrence of raw materials and resources and for drafting regional raw material plans. The plans which are made for a 12-year period, but revised every four years, indicate in which areas it is permitted to extract raw materials ('råstofindvindings-områder') and which areas might be of interest with regard to later *resource* needs. Permits are rarely given outside these designated areas, and only under very special circumstances.

The **Municipalities** (Kommunalbestyrelserne), on the other hand, have responsibility for granting raw material permits and supervising and monitoring the extraction on land. Extraction is divided into three different categories: commercial extraction, non-commercial extractions and 'explorative drilling/digging', but commercial extraction is by far the most common.

The Process of applying for a Permit

Applications for a permit to extract raw materials have to be made on a special form available on the website of the Danish Nature Agency, which then have to be submitted to the relevant Municipality. A relatively large degree of detail is required about the 'extractor' and the intended extraction, including the nature, extent and quality of the resource in question based on previous explorative drilling/digging or other tests, especially if the area in question is outside the 'traditional' raw material areas.

Environmental considerations

Raw material extraction is covered by the provisions of the Danish Planning Act[44] in relation to **environmental impact assessment** (Vurdering af Virkninger på Miljøet - VVM)[45] which means that applications have to be screened for the need to carry out an impact assessment before any work can be initiated. Some larger extractions are automatically required to go through the 'VVM' process, i.e. those taking place from open quarries with an overall surface of more than 25 acres and peat digging on an area exceeding 150 acres, as well as open quarry extractions that will last for more than 10 years. Other extractions will be screened in order to judge about the need for 'VVM' in accordance with Annex 1 of Order no. 1510. For those projects with a duty to go through the 'VVM' impact assessment the extraction permit cannot be granted until the impact assessment has been completed and a 'VVM' statement issued. Draft VVM statements have to be made public for a period of at least 8 weeks before a final decision can be made.

[43] The extraction of raw materials such as oil, natural gas, salt and geothermal energy are coved by the Act on Danish Subsoil Exploitation (No. 526 of 2002).

[44] Lov om planlægning, Lovbekendtgørelse nr. 945 af 24. september 2009 (with subsequent modifications).

[45] Bekendtgørelse (Order) nr. 1510 af 15. december 2010 om vurdering af visse offentlige og private anlægs virkning på miljøet (VVM) i medfør af lov om planlægning.

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The 'Coordination Obligation'

Extraction is not only governed by the Raw Material Act, there are a number of other laws that require permission to carry out extraction and could thus affect the decision to grant authorisation. This is for instance the case for the Museums Act, the Act on Environmental Protection, the Forestry Act, the Planning Act, the Nature Protection Act etc.[46]. It is therefore important that the different authorities with authorisation responsibility are able to coordinate the treatment of applications and are able to block proposed extractions or to reduce their potential harmful effect, if any special considerations or risks apply. Coordination not only facilitates the process and makes it faster for those who apply for permits, it is also a way to avoid administrative duplication.

This is the background for the so-called coordination obligation ('samordningspligt') stipulated in § 8 of the Raw Material Act, whereby the receiving Municipality has a duty to send the application for a raw materials permit to any other authority(ies) who has the legal competency according to the legislation in question. They are also required to inform the applicant that the decision to grant authorisation will be put on hold until the position of the authorities responsible for the other laws that apply has been received. In case the consulted authorities oppose the application and are not able to grant their permission to extract, the Municipality has to inform the applicant and provide them with advice on how to complain. The system in effect functions like a 'one-stop-shop'[47].

In practice, the Municipality investigates all the planning regulations that might apply in accordance with the regional raw material plan, the municipal and local plans, environmental protection plans and rules on public roads and access, water supply, wastewater and district heating. The consultation of other authorities has to be organised immediately upon receipt of a correctly completed application and the consulted authorities have a deadline of four weeks to provide their response statement. Occasionally, close neighbours to the area in which a proposed extraction is located have to be consulted as well.

Guidance

In connection with the change of the system after the Municipal Reform in 2007, the Danish Nature Agency drafted a guide on the '*Administration of the Raw Materials Act for regions and municipalities*' with a view to facilitating the understanding of the provisions and getting an overview of the processes. This was subsequently revised in 2012[48]. Guidance is also available for businesses in the sector who as a result of the 2007 Reform had difficulty working out how to apply for extraction permits. This can be found in the *'Overview of raw material extraction – where and how to apply*'[49] also drafted by the Danish Nature Agency.

[46] The other legislative acts that are concerned by the extraction of raw materials and are covered by the 'coordination obligation' are: Skovlovens § 11; Naturbeskyttelseslovens §§ 3, 8, 15, 16 & 18; Museumslovens §§ 29 a & 29 e; Dispensation fra en fredning; Dispensation fra en lokalplan eller byplan; Jordforureningslovens § 52 & 1. januar 2000; Miljøbeskyttelseslovens §§ 19, 24 & 28; Vandforsyningslovens §§ 20 & 26, stk. 1; Lov om offentlige veje §§ 34, 35, 36, 37, 101 & 102; Privatvejslovens §§ 35 & 49, stk. 4; Lov om jernbane § 21.

[47] It should be kept in mind, however, that the initial application procedure only covers the authorisation of the raw material extraction itself – any other authorisations that might be needed in connection with the planned work are not automatically covered.

[48] Miljøministeriet, Naturstyrelsen: 'Administration af råstofloven - En vejledning til regioner og kommuner', september 2012

[49] Miljøministeriet, Naturstyrelsen: 'Overblik over råstofindvinding – hvor og hvordan søges tilladelse', marts 2011 (Jette Haugaard, Anders Dorph og Diana Rose Jørgensen)

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Features Contributing to Sustainable Supply of Raw Materials and improved Competitiveness

As already mentioned, raw material extraction is covered by the provisions of the Danish Planning Act[50] which requires all applications automatically to be screened for the need to carry out an **environmental impact assessment** (VVM)[51] – this is typically the case for larger scale projects and those with a potential impact on the environment. The system also contributes to the values of sustainable development in that the procedures for applying for authorisation have been streamlined and rationalised with a view to avoiding duplication and cutting down on unnecessary administration.

Figures on Performance

The Danish Nature Agency estimates that Municipalities receive a total of around **70 applications** for raw material extraction each year. On the basis of figures submitted by Municipalities to Statistics Denmark on a regular basis, around 70 out of the 98 Municipalities that exist in the country experience cases of raw material extraction with some variation in the level of volumes and activity. There are no data on the actual number of applications per municipality but the following table illustrates the distribution of extraction activity and quantity according to the number of municipalities.

Table 1: Overview of extraction quantities in 2009-2010 - data from Statistics Denmark[52]

Approximate annual extractions	
>500,000 m^3 per year	17 municipalities
50,000 to 500,000 m^3 per year	44 municipalities
<50,000 m^3 per year	9 municipalities
No extractions	28 municipalities

Evaluation and Monitoring

The Municipalities also have a responsibility to monitor the extraction of raw materials on land, both in terms of commercial and private extractions. This implies that they have to ensure, on an ongoing basis, that the provisions of the Raw Materials Act are followed and that extraction permissions or bans are being respected, but they are not required to organise monitoring according to any systematic and regular system. However, they do have a duty to organise a closer examination when there are appeals or if they receive other inquiries that might be the cause for concern. In order to be able to fulfil their monitoring responsibilities Municipalities have the right to access the extraction site and any public and private buildings connected to the site at any time.

The Raw Material Act requires those that have been granted permits to provide detailed information on an annual basis about the extraction, its situation, type, quantities and use of the raw material. The data are used by Statistics Denmark to develop raw material statistics for their annual publications, by the Municipalities to support their monitoring role and administrative reporting and by the Regional Councils to help them develop their raw material plans. In 2012, an **evaluation** was carried out **of the 2007 Municipal Reform** by a committee commissioned by the Ministry for

[50] Lov om planlægning, Lovbekendtgørelse nr. 945 af 24. september 2009 (with subsequent modifications).
[51] Bekendtgørelse (Order) nr. 1510 af 15. december 2010 om vurdering af visse offentlige og private anlægs virkning på miljøet (VVM) i medfør af lov om planlægning.
[52] There are no data on the actual number of applications per municipality but the most active ones appear to be Kalundborg, Aabenraa, Roskilde and Jammerbugten.

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Economic Affairs and the Interior (published in March 2013). The committee consisted of representatives from a wide group of stakeholders including the authorities and relevant business associations. The **arrangements for raw material extraction** that were set up in connection with the reorganisation in 2007 formed part of the evaluation.[53]

The main conclusion of the evaluation was that there were certain difficulties that are evident in the current arrangements for administering the authorisation of extractions. These mainly relate to the division of labour between the Regional Councils and the Municipalities and the delimitation of their respective responsibilities. In particular, there appears to be some ambiguity as to whether the Regional Councils' Raw Material Plans are in a position to set out the conditions for the Municipalities' granting of permits. This has become apparent in a several appeal cases dealt with by the Environmental Board of Appeal (Miljø- og Naturklagenævnet). The evaluation found that excellent collaboration between the two authorities was a prerequisite for the proper functioning of the system. Furthermore, there were concerns that Municipalities could have an interest in refusing permits given local concerns, such as the nuisance that extraction works might cause for their inhabitants in terms of noise, dust and heavy traffic, often combined with limited employment related advantages for the Municipalities in connection with the sites. Other criticisms concern the fact that the regional Raw Material Plans have designated areas of natural beauty and forest areas as specific extraction sites.

In response to the evaluation findings it was **decided to modify the current procedures** and to move the responsibility for granting extraction permits back to the Regions as of July 2014, thus combining the responsibilities for raw material planning and permits in one place. However, the obligation for different authorities with permit responsibilities to cooperate will remain in place under the new system.

Features relating to the wider adoption of the good practice

The "coordination obligation" (samordningspligt) which is the main feature of the current case study has functioned well since it was first introduced in the 1970s and the system has resulted in a streamlining of the application procedures and a reduction of the administrative burden for businesses wanting to apply for extraction permits. In spite of the changes to be made to the current authorisation procedures next summer, the principle of coordinating the work of different authorities with an interest in overseeing the authorisation of permits will remain the same.

Further Information

Information about how to apply for permits to extract and the relevant forms can be found on the website of the Danish Nature Agency: http://www.naturstyrelsen.dk/Vandet/Havet/Raastoffer/.

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[53] Evaluering af kommunalreformen, marts 2013. Afrapportering fra udvalget om evaluering af komunalreformen. Økonomi- og Indenrigsministeriet. p. 203-210 concern the arrangements around raw materials.

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CASE 25 – GUIDANCE FOR THE PERMITTING PROCESS FOR MINING OPERATIONS, SWEDEN

Introduction

As Europe's leading ore and metal mining nation, Sweden's mining authorities are keen to ensure that the country's commanding position is maintained through an efficient legal framework and a permitting process for mining operations with short lead-times that do not compromise the rule of law.

However, as in most Member States, the applicable legal framework (which is a combination of transposed EU legislation and national legislation) and the steps that make-up the permitting process encompassing land use planning and the permits and mining authorisation process are complex. There are a number of environmental, planning and building requirements that need to be met and studies to be submitted by industry to different authorities. Interpretation of these requirements is subject to variation between authorities and these differences may be linked to different organisational interests and/or competency levels.

To address the problems identified, industry specific-guidance developed by a range of different authorities has recently been published. The objective is to enhance the predictability, consistency in decision-making and efficiency of the permitting process for mining operations, without compromising the rule of law.

This activity was developed in parallel with Sweden's Mineral Strategy which is supporting the introduction of a number of innovative actions across a several complementary policy areas with the aim of further strengthening the competitiveness of the mining industry.

Theme

The main theme highlighted in this case study relates to efforts **to improve the permits and authorisation process.**

The introduction of guidance aims to enhance the consistent understanding by a wide range of stakeholders of the existing legal framework. The intended end result is enhanced predictability and consistency in decision-making and improved levels of efficiency in the entire permitting process relating to mining operations.

Reasons for Highlighting this Project

The permits and mining authorisation process are often unclear given that the relevant legislation may be imprecise on specific requirements and the exact nature of information to be submitted to the authorities by mining operators. Often, certain types of practice are not specified. Interpretation of the legal framework is subject to variation between different authorities and industry and this often relates to their different remits, interests and level of experience in dealing with the permitting process. National governments may not offer interpretations of legislation given that it is often the role of authorities and courts to interpret the law.

However, given the complexity of the permitting process for mining operations, the Swedish Government has invested in developing industry-specific guidelines produced by various authorities involved in the permitting process so that a common understanding of the applicable legislation can be established across a range of different interest groups. The intention is that the mining industry

will be subject to a more predictable, consistent and efficient permitting process for proposed mining operations. The lead times for permissible mining operations will therefore be reduced.

Description

Background Issues

The mining industry is faced with a complex range of legislative and procedural issues relating to land planning and issuing permits for mining operations. The legal framework and permitting process are overseen by a range of authorities at national, regional and local levels that require the submission of appropriate documentation and studies at specific intervals. Different authorities are tasked with different roles in terms of enabling access to raw materials and protecting environmental and community interests and this has been noted as leading to slight variation in the interpretation of the legislation. Interpretation of the legislation may also differ between geographical regions as a result of varying levels of experience in dealing with the legal framework. Overall, ensuring compliance with the legislation is complex for industry and a lack of understanding may result in unusually high costs for planning activities. At times, the permitting process has been considered as inefficient, unpredictable and inconsistent.

As a result, industry called for clearer guidance on the relevant requirements that makeup the permitting process for mining operations and the background documentation necessary to facilitate compliance. With clearer guidance and guidelines, correct and complete background documentation can be submitted to assessment authorities, which in turn will shorten lead times since there will be less need to submit supplementary information. In addition, a better of understanding of the permitting process will help to reduce the number of appeals and increase the social acceptability of mining operations.

While it is not normally the role of the Swedish Government to provide a means for government authorities and other stakeholders to jointly interpret legislation, in this case a unique intervention was deemed necessary given that a coherent understanding of the legal framework is essential for the maintenance of the strong performance of the mining sector.

Development of the Guidance Document

In response to the need to support better understanding of the legal framework by a range of actors, the Swedish Government tasked the Geological Survey of Sweden and the Environmental Protection Agency to develop industry-specific guidance for the permitting for mining operations. These authorities do not normally cooperate with one another at this level of detail and they have different policy and legal remits in terms of facilitating access to raw materials and protecting the environment.

It is intended that the guidance will provide support to authorities that have relevant responsibilities in the permitting process and mining companies in their submission of applications. The aim is that the guidance will be frequently updated as new requirements and practice are developed. This includes ongoing cooperation between the Geological Survey of Sweden and Environmental Protection Agency in order to take into account new realities and to deepen the work already established.

The guideline document provides a detailed overview of the relevant areas of the legislation and clearly indicates the type of information that is required by industry at certain stages in the permitting process. Given that a wide range of different actors have developed the guidelines, it has

helped to foster a common understanding of the permitting process overall. The guidelines can be referred to be industry when engaging with authorities and vice versa.

The project has been led by a steering committee with representatives from the Geological Survey of Sweden and the Environmental Protection Agency and industry. The steering group has been linked to a reference group consisting of participants from county councils and the business community. Considering their different interests, this combination of actors working together to develop a joint interpretation of legislation is viewed as unique and a breakthrough in encouraging improved efficiency, predictability and consistency in the permitting process for mining operations. The exercise overall has helped to strengthen relations between the stakeholders relevant to the mining industry and this is viewed as a key part of the Swedish Minerals Strategy. The guideline document is 75 pages long and took 12 months to develop and was completed in May 2013.

Overview of the Permitting Process for Mining Operations which is set-out in the Guidelines

Consideration of mining operations is an extensive process involving a large number of actors. The permitting process for the mining sector differs from other industries as a result of the Swedish Minerals Act which guides the work of the Mining Inspectorate of Sweden. The Minerals Act is designed to support the supply of specifically designated metals and minerals by mining. At the same time, given the specialised skills and capital required for exploration and exploitation activities, under the Minerals Act, only suitable companies that are appropriately identified through the permitting process are granted the legal authority to investigate or mine mineral deposits regardless of who owns the land. In line with the Minerals Act, the Mining Inspectorate is authorised to issue exploration and exploitation permits. In cases where the exploration investigations identify a mineable deposit, the operator may apply for a mining concession for exploitation activities in the relevant location to the Mining Inspectorate. The assessment includes consideration of whether it is probable that the deposit can be mined economically and to determine whether the land can be utilised for mining. Before making its decision on a mining concession, the Mining Inspectorate consults the country level authorities on the application including the provisions on the management of land and water areas.

Moreover, prior to the Mining Inspectorate granting a mining concession, mining operators need to apply for a Test Mining Permit from the County Council Administrative Board. The application for a Test Mining Permit must be supported by an Environmental Impact Assessment. The Test Mining Permit enables the mining operator to perform tests on site to support the development of its proposed mining and investment strategy for the area. Negative decisions issued by County Councils can be appealed by industry through the Land and Environmental Court system.

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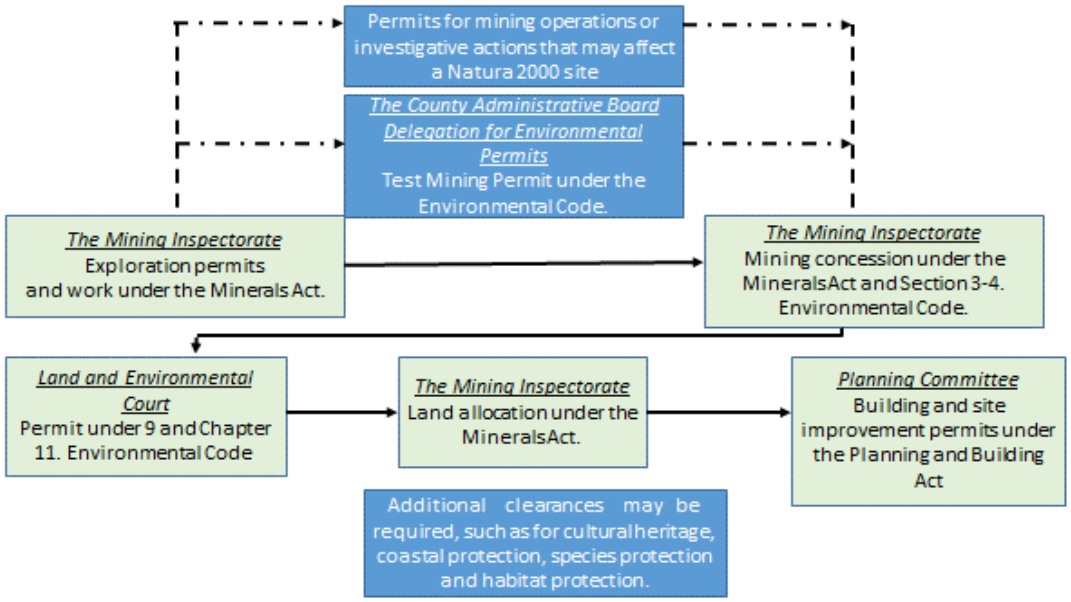
Diagram 1: Overview of the Permitting Process for Mining Operations



In the same way as in other Swedish industries, the mining industry is subject to the Environmental Code. The Environmental Code contains specific provisions on industries that conduct environmentally hazardous activities and industrial activities that may affect water bodies. In order to commence mining operations the Environmental Code requires operators to apply for an environmental permit.

Environmental permits for mining activities are issued by the Land and Environment Court. An application must include an environmental impact assessment, a waste management plan and a plan for how remediation is to be carried out after the activities have ceased. An environmental permit specifies the conditions that apply both to the operation of the mine and to site remediation. The environmental permit also states that a financial reserve must be submitted to the authorities to ensure that sufficient resources are available for remediation in case the enterprise lacks the financial capacity to remediate the site when the appropriate time arrives.

Under the Environmental Code, if an operator applies for a mining concession in or near to a Natura 2000 site, a special permit issued by the provincial government is required. The Environmental Code makes it clear that in such protected areas mining activities should not damage habitats or lead to species loss. Moreover, Natura 2000 sites are subject to stringent considerations such as whether alternative solutions can be identified and that mining activities should only go ahead if the reasons for doing so are seen as imperative to other public interests.

Other considerations may also apply under the Environmental Code such as those relating to species loss, coastal areas and habitat protection. The legislation relating to cultural heritage may also need to be considered.

When a permit under the Environmental Code has been issued the environmental compliance aspect has been fulfilled by the mining operator. To initiate mining, mining operators need to submit a land application to the Mining Inspectorate. If the conditions are met, the Mining Inspectorate will allocate the land as fit for mining. However, before facilities and operational infrastructure are established, mining firms are required to apply for a building permit from the local municipality.

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Successful navigation of the permitting process by mining operators requires well-executed consultations with stakeholders before the submission of necessary documents and studies in order to take on board a wide range of environmental and other considerations and to carefully consider how these are intended to be addressed. Industry and authorities are expected to establish positive approaches to interaction, communication and transparent working methods. It also worthwhile to develop timetables for the various steps in the process to take place so that stakeholders are aware of their commitments.

Features Contributing to the Sustainable Supply of Raw Materials and the Improved Competitiveness of the Sector

A key feature of the introduction of industry-specific guidance is that it intends to enhance the competitiveness of industry. In a more predictable and consistent permitting process environment, miners are aware of the requirements they need to meet. This enables them to make appropriate investment decisions and to prepare appropriate comprehensive documentation that meets the needs of authorities. Ultimately, the permitting process operates in a more efficient manner given that all actors concerned have a better understanding of the procedure and therefore lead times are shortened. This ultimately leads to a less costly permitting process for industry and more efficient access to raw materials. In addition, increasing local stakeholders (such as land-owners) understanding of the permitting process promotes social acceptance of mining operations and reduces the number of appeals of various permitting authorities.

Features relating to the Wider Adoption of the Good Practice

The industry-specific guidelines provide stakeholders from a range of backgrounds with a coherent understanding of the steps and necessary requirements that feature as part of the permitting process. This is particularly important in an area which is legally complex and subject to disagreements between actors with different interests. A strong level of understanding of the permitting process will help to strengthen its efficiency, predictability and consistent operation.

Moreover, the activities feeding into the development of the guidelines brought together stakeholders with a wide range of interests relating to the mining industry to work together on a unique project. This has helped to develop relations between officials from different authorities and industry. It is intended that the guidelines will be updated as new requirements and practice emerge.

Further Information

Guidance for the Permitting Process for Mining Operations

http://www.sgu.se/dokument/service_sgu_publ/vagledning-for-provning-av-gruvverksamhet.pdf

Swedish Minerals Strategy

http://www.regeringen.se/content/1/c6/21/89/31/dcee0282.pdf