European Innovation Partnership on Raw Materials

Application for a Raw Materials Commitment

Mineral resources in sustainable land-use planning

Acronym: Mineland

Abstract / executive summary:
Access to mineral resources in Europe is one of the pillars of the RMI. This leads to the need for safeguarding important mineral resources (including CRM) for present and future generations to exploit. Therefore, the integration of mineral resources policies into land-use planning at different scales is a key factor for achieving the goals of the RMI. Land-use planning practices across Europe can be described as a complex interaction between local, regional, national and European scale needs and actions, in which mineral resources play a lesser role compared to other societal interests. Consequently, the "polygonisation" of European land into areas suitable for a specific use or protection is progressing at speed, in most cases without taking mineral resources into consideration, sometimes being in conflict with challenging CRM interests.

The three parts of the commitment explores the possibilities and opportunities for incorporating mineral resources policies into land-use planning:
1. Define the important challenges regarding mineral resources policies at national level and land-use planning, and design a methodology and template for the case studies.
2. Develop the case studies illustrating the challenges on different scales.
3. Draw together the lessons from the case studies; prepare proposals for guidelines and best practices; identify the implications for mineral exploration and development policies.

The implemented methodology and resulting information will be connected to EU platforms as Minerals4EU and the European initiatives dealing with the evaluation of land use development, LUISA (Land-Use-based Integrated Sustainability Assessment Modelling Platform, https://ec.europa.eu/jrc/en/luisa)

The partners significant competence and experience in mineral resource land management lays a solid foundation for recommendations. This will enable successful land-use planning in relation to the entire value chain of mineral resource development.

Links to the Strategic Implementation Plan:
- I. Technology Pillar
  - I.B Priority Area: Technologies for primary and secondary raw materials’ production
    - Action area n° I.2: Exploration
  - 2) Geo-models
- **Action area n° I.3: Innovative extraction of raw materials**
  - 2) Mining of small deposits

- **II. Non-Technology Pillar**
  - **II.A Priority Area: Improving Europe’s raw materials framework conditions**
    - **Action area n° II.2: Access to Mineral Potential in the EU**
      - 2) Examine how to incorporate the concept of mineral deposits of public importance
      - 4) Safeguard mineral deposits of public importance
      - 6) Exchange practices in minerals land use planning and develop guidelines

**Coverage of the Action Areas referred to above:**

In the commitment, we aim to contribute to European-wide assessment of cross-sectorial competition for land and conduct a series of case studies, exploring the challenges related to minerals (e.g., metallic and industrial minerals with CRM and aggregates) in land-use planning at national level. From case studies, best practices will be proposed through the development of guidelines and examples. The case studies will be conducted by the geological surveys members of the EGS together with some key players in industry and local authorities. In many European countries, the geological surveys have the responsibility within their jurisdiction for implementing mineral resource policies and planning, and strengthen the alignment towards a pan-European strategy and best practices. Thus, the commitment relates to the EIP target “Framework conditions for primary raw materials” in Priority Area II.A: Improving Europe’s raw materials framework conditions, and in particular actions 2, 4 and 6 of II.2, for the benefit of the industry and the society taking into account how to integrate with the national mineral policies. It has been developed in order to address the complex issues relating to the exploitation of mineral resources within a modern land-use planning framework. It also connects to “SC15-2016-2017: Raw Materials policy support actions”, action “d) Linking land use planning policies to national mineral policies and partly to action c).

Safeguarding must also relate to future needs and undiscovered mineral resources. Therefore, a flexible land use for minerals should take into account prospectivity, exploration, mining development and operations, remediation and after-use and secondary resources, linking to SIP action areas “Exploration” and “Innovative extraction of raw materials”.

**Objectives of the commitment:**

The objective of this commitment is to facilitate the sustainable exploitation of Europe’s mineral deposits for the benefit of European industry and society, considering national, regional and local socio-economic developments. This includes support for the European minerals sector; support for European expertise and best practice in minerals exploration and development; assists in the security of supply of raw materials to Europe’s manufacturing sector; thus support development of green and low carbon technologies. Mineral resources in general, including CRM, will be covered. The commitment will address challenges facing the minerals sector by analysing case studies including conflicting and competing land use, valuation of mineral resources, life-cycle analysis of mineral resource exploitation, including secondary resources and land use of closed mines.

**Description of the activities:**

1) Identifying key challenges and perspectives related to land-use planning and mineral resources and how this can be linked to the national mineral policies. Examples, considering different perspectives such as, known versus unknown deposits; or EU versus local scale. Other aspects may include e.g.: how to compare mineral resources with ecosystem services; land-use conflict analysis;
mineral resources in indigenous people areas. In addition, a template/procedure for case studies will be established, so that case histories can be compared.

2) Develop the case studies illustrating the challenges. The aim is that the case studies will collectively focus on different perspectives and scales. Below are some examples of possible areas to study:
   a. Unknown resources and land-use planning
   b. Regional/county-level integrated land-use planning
   c. Urban planning (regional future scenario modelling)
   d. Indigenous people (particular land-use challenges)
   e. Land use conflict analyses (case studies including GIS modelling)
   f. Mine/quarry life cycle (project life cycle planning; transient impact)
   g. Surface to sub-surface (3D data integration)

3) Guidelines and input for best practices. Developed guidelines should take account INSPIRE, Minerals4EU foundation, EUMINET Commitment, EURARE, Minatura2020, Mica, ProSUM, and other relevant EU projects. This part of the commitment is aimed at defining principles for securing sustainable use and access to mineral resources, and also land use after extraction of mineral resources by means of long-term land-use planning. In order for improved inclusion of mineral data in land use management a connection should be made to existing and planned information infrastructures such as Minerals4EU and the EU Raw Materials Knowledge Base (EURMKB) and the LUISA platform. Thus the commitment will furnish inputs for the assessments of land use development and conflicts at a national level in Europe. The LUISA platform can further be used in the linkages between regional and local development and CRM exploitation will be stressed and proposed in existing framework. All of this will allow evaluating options and scenarios of exploitation of mineral resources at national level considering important aspects in land-use such as demography, socio-economic trends, geographic location, and the necessary infrastructure (e.g. transport, energysupply). The expected outputs will contribute on how to include the concept of mineral deposits of public importance in the national mineral policies looking at it also from a European perspective.

**Description of the expected impacts:**

The commitment highlight key challenges in mineral resource land use management and propose solutions for better synergies between mineral policies and land management systems. The commitment use key challenges in mineral resource land management to derive better tools for land management with focus on both current and future needs of mineral resources. This will lead to best practice recommendations from studies of implemented national mineral policies embedded into land use management. Areal conflicts can be either solved or risks reduced through the integration of areal-defined mineral resource information with other land use data.

The main impacts will be to:
   a. strengthen the link between exploration and development of mineral deposits into national land-use and mineral policies.
   b. secure a stronger national and EU long term management of mineral resources (including CRM).
   c. achieve the objectives of the EIP on Raw Materials, particularly in improving conditions for sustainable access and supply of raw materials in the EU and links to “Exploration” and “Innovative extraction of raw materials”. The results can have a direct impact on action area “Strategic international dialogues”;
   d. more transparent and efficient exploration and mining permitting and licensing processes in the EU and an improved climate for investors and industry;
   e. improved land-use planning based on a better knowledge of identified or potential deposits and
their potential environmental impacts;
f. bring mineral resources in parity with other land use and natural resources whilst implementing the environmental acquits.
g. foster dialog and convergence of the actors dealing or depending on land-planning towards best practices and focus on solutions of land use conflicts.

**Expected innovation outcomes:**
New processes
New ideas to the market
Societal innovation

**Comments:**
Having in place a qualified and properly skilled EU players it will be possible to develop best practices approaching the sustainable management of mineral resources in relation to land-use planning. One of the strengths of the Partnership is the strong operational capability, its experience on European mineral resources, and its competence in related policy making but also practitioners from industry and local authority. Collectively, National Geological Survey Organisations (NGSOs) have participated in over 180 EU research projects. They are key public holders of thematic, geology related data, information, expertise, knowledge, technology, service, and educational skills providers, to a wide range of stakeholders including local, regional, and national / authorities, economists, civil society and professionals.

**Name of the coordinating organisation:**
EuroGeoSurveys (EGS)

**Country:**
Europe

**Entity profile:**
Multi-national organization

**Role within the commitment:**
EGS is the organisation of the Geological Surveys of Europe. EGS was part of the INSPIRE work carried out in the M4EU project, and is involved in MICA and ProSUM projects, working on communicating the projects’ benefits to its stakeholders. The commitment will benefit from EGS’s experience in establishing an effective dialogues among different stakeholders from all over Europe, and in communicating science in the frame of large EC projects.

**Other partners:**

**Name of partner:**
Geological survey of Sweden (SGU)

**Country:**
Sweden

**Entity profile:**
Governmental/public body

**Role within the commitment:**
SGU, lead EGS partner, responsible for national land management of mineral resources and will contribute to all phases. Identification of key challenges like known deposits vs. unknown deposits, ground water and mineral conflicts, urban planning (underground vs surface) and also indigenous areas. The case studies will have a focus to secure mineral resources and guidelines and input for best practices and connection to national mineral policy.
**Name of partner:**
Geological Survey of Norway

**Country:**
Norway

**Entity profile:**
Governmental/public body

**Role within the commitment:**
NGU will contribute to all phases. NGU has mandate from the Norwegian Government to establish criteria for public importance of mineral deposits in Norway, and also works in developing tools for improved visualization of mineral resources and the potential of such in land use planning.

---

**Name of partner:**
Czech Geological Survey (CGS)

**Country:**
Czech Republic

**Entity profile:**
Governmental/public body

**Role within the commitment:**
Phase one: Contribution to design template for case study including use of our regional mineral polices in CR. Phase two: Case study for Liberec region. Presentation of case study workflow and results. Phase three: Evaluation of case study (studies), generalisation of the main results and formulation principal parts as contributions to guidelines and best practice study. Presentation of of results and recommendations.

---

**Name of partner:**
SRDE “Geoinform of Ukraine”

**Country:**
Ukraine

**Entity profile:**
Governmental/public body

**Role within the commitment:**
SRDE collects, analyzes and provides information received from geological study and subsurface use in Ukraine. In phase 1, GIU will identify challenges and perspectives related to land-use planning and mineral resources in Ukraine. In Phase 2, the case studies will concern unknown resources and land-use planning, CRM inventory, GIS modelling, data harmonization. In Phase 3, the guidelines and input for best practices are to be developed.

---

**Name of partner:**
Bureau de Recherches Géologiques et Minières (BRGM)

**Country:**
France

**Entity profile:**
Governmental/public body

**Role within the**
commitment:
The GeoResources Division covers mineral resources, research (e.g., ore forming processes, metallogenic syntheses, predictive mapping, etc.), including exploration, mining infrastructures, management of after mine problems, to raw materials economy. Thus, BRGM will contribute to phases one and two, and to phase three, particularly for establishing the link with the EURMKB and enhancing the results of this commitment and related call proposal.

Name of partner:
Institute of Geology and Mineral Exploration - IGME
Country:
Greece
Entity profile:
Governmental/public body
Role within the commitment:
IGME intend to contributes to phases. Based on its data, target areas will be established and sites of mineral importance will be identified and proposed. The possibility of mineral exploitation at these sites will be evaluated taking into consideration other land use issues. Guidelines and best practices will be drawn in accordance to our experience from the participation from national and European projects and the sustainability measures.

Name of partner:
Geological Survey of Ireland (GSI)
Country:
Ireland
Entity profile:
Governmental/public body
Role within the commitment:
GSI will participate by identifying and outlining a potential methodology for incorporating minerals related issues into land use planning as a case study for inclusion in the outcomes of the Commitment. The advantages and disadvantages of the case study when compared to the alternative systems will be outlined. All work related to the Commitment is new work, not carried out by GSI previously.

Name of partner:
Boliden Mineral AB
Country:
Sweden
Entity profile:
Private sector - large company
Role within the commitment:
Industrial partner working on real world land-use cases with focus on solutions to conflicting land use and optimization of mining areas.

Name of partner:
County Administrative Board of Västerbotten
Country:
Sweden

**Entity profile:**
Governmental/public body

**Role within the commitment:**
Assist in the case studies together with experiences from earlier cases and guidelines for phase 3.

---

**Name of partner:**
Euromines

**Country:**
Europe

**Entity profile:**
Other

**Other:**
Industry association

**Role within the commitment:**
Euromines is the representative of the European metals and minerals mining industry. Since its founding in 1996, Euromines e.g., been active in WG 2 on Minerals Policy, Land-planning and Permitting. It holds a repository of critical issues in land-planning within the industry. Contributing on: phase one: by providing assessment on land-use issues during permitting process and phase three: by assisting with the conclusions and recommendations.

---

**Name of partner:**
European Aggregates Association (UEPG)

**Country:**
Europe

**Entity profile:**
Multi-national organization

**Role within the commitment:**
UEPG represents the biggest non-energy extractive industry sector producing 2.6 billion tons of sand, gravel, crushed rock, marine aggregates, recycled aggregates and manufactured aggregates at 25,000 sites and produced by 15,000 companies. The extraction of aggregates is compatible with biodiversity and environmental management. UEPG believes that our contribution and expertise to the MINELAND project could be constructive and useful.

---

**Name of partner:**
Industrial Minerals Association Europe (IMA)

**Country:**
Europe

**Entity profile:**
Multi-national organization

**Role within the commitment:**
Give short description of organization, role in the commitment (contributing on phase one, two and/or three, including main interest/knowledge area within the commitment) IMA will work on the following tasks: • Provide Insights on various country practices on land use planning and...
permitting; • Liaise with NEEIP partners; • Support dissemination activities: • Support national and/or Pan-European events.

**Name of partner:**
Geological Survey of Finland (GTK)

**Country:**
Finland

**Entity profile:**
Governmental/public body

**Role within the commitment:**
GTK is a leading European centre in assessment, research and sustainable use of geological resources. GTK will be involved in identifying challenges related to land-use planning/mineral resources and contributes to designing methodologies and templates for the case studies. GTK contributes to preparing proposals for guidelines and best practices and to identifying the implications for mineral exploration and development policies.

**Existing EU contribution:**
No

**Period to implement the commitment:**
Tuesday, 15 March, 2016 to Monday, 31 December, 2018

**Source URL:** https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/mineral-resources-sustainable-land-use-planning