



Minerals Policy Guidance for
Europe

Policy Laboratory 4 Report: Innovations and supporting policies for waste management and mine closure

Lavrion, 21-22 September, 2017



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Introduction

This MIN-GUIDE Policy Laboratory Report provides information on the inputs, discussions and outcomes of the **4th MIN-GUIDE Policy Laboratory: Innovations and supporting policies for waste management and mine closure, which took place in Lavrion, September 21-22, 2017.**

The **MIN-GUIDE Policy Laboratory 4** was the fourth in a series of stakeholder workshops organized within the MIN-GUIDE project. The main objective of Policy Laboratory 4 was to provide an overview of, and reflect upon, **innovation and supporting policies in waste management and mine closure.** Therefore, the workshop had a twofold approach: informing participants about the most recent progress and steps in the development of the MIN-GUIDE online Minerals Policy Guide, and to facilitate an exchange of information and learning on recent innovations in waste management and mine closure and their link to policy.

As a basis for the Policy Laboratory content, the project team used the results of the MIN-GUIDE Deliverables D5.1 and D5.2. And especially innovations in waste management and water treatment (1st stream) and mine closure with economic (2nd stream) and social impact (3rd stream). In this frame, the MIN-GUIDE team has selected and elaborated on cases for each of these three streams, allowing for interactive, in-depth exchange of information and learning.

The 4th MIN-GUIDE Policy Laboratory was structured in the following way:

- “Opening and orientation” session, where a) the objectives and main achievement of the MIN-GUIDE project; b) the EU Raw Materials and Minerals policy strategy and Regulatory framework were presented.

- Session on **“innovation challenges and policy responses in waste management and mine closure”**, where the perspective on challenges and drivers, as well as an update on the stocktaking of enabling policies and good practice conducted within the MIN-GUIDE project were presented.

- Three parallel working groups** (Figure 1) in which innovations in waste management, water treatment and mine closure were presented, followed by discussions on the transferability of these innovative cases, gaps and future needs.

- Presentation of the results of the 3 working groups.

- Final session on **“discovering future pathways for innovation and supporting policies in waste management and mine closure”**.

To access the documentation of the 4th MIN-GUIDE Policy Laboratory, including the (i) Policy Laboratory Agenda; and (ii) the presentations given by the keynote speakers and the presenters from the Parallel Policy Laboratories, please visit the project website: <http://www.min-guide.eu/laboratory/policy-laboratory-4>.

In total, 63 participants from 15 European countries attended the workshop that was moderated by Gerald Berger (*Institute for Managing Sustainability, Vienna University of Economics and Business, Austria*). The distribution of participants to stakeholder groups (excluding MIN-GUIDE project partners) can be seen in Figure 3.



Figure 1. The 4th Policy Lab event in Lavrion, September 21-22 2017.

**Policy Lab 1:
Waste Management**

Case 1: *Sea tailings disposal,* Sverre A. Høstmark, Norway

Case 2: *Rehabilitation of THORICOS bay in Lavrion,* N. Papiasiopi, NTUA, Greece

Case 3: *Treatment & Recovery of Wastewater Originating from Magnesite Ore Washing Facilities,* J. Tsilogeorgis, Grecian Magnesites S.A., Greece

Case 4: *Passive treatment in an old sulphide mine in northern Greece* A. Kourtis, NTUA, Greece

**Policy Lab 2:
Mine Closure with economic impact**

Case 1: *101 things to do with a hole in the ground – Eden Project case study,* Dan Ryan, Eden Project, UK

Case 2: *Rehabilitation of old mine waste sites – The case of LTCP.* A. Benardos, NTUA, Greece

**Policy Lab 3:
Mine Closure with social impact**

Case 1: *Vineyards in the service of waste management and Mine Closure,* George Petrakis, Imerys S.A., Greece

Case 2: *Rehabilitation of Mining in Portugal,* Paula Dinis, DGEG, Portugal

Case 3: *Closure and Ongoing maintenance of Lignite mine in Austria,* Markus Troger, GKB Bergbau, Austria

Figure 2. Policy Laboratory 4 parallel working groups (Policy Lab sessions).

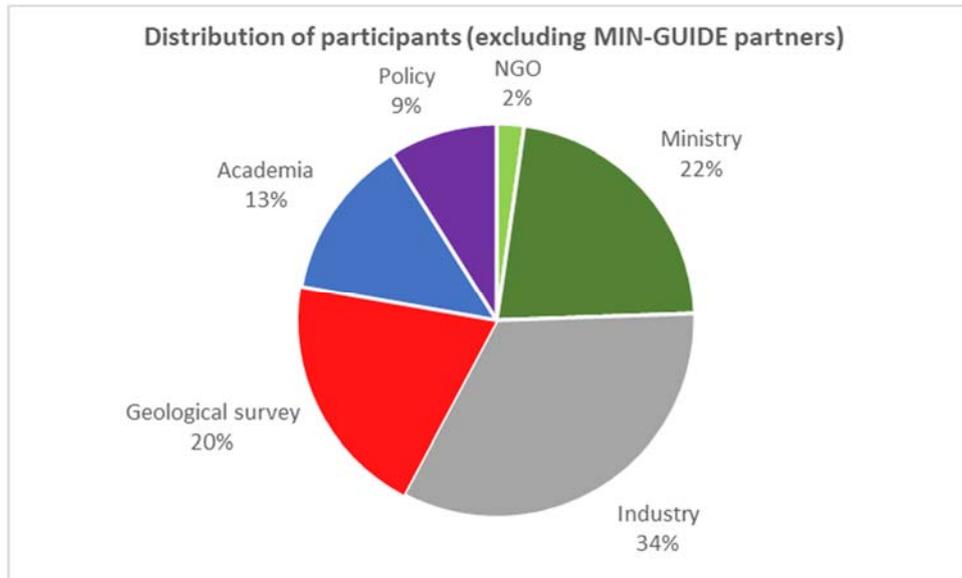


Figure 3. Distribution of participants at event (excluding the MIN-GUIDE consortium).



Opening and Orientation

The Director of the Lavrion Technological and Cultural Park, **Assimakis Chadoumelis**, welcomed the participants at the LTCP. In his opening address he presented the history and the activities of LTCP e.g. scientific research, education, business and culture. The LTCP was founded in the place of the old French Mining Company of Lavrion (Compagnie Francaise des Mines du Laurium) in 1992, as a result of the initiative undertaken by the National Technical University of Athens and the Greek Government.

Andreas Endl (*Institute for Managing Sustainability, Vienna University of Economics and Business*) presented an overview of the MIN-GUIDE project focusing on the “contribution to an innovation friendly policy framework for a secure and sustainable supply of minerals”. He provided an outline of the 4th Policy Laboratory agenda and objectives, i.e. highlighting the most relevant innovations in the waste management of abandoned mines in combination with the specific policy frameworks that should be in each case be followed.

Helena Viegas (**Policy officer from DG Internal market, Industry, Entrepreneurship and SMEs, European Commission**) presented the overview of the EU current raw materials policy framework for securing the supply of mineral raw materials in Europe and the various existing initiatives including the Raw Materials Initiative (RMI) and the European Innovation Partnership on Raw Materials (EIP RM) and how these address the framework conditions. In particular it was showed where the mining waste management is positioned in the scope of the existing initiatives (RMI, EIP RM and Circular Economy Action Plan), the actions included in the Circular economy Action plan for mining waste and the H2020 projects which cover mining waste related issues (data, management, recovery, etc.). Also the new list of CRM published in September was presented. She emphasised that the aim is to strengthen the 3rd pillar of EIP RM (which is more relevant to environmental issues and waste management). **Florence Limet** (**Policy Officer from DG Environment, European Commission**) presented the most recent Commission findings about the implementation of Extractive Waste Directive (2006/21/EC) as well as upcoming initiatives (incl. the finalisation of the revision of the Best Available Techniques Reference document (BREF) on extractive waste management, the development of guidelines on inspections of waste facilities as well as upcoming studies on waste management plans and the implementation of the Directive 2006/21/EC).

Innovation challenges and policy responses in waste management and mine closure

Katerina Adam (*Assoc. Professor in NTUA, Policy Specialist, School of Mining & Metallurgical Engineering, National Technical University of Athens, Greece*) was setting the scene on innovation challenges. In her presentation she talked about the general challenge of economic growth and sustainability, as well as the specific challenges that the mining industry faces. Mrs Adam highlighted that the EU and the national legislation framework should aim to the circular economy. Environmental perspectives, societal challenges, economic values should be fostered as part of good practices throughout the life of mining operation. In other hand, a poor practice could lead to the increasing of the risks resulting during the mine closure phase.

Antonis Politis (*Project Manager, Laboratory of Metallurgy, School of Mining & Metallurgical Engineering, National Technical University of Athens, Greece*) followed with a presentation including the results of the MIN-GUIDE stock-taking on innovation enabling policies and cases on waste management and mine closure. He started his presentation with a description of the aims and the scope of WP5 on “Innovative waste management and mine closure” and explaining the approach chosen in the investigation. Based on the MIN-GUIDE definition of innovation types and the



identified sector-specific innovation needs, the European and national policy and legislation framework was analysed with respect to its catalysing and inhibiting elements. Also, he presented further details of the work within WP5 and the work which has been done so far, as included in the Deliverable Report 5.1 "Policy and legislation framework for innovation in Waste Management and Mine Closure" which was submitted in April of 2017 and Deliverable report 5.2 "Report on innovation evaluation criteria and best case practices in waste management and mine closure", submitted in July of 2017. Finally, he highlighted the importance of the Policy laboratory 4 outcome, as the results will be analysed in details in the upcoming deliverable report.



Parallel Policy Laboratories on Innovation and Supporting Policies for Waste Management and Mine Closure Introduction

One of the main goals of the Policy Laboratory is the presentation of innovative applications in Waste Management (including Water treatment) and Mine Closure (with economic and social impact).

Maria Taxiarchou (Assistant Professor, Laboratory of Metallurgy, School of Mining & Metallurgical Engineering, National Technical University of Athens, Greece) presented the 3 Parallel Policy laboratories for Waste Management and Mine Closure (Figure 2).

Parallel session 1 on waste management includes four cases in total. Cases 1 and 2 are related with waste management and cases 3 and 4 with water treatment.

Parallel session 2 on mine closure with economic impact covered two cases.

Parallel session 3 on mine closure with social impact included three cases.

The facilitator **Gerald Berger (WU Wien)** explained the structure that policy lab is working. The process is divided in two parts: Part I (“Listening, exchanging, and learning”) includes the investigation of non-policy factors and interesting supporting policies for each case, while in part 2 (“Exploring transferability”) the participants are split into groups according to their interests in order to find out the proper way to transfer the presented case studies.

In each of the three Policy Labs, after listening to innovation case presentations, participants were asked to split up and participate in table group discussions. Each of the group discussions revolved around one out of the three innovation cases discussed at the specific Policy Laboratories. Each group received a case sheet (i.e. flipchart paper with predefined structure) on which participants wrote down policy and non-policy factors they found most relevant for their particular case. In part 2 “Exploring transferability” participants were then asked to go one step further and discuss the transferability of these factors into other contexts, for example in another country or other innovation case context. Participants, after noting down important points of their transferability discussions on the flipcharts, presented their discussions to the other two groups within their respective Policy Laboratory.

In the paragraph below the case sheets from each policy laboratory are presented, with the key outcomes summarized by the parallel session moderators in a feedback session on day 2.

Parallel Policy Laboratories on Innovation and Supporting Policies for Waste Management and Mine Closure – Outcomes

The outcomes of the Policy Lab group discussions are presented below. Further analysis of the results, conducted by the session moderators, is presented in the section Feedback from the Policy Laboratories.

Policy Laboratory 1: Waste Management

Michanourgeio Room, Facilitator: Antonis Politis



Case 1: Sea Tailings Disposal (in fjords), Sverre Alhaug Høstmark, Federation of Norwegian Industries, Norway

Note: the table below represents the views of the Federation of Norwegian industries. It does not represent the views of all participants nor of the Commission.

Non-Policy Factors	Transferability aspects
<ul style="list-style-type: none"> Environmental solution 	<ul style="list-style-type: none"> Similar examples in Canada, Chile, Greece, Ireland, Finland, France, and other)
<ul style="list-style-type: none"> Physicochemical characteristics of Waste 	<ul style="list-style-type: none"> Attention to limits (only feasible to 1-3 km distance)

Supporting Policies	Transferability aspects
<ul style="list-style-type: none"> Mine Waste Directive 	<ul style="list-style-type: none"> Deep knowledge of EU regulations
<ul style="list-style-type: none"> Water Framework Directive 	<ul style="list-style-type: none"> Deep knowledge of EU regulations

Case 2: Rehabilitation of THORICOS Bay in Lavrion, Nymfodora Papasiopi, Associate Professor, NTUA, Greece

Non-Policy Factors	Transferability aspects
<ul style="list-style-type: none"> The public health is defined as a principal priority 	<ul style="list-style-type: none"> Recognition of the problem and need for action
<ul style="list-style-type: none"> The will of the municipality authorities to develop actions and solutions 	<ul style="list-style-type: none"> Involve all stakeholders in continuous discussions

Supporting Policies	Transferability aspects
<ul style="list-style-type: none"> EU financial support 	<ul style="list-style-type: none"> Prerequisites for financing
<ul style="list-style-type: none"> European research programs 	<ul style="list-style-type: none"> Prioritized sector in H2020

Case 3: Treatment and Recovery of Waste Water Originating from Magnesite Ore Washing Facilities, Jason Tsilogorgis, Environmental Management, Grecian Magnesites S.A., Greece

Non-Policy Factors	Transferability aspects
<ul style="list-style-type: none"> Water shortage in the broader area requires the implementation of an effective water management plan 	<ul style="list-style-type: none"> Applied method to similar industries in countries with water shortage issues (especially in Mediterranean region)
<ul style="list-style-type: none"> Sustainable groundwater management taking into account the needs of the local communities for freshwater supply, especially for field irrigation 	

Supporting Policies	Transferability aspects
<ul style="list-style-type: none"> Dir. 2006/21/EC (Extractive Industry) 	<ul style="list-style-type: none"> Monitoring of unhindered



Wastes) <ul style="list-style-type: none"> • Dir. 2000/60/EC (EU Water Framework) • Dir. 2014/52/EU (Envir. Impact Assessment) 	implementation of the legislative framework by the authorities
<ul style="list-style-type: none"> • Dir. 2006/118/EC (Groundwater) 	

Case 4: Passive Treatment in an old sulfide mine in northern Greece, Apostolis Kourtis, Dr. Mining and Metallurgical Engineer, NTUA, Greece

Non-Policy Factors	Transferability aspects
<ul style="list-style-type: none"> • Upscaling from pilot to industrial level • Knowledge of current know how experience 	<ul style="list-style-type: none"> • Publications , communication and dissemination both to scientists and local communities -Existing forums could be an important source
<ul style="list-style-type: none"> • Need for innovative approach 	<ul style="list-style-type: none"> • Eco –friendly methods and self-sustaining systems

Supporting Policies	Transferability aspects
<ul style="list-style-type: none"> • EU and National funding (e.g. H2020) 	
<ul style="list-style-type: none"> • Existing Legislation 	<ul style="list-style-type: none"> • Harmonized legislation for thresholds and uniform application of legislative docs • More control of activities such as that environmental requirements meet with limits

Policy Laboratory 2: Mine Closure with economic impact

Dioikhsh Room, Facilitator: Martha Bicket

Case 1: 101 things to do with a hole in the ground, Eden project, Dan Ryan, Eden Project, UK

Non-Policy Factors	Transferability aspects
Expectancy of single person	<ul style="list-style-type: none"> • Strong facilitation and creative process
<ul style="list-style-type: none"> • Favorable financial climate (significant structure funds) 	<ul style="list-style-type: none"> • Knowledge on how to access to funds

Supporting Policies	Transferability aspects
<ul style="list-style-type: none"> • Local plans e.g. Cornwall Mineral framework Directive 	<ul style="list-style-type: none"> • Good knowledge of local context
<ul style="list-style-type: none"> • "Flexible" regulations 	<ul style="list-style-type: none"> • Clarify of rules • Educated professionals



Case 2: Rehabilitation of old mine waste sites. The case of LTCP, Andreas Benardos, Assistant Professor, NTUA, Greece

Non-Policy Factors	Transferability aspects
<ul style="list-style-type: none"> The dream of one person to preserve the heritage 	<ul style="list-style-type: none"> Recognition of “charismatic” (= skilled people) that could provide capabilities and enthusiasm Giving rewards and recognition to success factors
<ul style="list-style-type: none"> Create local support and trust by locals 	<ul style="list-style-type: none"> Invitation & Participation of locals to the meetings High level of transparency

Supporting Policies	Transferability aspects
<ul style="list-style-type: none"> Tax reliefs and benefits 	<ul style="list-style-type: none"> More structure funds
<ul style="list-style-type: none"> Funding support from EU (75% EU, 25% Greek State) 	

Policy Laboratory 3: Mine Closure with social impact

Farmakeio Room, Facilitator: Michael Tost

Case 1: Vineyards in the service of waste management and mine closure, George Petrakis, Imerys Industrial Minerals Greece S.A., Greece

After the presentation of vineyard case, the participants joined the other tables in order to be balanced the number of groups and to make a fruitful dialogue.

Case 2: Rehabilitation in Mining in Portugal, Paula Castanheira Dinis, DGEG, Portugal

Non-Policy Factors	Transferability aspects
<ul style="list-style-type: none"> Local communities pressure for rehabilitation of abandoned mine sites 	<ul style="list-style-type: none"> Efficient way of land use
<ul style="list-style-type: none"> Environmental concerns by NGO’s to further mining activity and development 	<ul style="list-style-type: none"> Development of trust

Supporting Policies	Transferability aspects
<ul style="list-style-type: none"> Environmental Rehabilitation of old Mining Areas Plan 	<ul style="list-style-type: none"> Creation of conditions to develop remediation plans by governments
<ul style="list-style-type: none"> DGEG National Policy Decision EU supporting policy and cohesion fund 	<ul style="list-style-type: none"> Political will

Case 3: Closure and Ongoing maintenance of Lignite Mine in Austria, Markus Troger, GKB Bergbau, Austria



Non-Policy Factors	Transferability aspects
<ul style="list-style-type: none">• Public concerns	<ul style="list-style-type: none">• Good Closure Practice
<ul style="list-style-type: none">• Self-sustaining land use	<ul style="list-style-type: none">• Benefits from land

Supporting Policies	Transferability aspects
<ul style="list-style-type: none">• Austrian Mining Law	<ul style="list-style-type: none">• Closure plans• Closure provisions• Community involvement
<ul style="list-style-type: none">• Waste Directive• Water Directive	



Feedback from the Policy Laboratories

On the second day, the three Policy Laboratory Facilitators **Antonis Politis**, **Andreas Endl** (replace Martha Bicket) and **Michael Tost** summarised and analysed the results of their respective Policy Laboratory for all the participants in a joint session. The facilitators also answered questions and received comments from the participants. The feedback from each Policy Lab is shortly summarised below:

Policy Laboratory 1 on waste management was summarized by Antonis Politis. In the first case study, the Norwegian industry explained that it uses the **sea tailings disposal** method in fjords in Norway at two facilities as alternative to land disposal. This kind of practice seems to raise some concerns in the participants which related with unknown impacts of this practice. As a consequence, it is prudent that more studies are published before concluding whether or not this practice is a good case study of waste management. A second case study is focused on **Thoricos Bay in Lavrion** in Greece, an area that is, at significant extent, covered with metallurgical wastes due to its vicinity to the metallurgical facilities of Lavrion mines. The in-situ rehabilitation of the area was proposed to be based on environmental criteria such as reduced land take, shorter reclamation period, less potential impacts on soils, water resources, atmospheric and acoustic environment. In the third case of **Treatment & Recovery of Wastewater Originating from Magnesite Ore Washing Facilities**, the use of water in many stages of the processing line and the necessity of proper water treatment and recovery is underlined. The specific company was selected as case study as it is one of the top magnesia producers and exporters in the world. Finally, the **Passive treatment of acidic mine waters** case was presented. It was a successful research project and was undertaken in order to develop and evaluate anaerobic wetlands as an alternative method for the treatment of acidic mine drainage (AMD).

Policy Laboratory 2 on mine closure with economic impact was summarized by Andreas Endl. Policy laboratory 2 contained two cases. It is worth noting that in both case studies (**Eden Project** in UK and **LTCP** in Greece) the inspiration for the rehabilitation project was the entrepreneurial spirit of one person (e.g. Mr Costas Panagopoulos in the case of LTCP).

Although the initiatives of both projects were surprisingly similar, there was a notable difference. In case of Eden project there is no toxic environment and the procedure of successful rehabilitation from a pit to a “paradise” took place smoothly. In the case of the rehabilitation of LTCP, the high environmental pollution (e.g. arsenic compounds) led to the necessity of rehabilitation with continuous monitoring and recording all environmental parameters of the technical projects, during both their construction and operation by conducting specialized analyses and in-situ measurements regarding all environmental means (soil, water and air). The audience was interested to be informed about the level of the used funds for the implementation of Eden and LTCP projects. It is generally recognized that in Eden Project a hole in the ground from clay pit was converted to world-famous visitor attraction and educational charity, while in case of LTCP an emblematic cultural and enterprise center was established.

In the feedback on **Policy Laboratory 3**, **Michael Tost** briefly recapped the three cases to the participants in the joint session. Particularly interesting was that the choice for conversion of a mining after the end of life to **Vineyards** with goal to be recreated a dynamic ecosystem and the minimization of the visual disturbance of mining activity. Furthermore the vision for opening new economic horizons for the local economy (e.g. wine-lovers tourism attraction) makes the vineyard case a success story. The case of the **Rehabilitation of abandoned mines in Portugal** makes clear the importance of an effective applied strategy (environmental studies, detailed plans, successful development projects etc.). The collaboration between the Portuguese Mining Authority and a Portuguese State owned company was the key success factor for strong improvements in safety issues, soil, water and air quality, mining heritage preservation and reclamation of these degraded



areas for further uses. The last case which was presented was the **Closure and Ongoing maintenance in Lignite mine in Austria** which is considered an informative case study about the risk management approach of abandoned lignite mines in Austria. Innovations concerning the safety of abandoned mines (e.g. development of an appropriate filling material, using GIS technology for identification of polluted area) are remarkable. Several interesting comments followed the complete presentations. The comments highlighted the pressure of the local communities and their role in the closure process.

From the parallel Policy Labs and the open discussions, during the exploring of transferability session some really interesting results have been achieved. These cases have supporting factors which makes them successful either non-policy or policy related. In addition another main goal of Policy lab was to study the transferability of these factors to the other MS.

Overview of the MIN-GUIDE Online Policy Guide

Veronica Cerma presented the updated version of the MIN-GUIDE webpages. The key content include the Online Policy Guide with over 600 entries of mineral policy and legislation documents both on EU and Member State level. There are also a number of innovation case sheets available, and during the course of the project more will be added. The website also contains information and reports from past and upcoming events, as well as downloadable reports from the project.

Discovering Future Pathways for Innovation and Supporting Policies in Waste Management and Mine closure – Part 1

During the subsequent group discussions, that follow the same format as the interactive activities in the Policy Laboratories, participants were asked to form groups of six persons. The objective of the activity was for participants to reflect upon the needs, gaps and future pathways on the topic of innovation in waste management and mine closure. Each participant was then requested to spend five minutes in a silent ‘brain-writing’ exercise, in order to reflect upon these topics and capture three responses addressing the needs and gaps within these areas. These responses were then collected within the individual groups. Each group was then tasked with discussing the needs and gaps they had written down, thus cross-fertilizing the ideas and perspectives of the different individuals. After discussing amongst themselves, they were required to select the three most important needs and gaps. Participants then wrote down the three most important aspects, and were subsequently asked to discuss the necessary ‘next steps’ for the three most important needs and gaps they chose. The results of this activity were then presented to the entire group. The results of each group can be seen in the following Tables.

Group 1

Needs and Gaps	Future steps
Lack of database on the type of waste	An adequate and comprehensive database (Inventory)
Governments to provide the resources for consistent inspection of the application of environmental terms of mine projects in order to obtain the trust of public.	More funds are needed



Group 2

Needs and Gaps	Future steps
Communication with local community and the public involvement	The good practice principles to include the resolution of conflicts
The standardized steps for the mining activity ceasing should be upgraded to a different level with roadmapping (economic impact, social impact , biodiversity)	Strict inspections and fee imposition when closure provisions do not fit into land use development plans

Group 3

Needs and Gaps	Future steps
Lack of dissemination of successful cases	Dissemination activities (projects, workshops, Newsletters, etc.)
Enforcement of regulations	Need of experts/skilled professionals

Group 4

Needs and Gaps	Future steps
Compilation and Codification of EU environmental regulation related to water and waste management	<ul style="list-style-type: none"> • Relevant DG to assign the project • Consistent education of public servants & environmental auditors and other relevant professional bodies
Active participation of stakeholders concerning the selection of the appropriate land use after mine closure	This procedure to be included in the relevant legislation and environmental terms and financial guarantee

Group 5

Needs and Gaps	Future steps
How to secure funding	Priorization of structural funds
Review MWD to include offshore waste disposal sites	Data Harmonization on Mining Waste sites

Group 6

Needs and Gaps	Future steps
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Research for more effective methods and application of new technologies	Focus on Waste Facilities because there are new potential of raw material
Post closure monitoring of liquid and solid waste is not sufficiently established	Elaborating post-closure monitoring guide

Discovering Future Pathways for Innovation and Supporting Policies in Waste Management and Mine Closure - Part 2

A panel discussion followed among Helena Viegas (Policy officer from DG Internal market, Industry, Entrepreneurship and SMEs, European Commission) and **Florence Limet** (Policy Officer from DG Environment, European Commission), **Diamantoula Lampou** (Representative of Greek Ministry Environment and Energy), **Katerina Adam** (Assoc. Professor in NTUA, Policy Specialist) and **Antonis Politis** (Project Manager in NTUA). The discussion moderated by **Gerald Berger** (WU Wien). Regarding innovation in the waste management and mine closure sectors, and the links to policies and legislation, Helena Viegas pointed out that mining legislation is a MS competence and the role of the Commission is mainly to facilitate the exchange of good practices including on framework conditions and to support the development of R&D&I projects to improve the environmental and safety management of mining waste, the acquisition and harmonisation of data and the recovery, in particular of CRM, from the mining waste. Florence Limet explained what the next steps are on the finalization of the Best Available Techniques Reference (BREF) document on extractive waste management. She emphasized that the so called "innovation cases" in waste management that were presented during the workshop should not prejudice discussions that are currently taking place with the entire extractive sector, Member States and the civil society in the framework of the revision of this BREF document. Representing the ministry side, Diamantoula Lampou stressed the fact that in Greece there are many closed mine/quarry sites remediated by private investments (e.g Milos vineyard, Vagonetto mining park), and there is a gap in the Greek mining legislation in relation to post closure management and the alternative uses after the end of the mining activity. Greek authorities are currently working in order to identify the framework and the conditions for alternative uses according to existing successful practices from other countries. From the academic perspective, Katerina Adam highlighted the importance of stakeholders' involvement in the public consultation for the construction and operation of Extractive Wastes Facilities, as well as for the optimization of the final closure plan and the post closure land use in the area. The benefits stemming from the exchange of views amongst the different stakeholders in obtaining the social license of a new EWF and/or the evaluation and selection of the closure scheme to be employed were noted.

Finally, Antonis Politis stressed out that Policy plays an important role in setting the minimum requirements for a proper Mine Closure application. However, the good practices and good case studies in Mine Closure do not arise from policy instruments, but from Corporate Social Responsibility practices. These are the examples that put a good name in the raw materials sector and maybe through regulation this could be the rule instead of the exception. He mentioned the importance that initiatives at EU (like RMI, EIT RM, Directive 2006/21/EC, BAT document, etc.) and National level improved environmental conditions of Waste Management and Mine Closure and it is crucial to maintain the Raw Materials sector in the EC political agenda and priorities. Following, he made a distinction and said that good practices related to Waste Management are mainly Policy and business driven, while in Mine Closure are either Policy or Industry driven. Finally, he closed with some radical ideas and feed for thought for the audience by stating that Mine Closure could be



altered to a Post mining activity, where this is will alter the mindset and turn it from cost into investment. Maybe a legal framework to turn this into standard procedure could be an option; a second radical idea he mentioned is that in EU we fall in many outdated Legal framework and is mandatory to create some kind of a dynamic legislation, because innovation of today in mine closure might not be in 20-30 years from now.

Conclusions and Next Steps for MIN-GUIDE

In the concluding session of the workshop, the facilitator, **Gerald Berger**, congratulated the participants for a very intense and interactive two-day workshop! He gave a reminder about the Annual Conference to be held in Brussels 13-14 December 2017 and the **5th MIN-GUIDE Policy Laboratory on “Mining data in Europe** to be held in **Madrid, Spain**, next year. He also informed the Participants on website updates and regular newsletters.