



MIN-GUIDE project overview and links to SLO

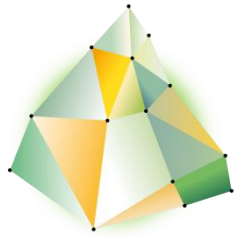
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Chair of Mining Engineering and Mineral Economics,
Montanuniversitaet Leoben
MIREU SLO Workshop, Rovaniemi, 8-9 May 2018



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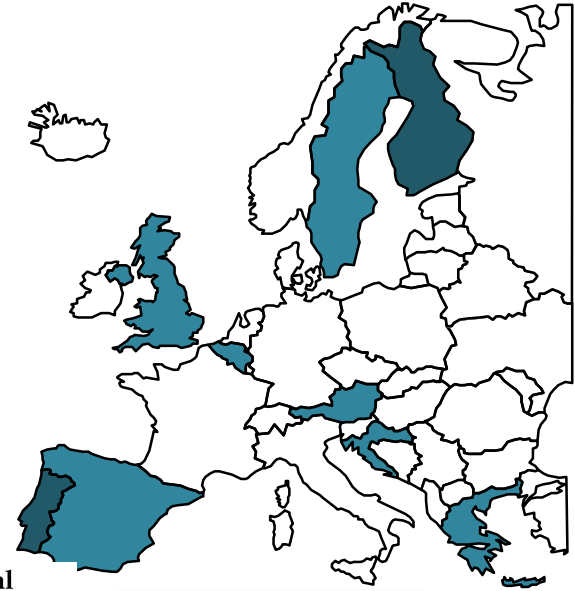




MIN-GUIDE – Facts & Figures

- Coordination and Support Action
- 3-year project: Feb 2016 - Jan 2019
- Project Coordinator:

Institute for Managing
Sustainability **WU**



- 10 Partners
- 9 countries



**UNIVERSITY OF
WESTMINSTER**



**University of
Zagreb**



GOAL



Contribute to an innovation-friendly policy framework for a secure and sustainable supply of minerals.

ACTIONS

POLICY GUIDE



600+ Policies
29 Country profiles

5 WORKSHOPS



200
Policy makers

3 CONFERENCES



600
Stakeholders

BENEFICIARIES

TIER 01

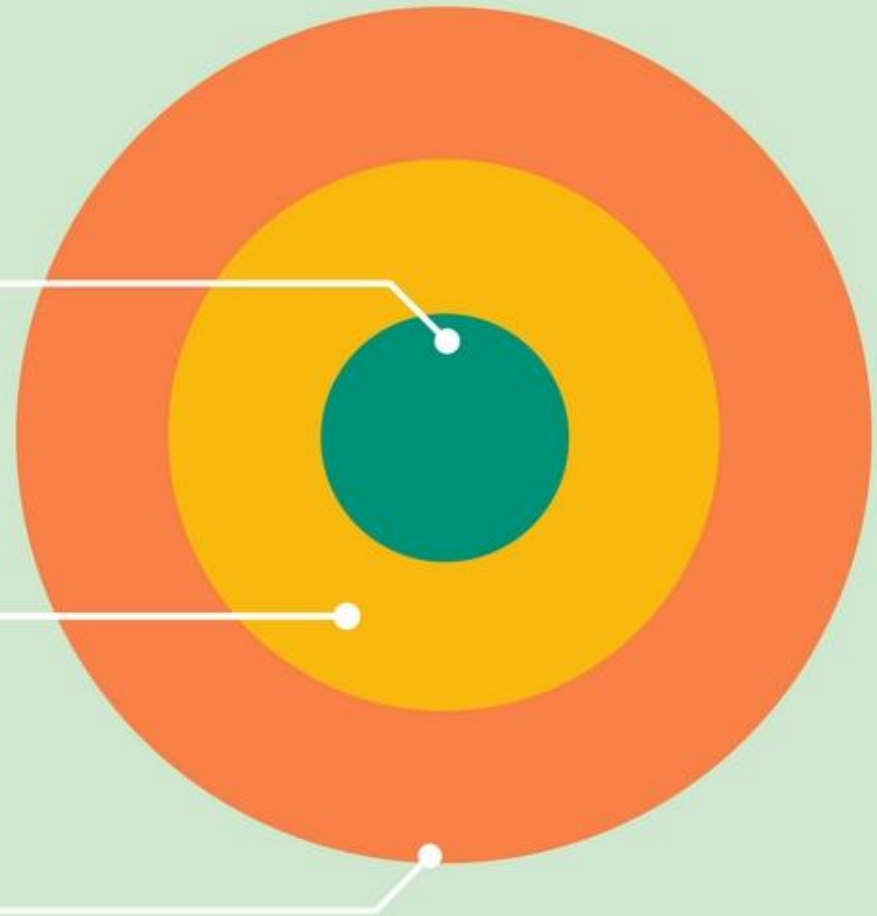
- Policy makers
- Geological surveys
- Industries

TIER 02

- Policy makers in related sectors
- Labour unions
- Business

TIER 03

- Academia
- Civil society organisations
- Consultancy



IMPACT



**Better informed
decision-making**



**Up-to-date and
user-friendly database**

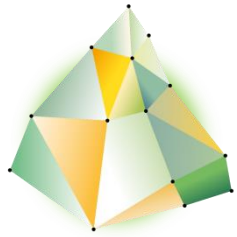


**Facilitated
knowledge co-creation**



Project results

The link to SLO



Activities and Outputs

SLO links

Project scope

Policy

Good
Governance

Mining value chain elements

Exploration &
extraction

Mineral &
Metallurgical
Processing

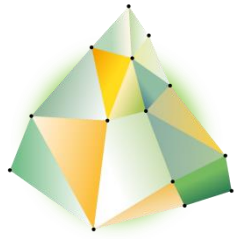
Waste
management &
mine-closure

Information
standardisation

- SLO not a direct project focus, but:
- Multi-stakeholder involvement
- Sustainability impact criteria

List of
policies,
projects
and
initiatives



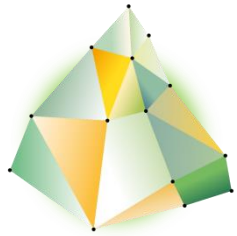


Activities and Outputs (2)

SLO links in the policy guide



- Online, transparent, understandable language on non-technology (policy) and technology (innovation cases) related information
- Mineral policy governance – stakeholder involvement mechanisms – case examples (incl. Finish Network for sustainable mining)
- Innovation case examples across the value chain – impacts based on sustainability criteria



Deep dive example

Innovations in extraction

Extraction-innovations
Autonomous equipment/operations including use of robotics, smart sensors and 3D printing
Process control & (big) data management („real-time information and mass flows“)
Continuous processes and automation
Resource characterisation
New models for financing of mining
Lower environmental footprint (ie biodiversity, ore recovery, energy and CO2, water, waste)
New-/Alternative mining methods (in-situ leaching, mechanical cutting to replace DLB, etc)
Digitally enabled worker including remote operation centres, virtual and augmented reality, virtual collaboration
Transparency and traceability including open platform databases, block chain usage
Surveying methodology and mine design
Scale up of production equipment
Resource characterisation for better structural control
Integrated platforms, enterprise ecosystems incl. IT/OT convergence, asset cybersecurity
Next generation analytics and decision making including Artificial Intelligence, simulation modelling
Land-use planning governance (site level vs. Cumulative impact at regional level) -- data will allow models/analysis as part of regional development plans
New business models and customer relations (collaborative business models, customer responsibility)
Dealing with extreme environments (deep sea mining, extreme depths, arctic...)
Various safety innovations including cultural changes
Better skills base
Better infrastructure, i.e. electricity and „mine to market“

- First two considered key
- NGOs: more innovations needed concerning transparency, land use, environmental management
- No “single bullet innovation” concerning sustainability challenges – mix needed
- Strong “inside out” ,economically driven , focus on technology – might change the societal contract of mining
- Decoupling vs. efficiency improvements?
- Consumer influence?
- **MIREU**: Regional uptake and impact ?



Information access: www.min-guide.eu



ABOUT

MINERALS POLICY GUIDE

POLICY LABORATORIES

ANNUAL CONFERENCES

PROJECT RESULTS

MEDIA



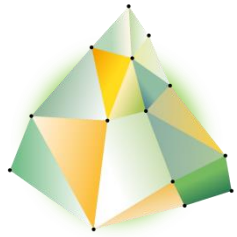
Mineral Policy Guide

The MIN-GUIDE project addresses the need for a secure and sustainable supply of minerals in the European Union by developing a Minerals Policy Guide.

The Guide contains information about mineral and related policies, as well as governance at the Member State and EU level.

To consult the Guide, select a country on the map or use the Advanced Search.

> EXPLORE ADVANCE SEARCH



Thank you for your
attention & see you
in Brussels in
December!

