



GSEU

GEOLOGICAL SERVICE | **FOR EUROPE**

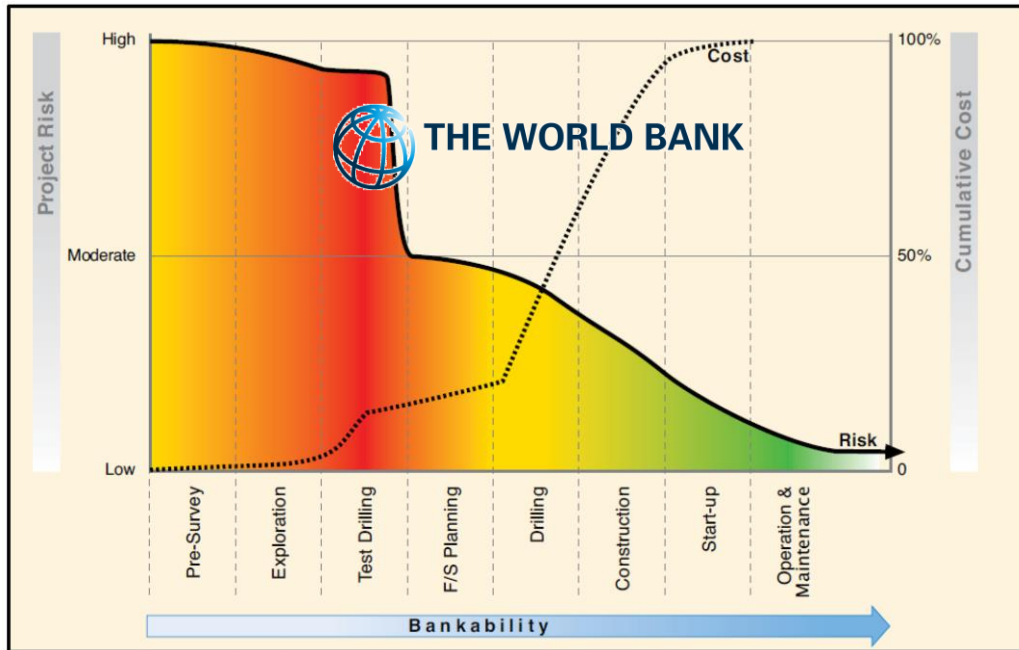
BRINGING THE SUBSURFACE INTO THE LIGHT





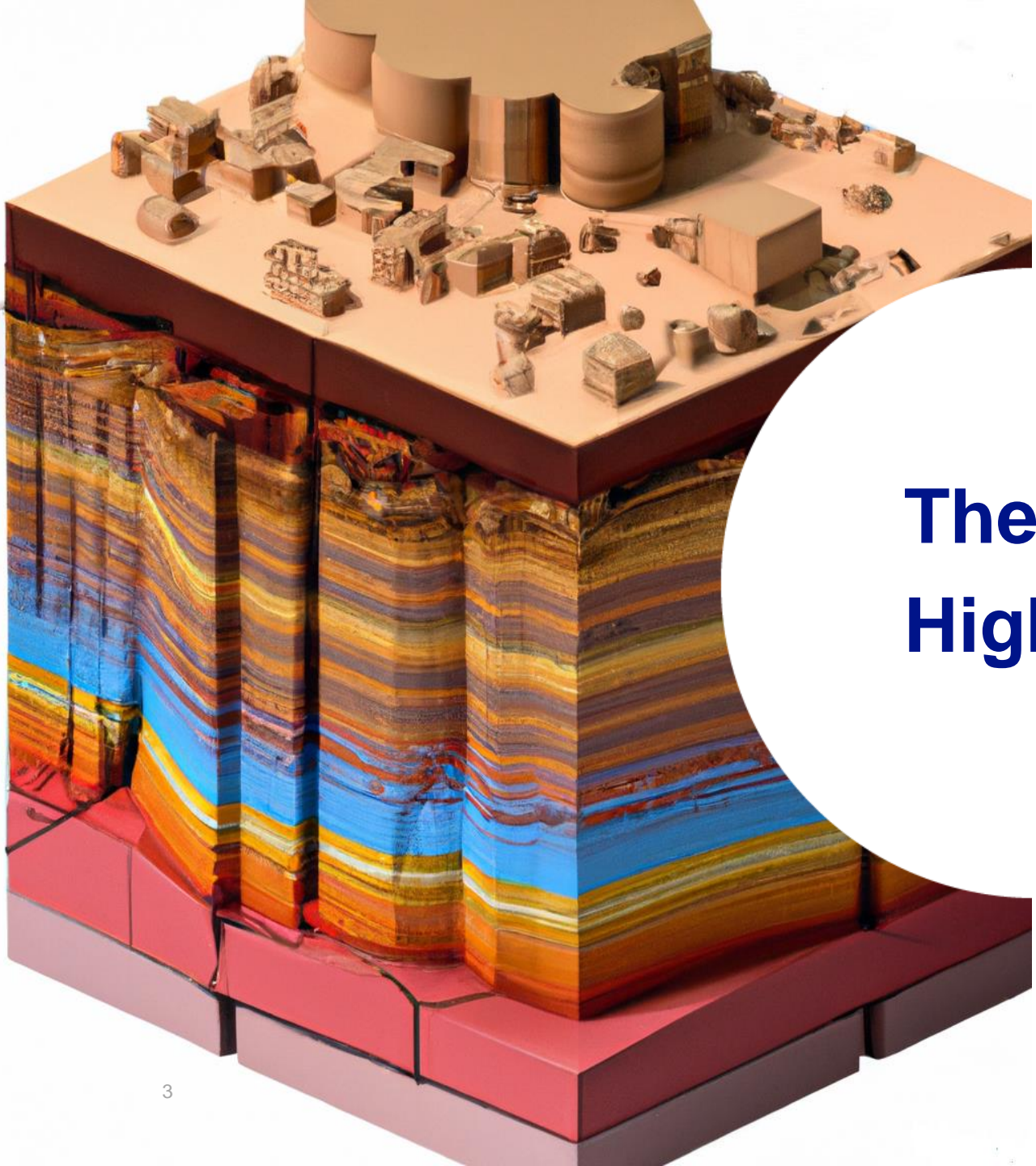
Why a Geological Service for Europe?

FINANCIAL TIMES
EU sounds alarm on critical raw materials shortages



Europe's groundwater – a key resource under pressure
Europe's groundwater — a key resource under pressure
 European Environment Agency





**There is a Critical Need for
High-Quality Subsurface Data!**



Objective

The overall objective of the **GSEU** project is to establish a **Geological Service for Europe** as a permanent **collaborative network of European geological survey organisations**.



GSEU will structurally address specific challenges in the **sustainable management of the subsurface** at EU and national level.



From Geological Data to Policy Support

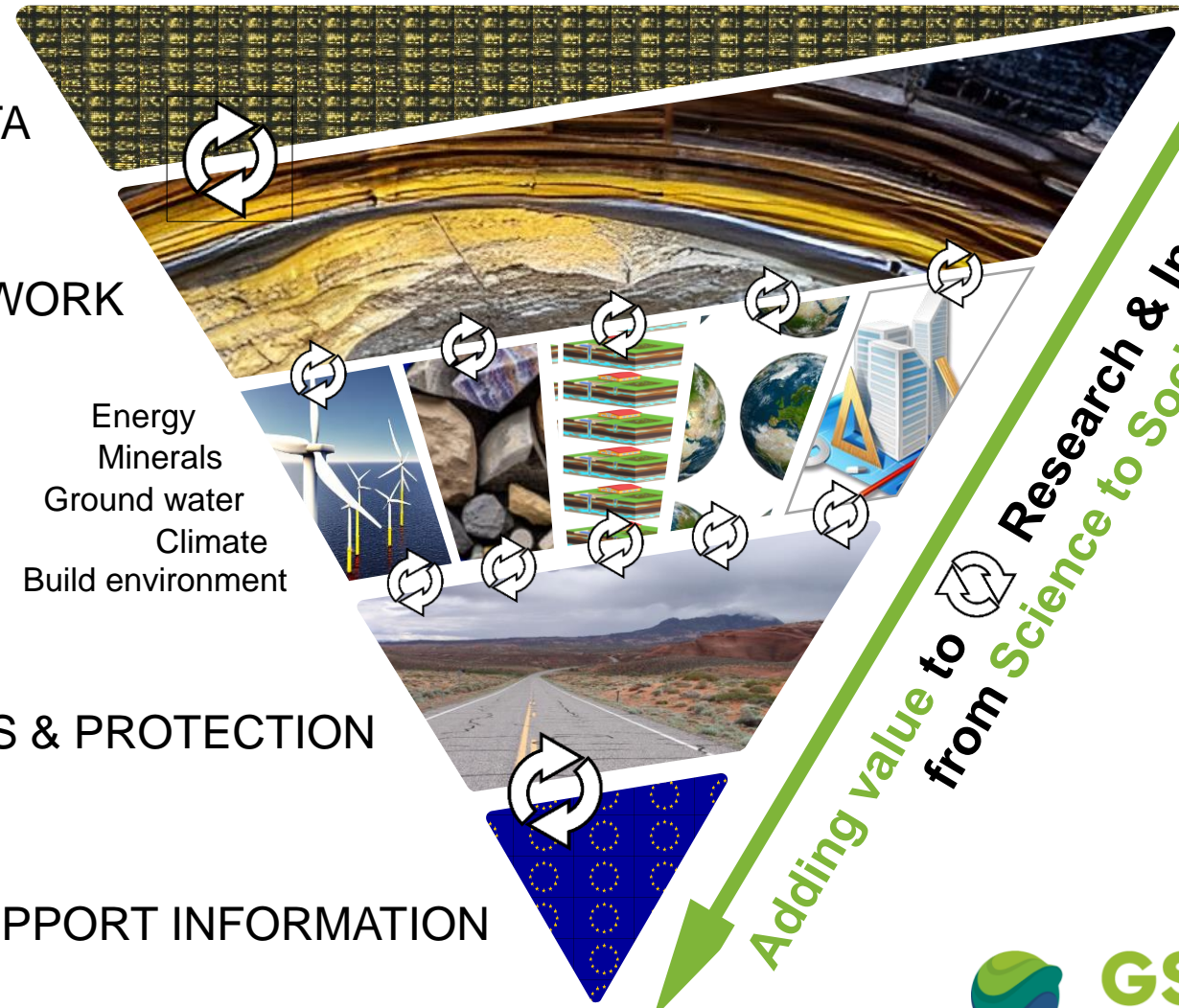
INTEROPERABLE GEOLOGICAL DATA

3D GEOLOGICAL FRAMEWORK

Energy
Minerals
Ground water
Climate
Build environment

IMPACTS & PROTECTION

DECISION SUPPORT INFORMATION



*Adding value to Research & Innovation:
from Science to Society*



Past ... Present ... Future ...

2010



2014



2015



2021



2022



2027





Consortium



Consortium Members

National and Regional Geological Surveys are collaborating to build a **permanent network of organisations** focusing on the planet itself: the earth beneath our feet.



- Geological surveys perform systematic investigation of the Earth's subsurface to gather data on its composition, structure and evolution
- Our knowledge and expertise are crucial in addressing challenges in the areas of:
 - Environmental and health protection
 - Drinking water supply
 - Protection against natural disasters
 - Land management
 - Exploration and sustainable management of mineral resources
 - Energy transition
- Our aim is to provide knowledge to society and industry, including mining, energy supply, civil engineering and environmental science, to put research into practice, to make science accessible and to inform the general public.



Pan-European Challenges



Cross-border Solutions

In order to address **transnational** and **continental-scale subsurface problems** we need to be able to zoom out and go beyond national borders.





Project Coordinator



The Geological Surveys of Europe



Research

Joint research with EU policy impact



Infrastructure

Harmonising pan-European geological data



Outreach

Sharing knowledge, capacity and research infrastructure

EuroGeoSurveys is a not-for-profit organisation representing the Geological Surveys of Europe.

Through the collaborative research and activities of Expert Groups and Task Forces, and the provision of open-access, harmonised geological data infrastructure, **EGS provides the European Institutions**, regulators, industry, and the public, **geoscientific data-based advice** to address key societal challenges.



Project Structure



Project Structure





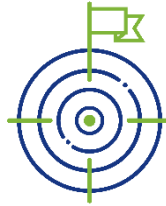
Areas of Expertise



Raw Materials



Raw Materials



Objectives



Impacts

- Re-evaluate European resources of **primary critical raw materials in on- and offshore fields**, to **evaluate mining waste resources**
- Create an **International Centre of Excellence on Sustainable Resources Management (EU ICE-SRM)**
- Promote the use of the **United Nations Framework Classification (UNFC)** and the **United Nation Resource Management System (UNRMS)**
- Increase the **sourcing of critical raw materials from primary and secondary sources in Europe**
- Decrease Europe's dependence on imports
- Intensify the competitiveness of European power generation, energy storage and related transport technologies





GeoEnergy Resources



GeoEnergy Resources



Objectives

- Provide **pan-European inventories, characterisations and knowledge** of geothermal energy resources, underground capacities for CO₂ sequestration and the temporary storage of sustainable energy carriers



Impacts

- Improve planning, regulation and decision-making to enable a responsible and effective uptake of GeoEnergy
- Improve the alignment of cross-border GeoEnergy developments
- Accelerate the efficient and competitive uptake of clean and sustainable GeoEnergy and storage technologies

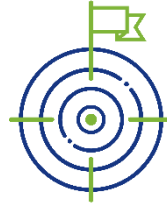




Groundwater Resources



Groundwater Resources



Objectives

- Support the efficient and sustainable use and protection of European groundwater resources
- Improve data collection and management at national and EU level
- Apply data for monitoring, forecasting and evaluation of groundwater quantity and quality



Impacts

- Protect Europe's groundwater resources
- Improve policy-relevant data on strategically important groundwater resources for drought management
- Improve methods for monitoring, visualising and mapping groundwater quantity and quality patterns, and capacity for temporary storage

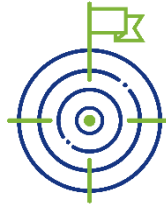




Coast and Sea



Coast & Sea



Objectives

- Enable governments, regional and local authorities, industry, cultural heritage organisations and the marine research community to make informed decisions about the sustainable development, management and protection of coastal areas and the seabed



Impacts

- Support the sustainable development, management and protection of coastal areas and the seabed
- Optimise the deployment of offshore wind farms and associated infrastructure





Geological Framework Setup



Geological Framework Setup



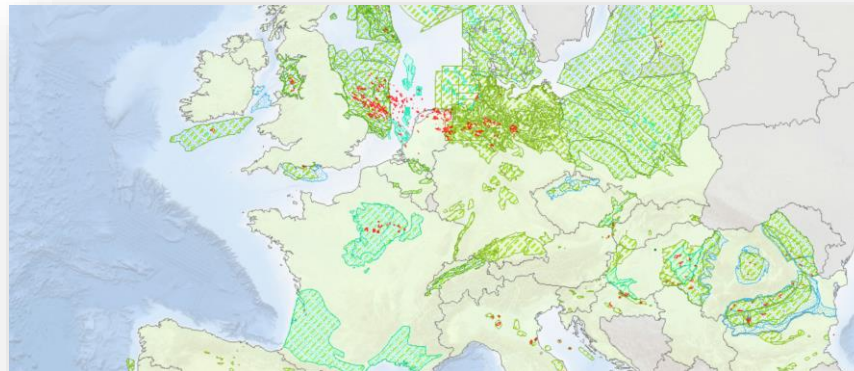
Objectives

- Set up comprehensive metadata of European geological maps, map data sets and 3D-models
- Develop the framework and vocabularies for harmonised pan-European maps and 3D models
- Share best practices for 3D geomodelling and visualisation
- Demonstrate the cross-thematic use of a geological framework for decision support



Impacts

- Strengthen international cooperation on scientific standards required by third party applications
- Improve the European Digital Geological Information System by providing 3D geological frameworks
- Strengthen the foundation for decision support by providing science-based geological advice on Europe's subsurface on- and offshore





EGDI

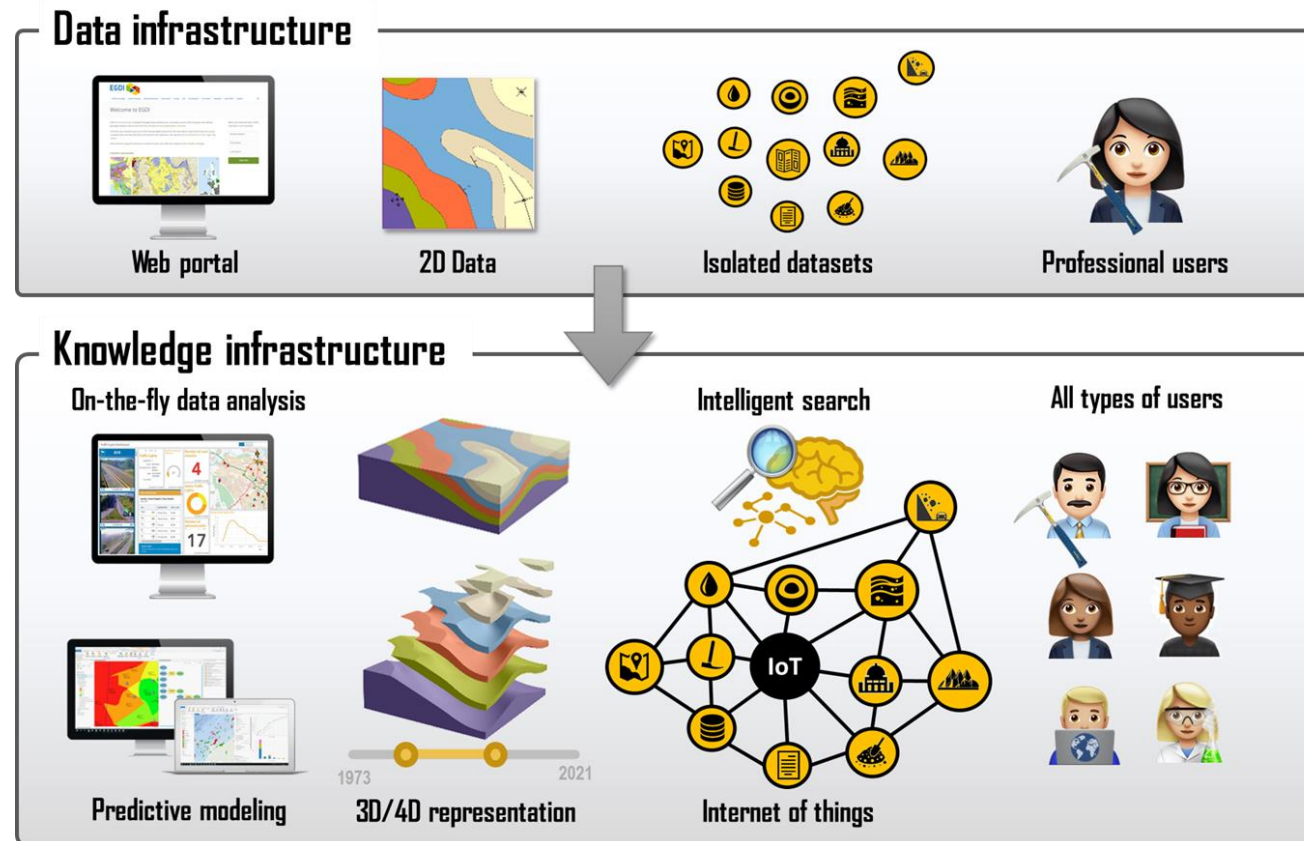


GSEU
GEOLOGICAL FOR
SERVICE EUROPE



European Geological Data Infrastructure (EGDI)

The EGDI platform will be taken to a new level by transforming the current data infrastructure into a **knowledge infrastructure**, supporting the delivery of knowledge to policy makers and other stakeholders.





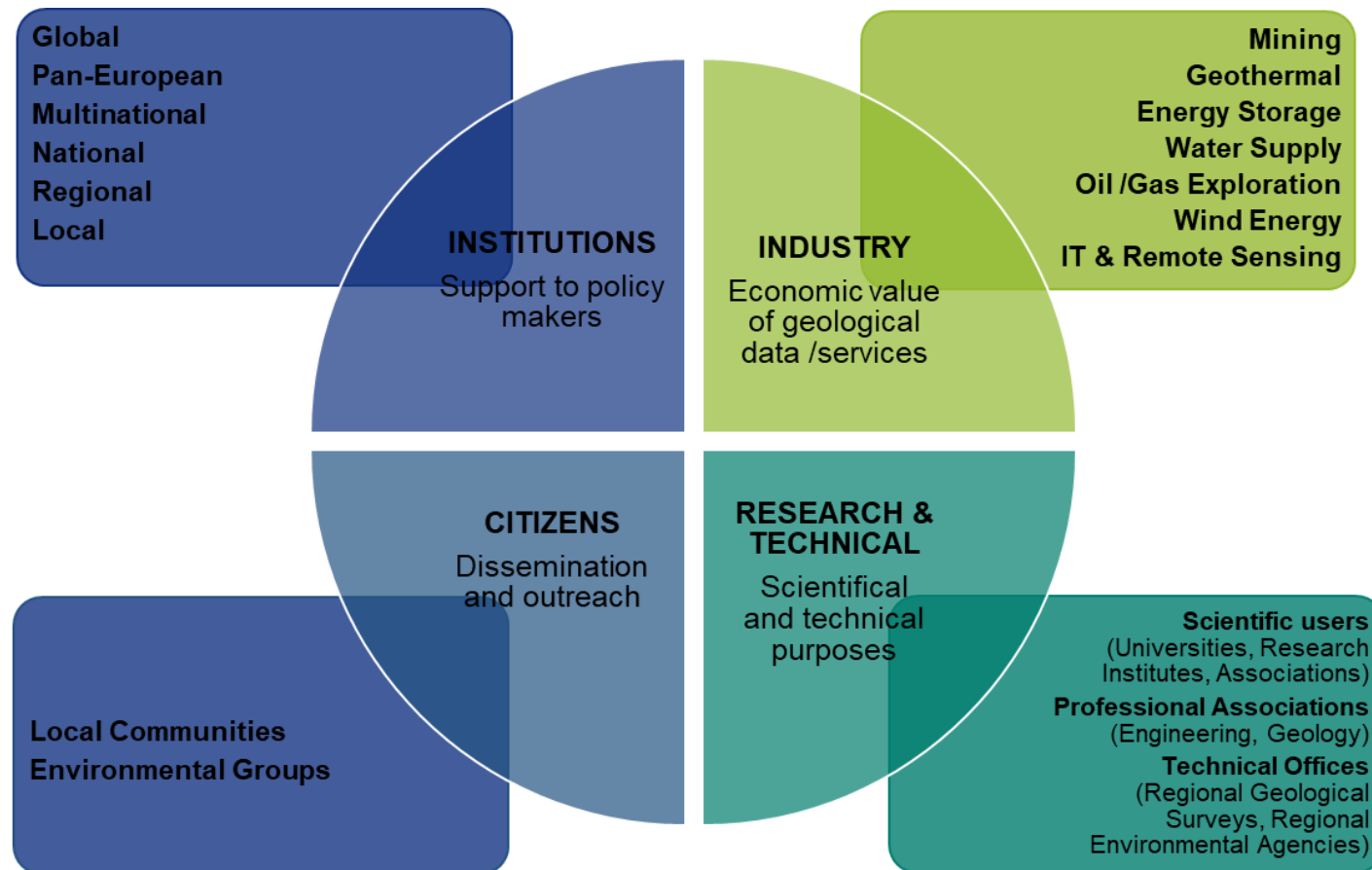
**Stakeholder
Engagement**

Maximise Social Impact



Stakeholder Engagement

We aim to inform and support a broad range of stakeholders through a programme of communication, dissemination and exploitation – to raise awareness of the critical value of the earth beneath our feet and its role in a sustainable future.



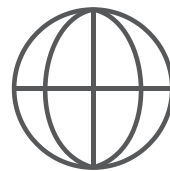


**Bringing the subsurface into the light -
drawing together the baseline data and
knowledge needed to manage Europe's
natural resources and reach Net Zero**



GSEU

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Funded by
the European Union

