

○ Recommendations on licensing and EIA

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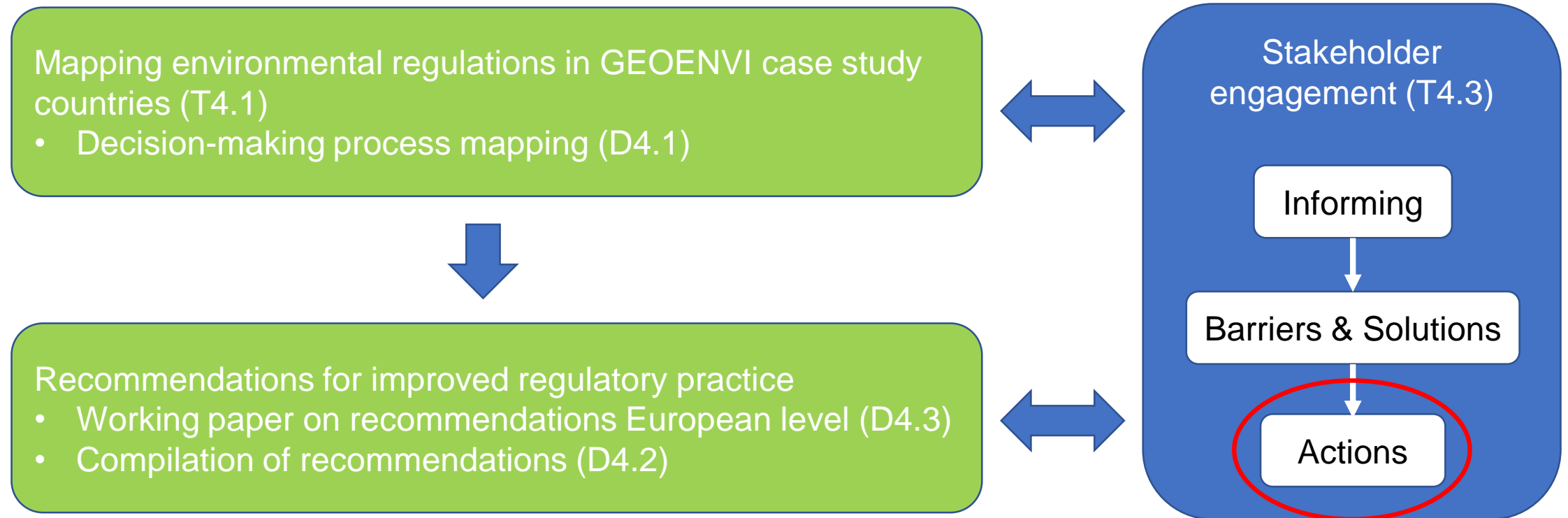
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○ **Ambition**

GEOENVI Work Package 4

- Map and analyze the current status of environmental regulations and practices for deep geothermal energy development
- Develop recommendations for establishing an European frame for environmental regulations of deep geothermal
- Engage with stakeholders and decision-makers to develop recommendations to improve environmental regulatory practice

○ Work package structure



○ Recommendations on environmental regulations

[Deliverable 4.2](#) / [Deliverable 4.3](#)

Technical topics:

- Seismicity → **March 9th**
- Aeriform emissions → **March 2nd**
- Aquifers' interferences and physical disturbances
- Discharge of geothermal fluids

March 18th

Process topics:

- Complex licensing and delays
- Environmental Impact Assessment (EIA) } **Today**
- Information sharing
- Local Benefits } **March 16th**
- Public participation
- +
• Life Cycle Assessment and finance → **April 13th**

 **Policy briefs to be published on the GEOENVI website**

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○ **Process topics**

COMPLEX LICENSING & DELAYS

○ Challenges

How to avoid as much as possible complexity and delays in licensing?

Currently two-stage process (exploration, exploitation) with various specific procedures and timings. However, delays due to:

- Lack of centralized management (except Iceland)
 - Communication between different permitting process actors may slow down procedures
- Environmental Impact Assessment process may take too long (France, Iceland, Italy)
- Insufficient expertise at the side of authorities
- Procedural complexities (interference study, multi-stage EIA, complex forms)
- Financial adequacy issues (Turkey)

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○ Recommendations

1. Organizing the permitting process as a “one-stop-shop”
2. A Best Practices Guide for the national and local authorities and administrations, the project developers, and financial institutions
3. Ensure appropriate competences and skills at the side of authorities
4. Integrating a check of financial adequacy in licensing procedures

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○ **Process topics**

ENVIRONMENTAL IMPACT ASSESSMENT

○ Challenges

Matching a generic regulatory framework and Environmental Impact Assessment (EIA) procedures with the specific nature of individual deep geothermal projects:

- EIA procedures are quite generic across countries, following the EU legislation in the elements the EIA must include.
- In some cases national guidelines are available to the operator (Belgium, France, Italy), but they are not tailored to deep geothermal specificities
- The impacts and thresholds to be considered are defined by general regulations and laws, with generally no prescriptions for mitigation measures
- Even if some exemption of EIA can be granted (Belgium, France, Italy), in practice a full EIA is carried out since extensions lead to similar effort

○ Recommendations

1. Drafting of a dedicated EIA guideline for deep geothermal
 - scope of the EIA to the specific characteristics of the project and of the geological context
 - provide clarity on the EIA process
 - clarity and harmonization of the procedures for EIA exemption
2. More flexibility in the process from exploration to implementation
 - Simplified procedures in case of modification of an already existing environmental permit
 - Partial EIA updates as new information comes available, e.g. full EIA (covering both drilling and plant operation) to be updated after the drilling results are available
3. Ensure appropriate competences and skills at the side of authorities
4. Define Best Available Technologies (BAT) for Deep Geothermal

○ Starting points

- Examples of EIA in different countries and generic EIA guidance documents
- The Flemish handbook on mitigation measures in EIAs (only available in Dutch)
- The Italian guidelines on mitigation measures for deep geothermal (only available in Italian)
- Regional (Tuscany, Italy) decree establishing “Guidelines for limiting atmospheric emissions from geothermal power plants”, which indicates the prescriptions to be used for EIA and is the reference for aeriform emissions and related BAT (only available in Italian).
- The Good Practice Guide for lessons learned from Deep Geothermal Drilling, prepared in France.
- The Handbook for Best practices for Geothermal Drilling, prepared in U.S.A. on 2010.

○ Questions

- Do you recognize the relevance of these recommendations from a national or EU perspective?
- Which practices and documents can be shared to benefit national level regulations?
- How to move to generic EU level guidelines (licensing, EIA, BAT, ...)?
- What are next steps?



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