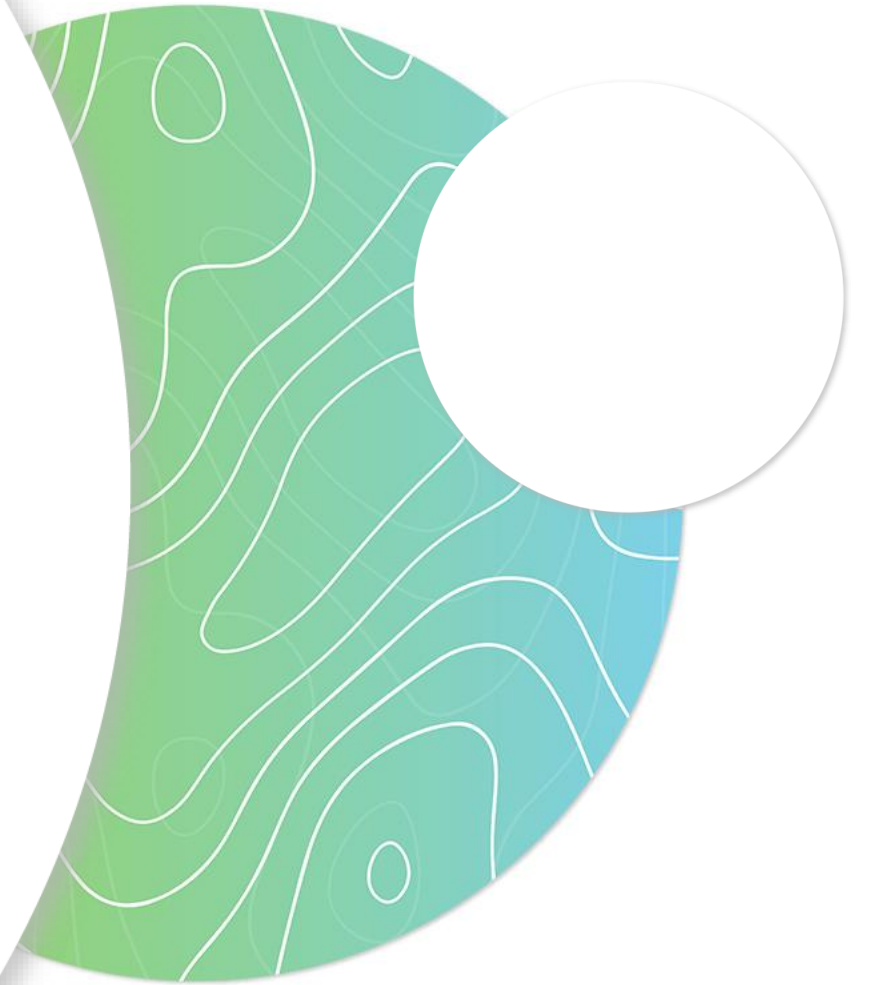


# ○ **GEOENVI project**

Concertation and Support Action (CSA)  
Project overview

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2020 (Italian Meeting)



**Where it comes from...**

**G E O E N V I**

## ○ Where it comes from...

1. The advantages of using geothermal for power production and H&C are not widely known. Recently, deep geothermal energy production in some regions is confronted with a negative perception, and a special attention from some decision-makers, in terms of environmental performance, which could seriously hamper its market uptake.
2. Media reports focus more on disadvantages than advantages. As a result, decision makers and potential investors have concerns about possible environmental impacts and risks involved in implementing geothermal projects, and social resistance often results in practical obstacles - such as significant slowdowns - to the deployment of the deep geothermal resources.

## ○ Relation to the work programme

The H2020 work programme 2018-2020 part 10 on “Secure, clean and efficient energy” is aiming at “Accelerating Clean Energy Innovation” by notably making Europe the world leader in renewables. One crucial aspect for the future energy system is the extensive use of renewable such as deep geothermal technologies.

GEOENVI fully addresses the specific challenge and three scopes of the H2020-LC-SC3-RES-28-2018 topic “Market uptake support”.

The GEOENVI project answers some important market-uptake challenges:

- Recommendation for **harmonization of regulations**, **Life cycle assessment** approaches, environmental impact methodologies of renewable energy solutions;
- **Development of tools** (methods and models) for environmental impact assessments of renewable energy projects;



## The Project



G E  E N V I

## ○ Consortium

Participant No*	Participant organisation name	Country
1 (Coordinator)	EGEC	BELGIUM
2	RETE GEOTERMICA	ITALY
3	ENEL GP	ITALY
4	COSVIG	ITALY
5	CSGI (Italian consortium of research group)	ITALY
6	CNR-IGG	ITALY
7	BRGM	FRANCE
8	ES-géothermie	FRANCE
9	Paris Minetech	FRANCE
10	MBFSZ	HUNGARY
11	ISOR	ICELAND
12	GEORG	ICELAND
13	Orkustofnun - OS	ICELAND
14	VITO	BELGIUM
15	JESDER	TURKEY
16	Dokuz Eylul Univ	TURKEY

## ○ Key actors

- **Public environmental institutions and regulatory authorities** > implement and/or make the environmental regulations: exchange on best practices, adopt the GEOENVI recommendations and methodologies, harmonise their environmental regulations
- **Industry & project developers** > develop geothermal projects: consulted on environmental impact and LCA, asked to implement methodologies and tools. GEOENVI aims at representing a variety of power and DH project developers in Europe. These geothermal project developers and operators (more than 70 companies) are represented in GEOENVI, directly and indirectly through geothermal associations
- **Scientific experts** > drafting of environmental regulations for the legislators and define methodologies and tools on environmental impact and LCA for industry (guarantee sustainability).

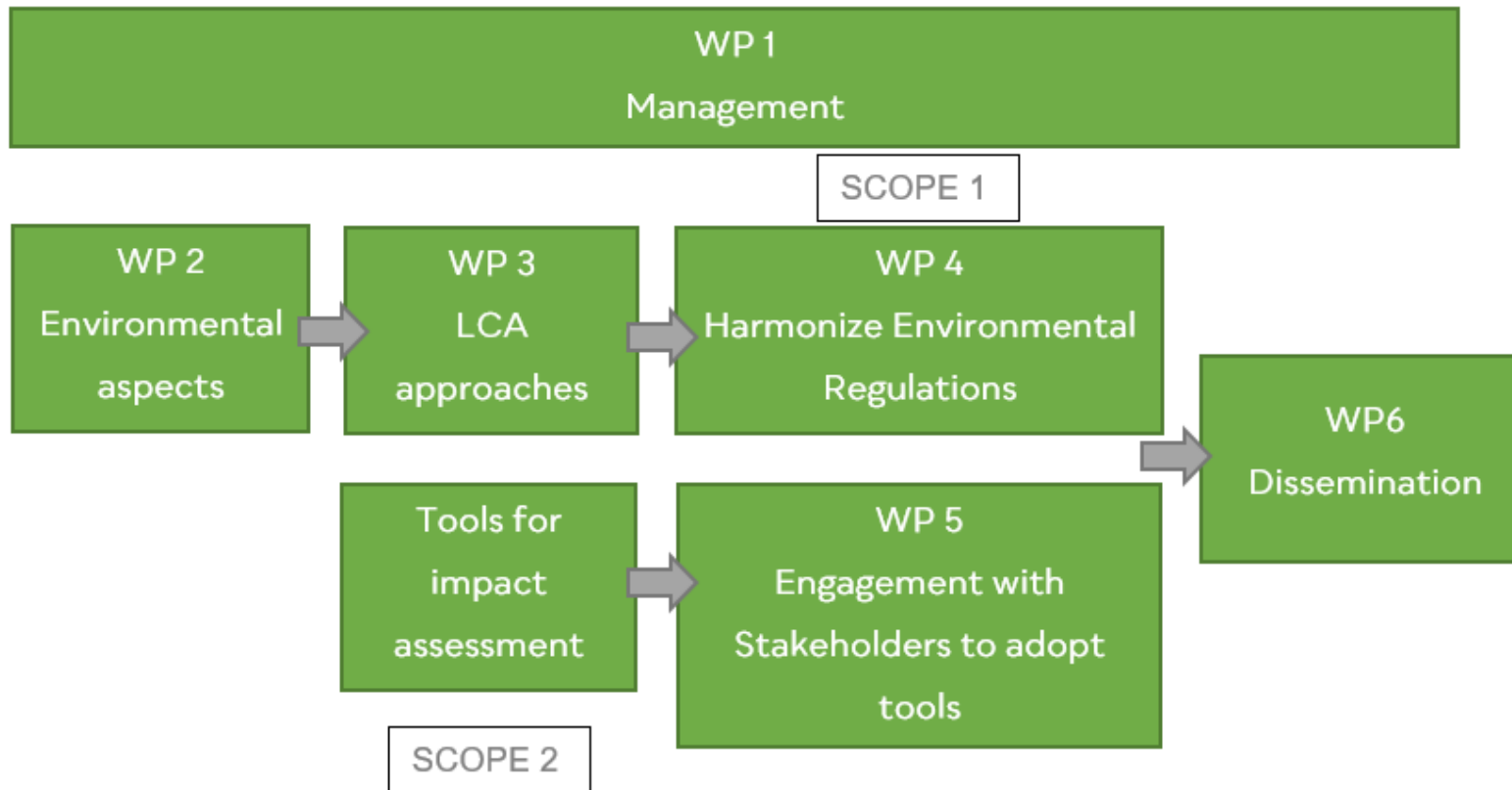
## ○ Target areas

GEOENVI is targeting six countries in a first time:  
**Iceland, France, Belgium, Italy, Hungary and Turkey.**  
During the project results dissemination phase, the objective is to cover the rest of Europe.





## ○ Work Packages



## ○ Technical proposal

### WP 2: ENVIRONMENTAL MATTERS, Months 1-12 (nov. 2019- nov. 2020), BRGM

1. Overall state of the art on deep geothermal environmental data (ISOR)

List of environmental issues: risk, impact and incidents

2. Analysis of mitigation measures (CNR)

Adopted solutions and recommendations to circumvent environmental concerns: **report published, Webinar to come**

3. Stepping back considering other kinds of geothermal applications, renewable energy sources and beyond (BRGM) : **report published**

4. Data organization and reporting (BRGM)

Database on environmental matters **published**

## ○ Technical proposal

### WP 3: LCA METHODOLOGY, Months 1-20 (Nov 2018 – April 2020), Orkustofnun

1. A comprehensive analysis of the panorama of studies reporting environmental assessment & sustainability assessment for geothermal systems (Orkustofnun) (Months 1-12) : **report published**
2. Elaboration of the environmental impact and LCA guidelines for geothermal energy and application to the case studies (CSGI Task leader with main contribution from ARMINES for the LCA guidelines) (Months 3-20) : **report to come**
3. Development of a protocol for the generation of simplified LCA models to assess environmental impacts (ARMINES) (months 12-20)
4. Testing the applicability of the guidelines and the protocol for simplified models with the stakeholders (COSVIG) (Months 12-20)

## ○ Technical proposal

### **WP 4: ENGAGE DECISION-MAKERS, Months 6 to 25 (April 2019 – Dec 2020), VITO**

1. Decision-making process mapping (VITO) (Months 6-25)
2. Formulation of recommendations on environmental regulations (CNR) (Months 10-25)
3. Strategy for engagement and adoption of the recommendations (VITO) (Months 6-25)

## ○ Technical proposal

### WP 5: ENGAGE MARKET ACTORS, Months 6-30 (April 2019 – April 2021), COSVIG

1. Geothermal market actors mapping (GEORG) (months 6-15)

**report to come**

2. Towards the adoption of the recommendation for European life cycle assessment approaches, and environmental impact methodologies of geothermal (OS) (months 16-30)

**training seminar**

3. Stakeholder involvement: adopt the tools (COSVIG) (months 20-30)

**web-based platform for stakeholders**

## ○ GEOENVI Achievements (November 2020)

- Distinction among Environmental Effects, Impacts and Risks
- Definition of BATs for mitigation of impacts
- Critical review of Life Cycle Analysis (LCA) applied to geothermal projects
- Draft of LCA Guidelines for Geothermal
- Definition of standard data collection forms for LCA of Geothermal Projects
- Application of LCA Guidelines to relevant test cases
- Development of a Simplified Life Cycle Analysis (SLCA) approach for preliminary evaluation
- Spreaded knowledge among scientific community and plant operators/developers
- Several dissemination meetings with stakeholders in different countries



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