

Using Life Cycle Analysis for sustainable finance

POLICY BRIEF

The GEOENVI project has developed a tool for performing a **Life Cycle Analysis (LCA) study on geothermal projects**. The **GEOENVI LCA tool** is based on simplified models which can be applied by project developers, operators and regulators on deep geothermal projects: electricity, combined heat & power, and heating & cooling plants.

The added value of this simplified approach is to **quickly perform an LCA with few robust parameters** to obtain accurate estimates of the environmental effects of a geothermal installation. This helps geothermal energy projects to meet stringent environmental criteria to facilitate their licensing, permitting and operation, without administrative and costly burdens.

The simplified LCA model can be used to **fulfill the criteria established by the EU's Sustainable Finance Taxonomy** to access investment capitals.

CURRENT CHALLENGES

Robust guidance to direct investments towards sustainable projects is crucial in achieving the EU's climate neutrality and renewable energy targets for 2030 and 2050. The EU's Sustainable Finance Taxonomy identifies **specific criteria defining a project as a sustainable investment**.

Geothermal energy is recognised by the taxonomy as a solution contributing to climate change mitigation and adaptation, allowing project developers to raise private funding to contribute to the EU's decarbonisation targets.

However, the cross-cutting **100g CO₂e/kWh lifecycle emissions threshold for energy activities was maintained for geothermal**, as there is currently a lack of LCA studies to clearly show that geothermal technologies are well below this level.

Using GEOENVI LCA tool would allow to provide this evidence.

GEOENVI developed an LCA model to quickly assess environmental effects of geothermal projects



Taxonomy kept emissions threshold for geothermal activities.



GEOENVI LCA can prove geothermal projects meet the sustainability criteria



RECOMMENDATIONS



Using the simplified LCA models as a tool for reporting sustainability criteria compliance and safeguarding public acceptance.

How: By using the tested GEOENVI LCA to generate transparent and reproducible LCAs, with the simplified LCA models.

When: Prior to the implementation of projects or once completed, to provide information to stakeholders (e.g. financial institutions, regulatory bodies, local communities, etc.).

Where: Information on LCA tool applied to geothermal can be found on the [GEOENVI Online Platform](#), and the described models can be translated to other sectors.



Transposing best practices from the GEOENVI project. These enable developers, regulators and operators to streamline compliance reporting and environmental impact modelling. Other renewable energy projects can also benefit from these best practices to facilitate their sustainability reporting.

KEY TAKEAWAYS

Decision makers must ensure that the **sustainable finance framework promotes the technologies that can decarbonise the economy.** To that end, it is necessary to use tools that facilitate reporting, transparency and confidence in the robustness of Taxonomy.

To streamline the compliance with the sustainability criteria, the **GEOENVI simplified LCA models should be used to perform environmental assessment studies of geothermal projects.**



For more information on the simplified LCA tool, visit the [GEOENVI site](#).

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G E O E N V I

This policy brief is part of a [series conducted in the framework of the GEOENVI project](#). Its aim is to respond to the need for harmonisation of environmental regulations and to address concerns about potential environmental effects of geothermal projects in Europe. GEOENVI strives to facilitate the incorporation of geothermal strategy in Europe's energy transition, while respecting sustainability and creating a robust strategy to answer environmental concerns. The project developed a unique Life Cycle Assessment methodology for evaluating geothermal projects.



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