

TESTIMONY ON THE STUDY « LCA AND CRITICAL MATERIALS »

19 March 2026

*ENGIE Lab CRIGEN LCA Team
represented by Tatiana Bratec*





OUR CORE BUSINESSES

Renewable energy production and flexibility

- Production of renewable electrical energy and acceleration in green gases.
- Our goal: to provide the right energy, at the right time in the right place.

Infrastructure

- Management of gas transport and distribution networks, storage and LNG terminals.
- Development of electrical infrastructure.
- Management and development of urban heating and cooling networks to support the energy transition of local authorities.
- Implementation of on-site decarbonization solutions for industrial companies.
- Our goal: ensuring energy security and supply for our customers in the regions.

Energy supply to customers

- Sale of energy to residential customers, local authorities and businesses.
- Optimization of electricity generation and storage assets on the energy markets.
- Risk management for our customers.
- Our goal: to provide reliable, decarbonized and competitive energy to all our customers.

ENGIE A FEW FIGURES

30 countries

98,000 employees

€73.8bn revenue in 2024

€10bn average investment/yearly

PRESENT ON 5 CONTINENTS

ENGIE presence as of 31 December 2024.

ENGIE TODAY

Renewable energy production and flexibility

102 GW of installed electricity production and storage capacity.

Including 51 GW of renewable and storage capacity.

Infrastructure

341 heating and cooling networks.

305,600 km of gas and electricity transport and distribution networks.

Energy supply to customers

500 TWh of energy sold to our B2B and B2C customers.

20 M BtoB and BtoC energy supply contracts.

Internal initiatives on raw / critical materials

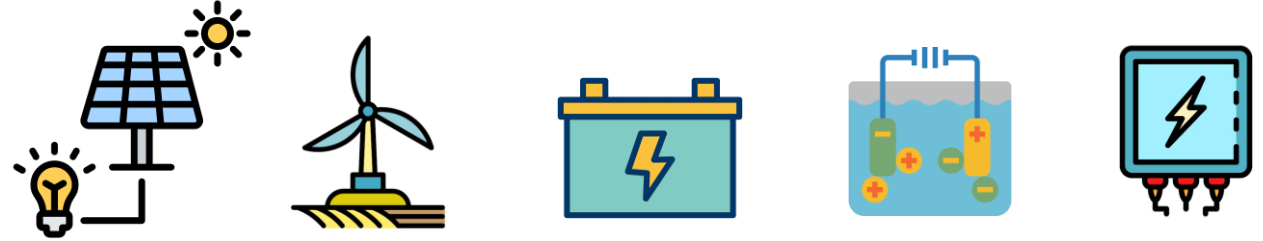
Material risk passport

A tool to assess the supply risks related to materials across the entire value chain



Anticipate

identify *material resources risks* that could hinder Engie's access to critical materials for *renewable technologies*



Simplify

12 distinct risk categories evaluated through a total of *55 indicators* in a single matrix



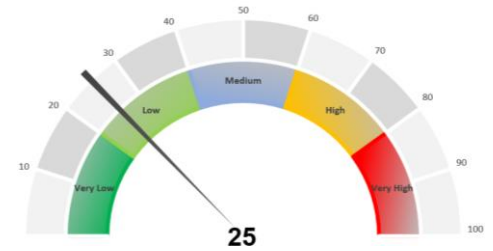
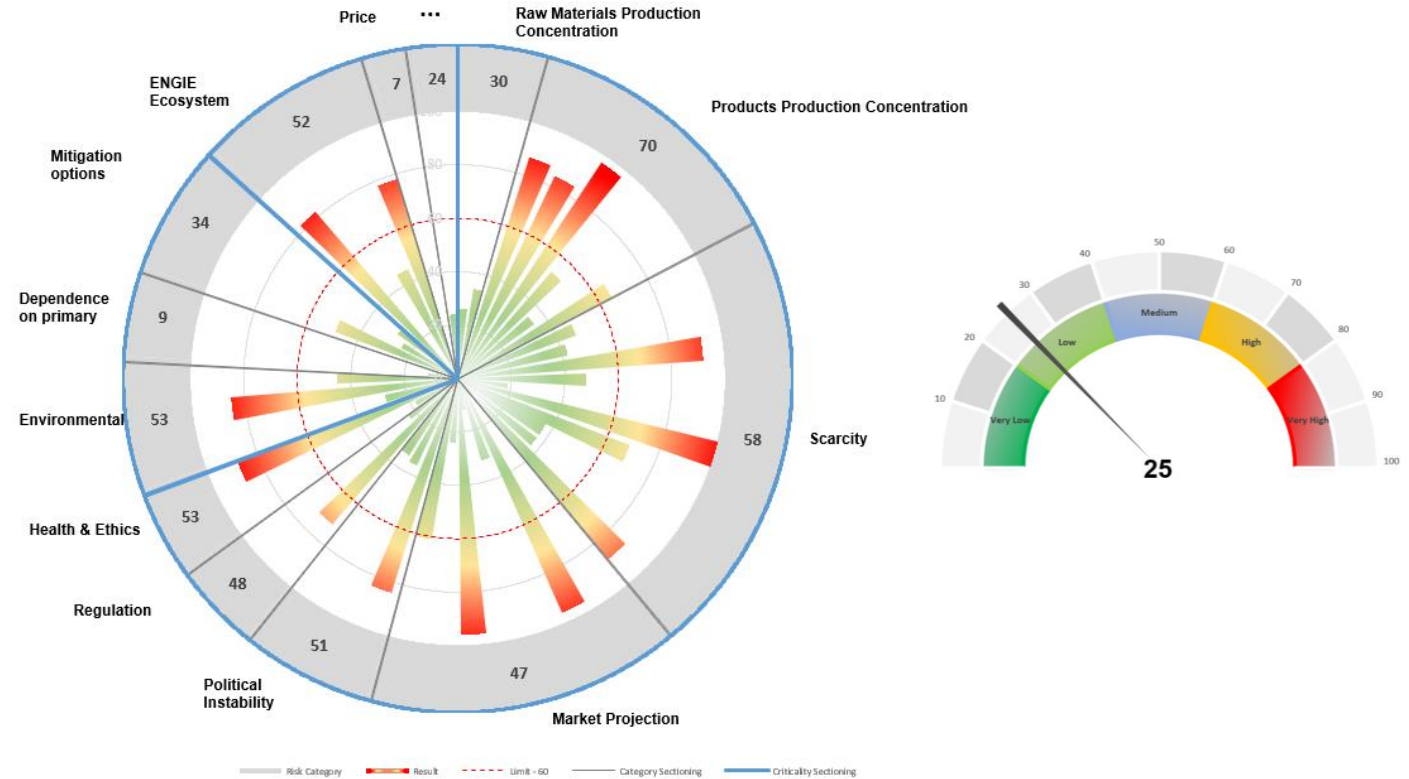
Decide

based on a *comprehensive analysis* of complex challenges across *the whole value chain*



Cooperate

leveraging the expertise of *several GBUs and functions* (ESG, Research, Procurement)



Internal initiatives on raw / critical materials

Biodiversity and environmental impacts related to the sourcing of raw materials required for the energy transition

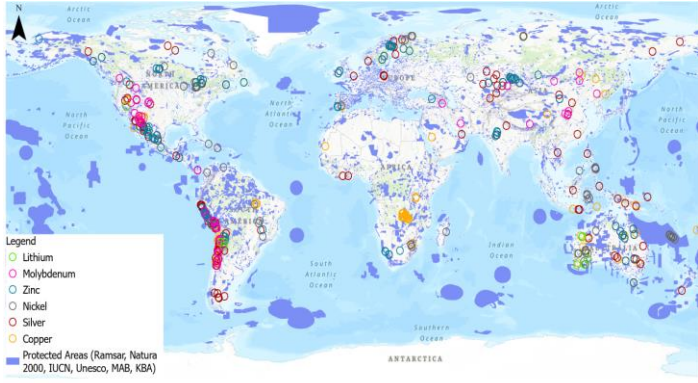
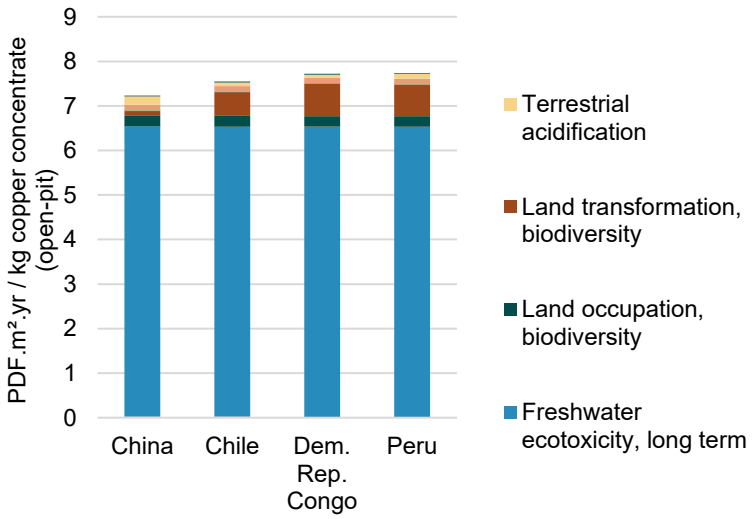
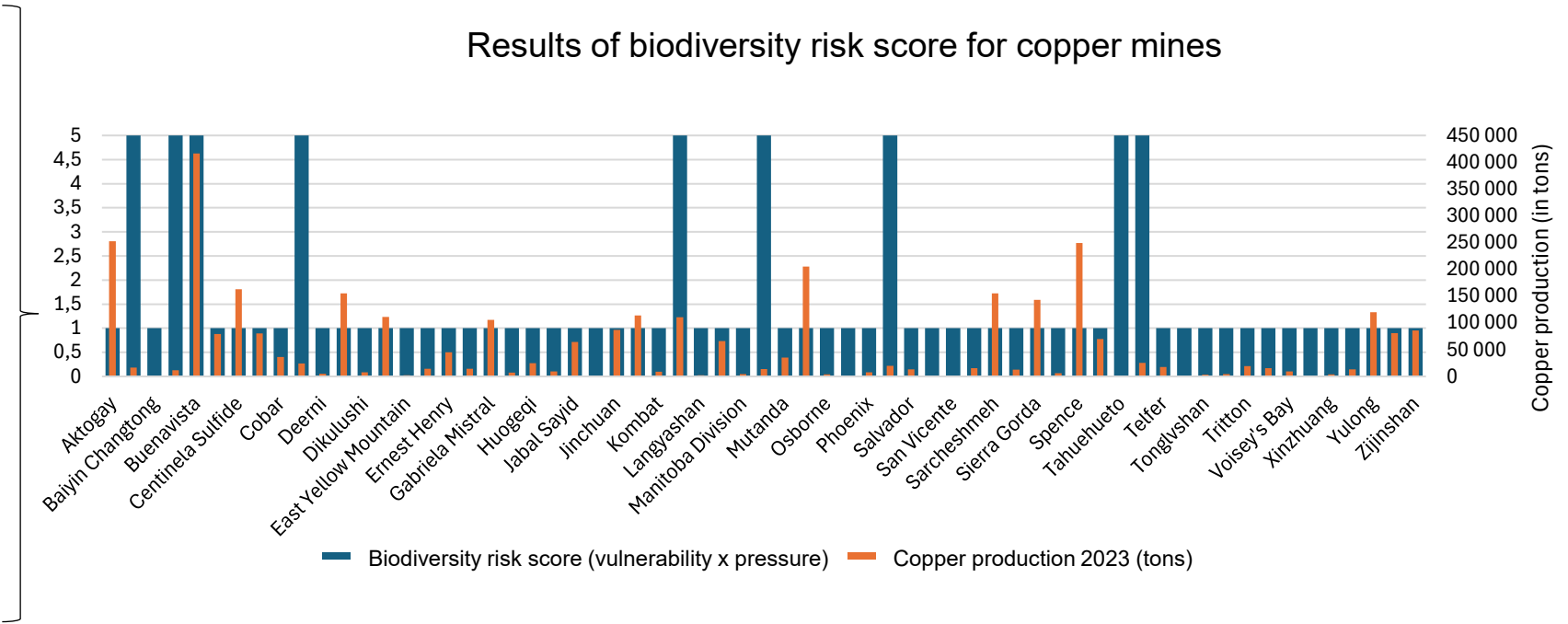


Illustration of the vulnerability proxy: map of mine & protected areas



Example of LCA biodiversity result for copper representing the pressure (mining direct impacts)

Results of biodiversity risk score for copper mines



External projects, where ENGIE participates

Project Information

RAWCLIC
Grant agreement ID: 101183654

DOI
[10.3030/101183654](https://doi.org/10.3030/101183654)

EC signature date
21 October 2024

Start date 1 December 2024 **End date** 30 November 2028

Funded under
Climate, Energy and Mobility

Total cost
€ 4 998 685,00

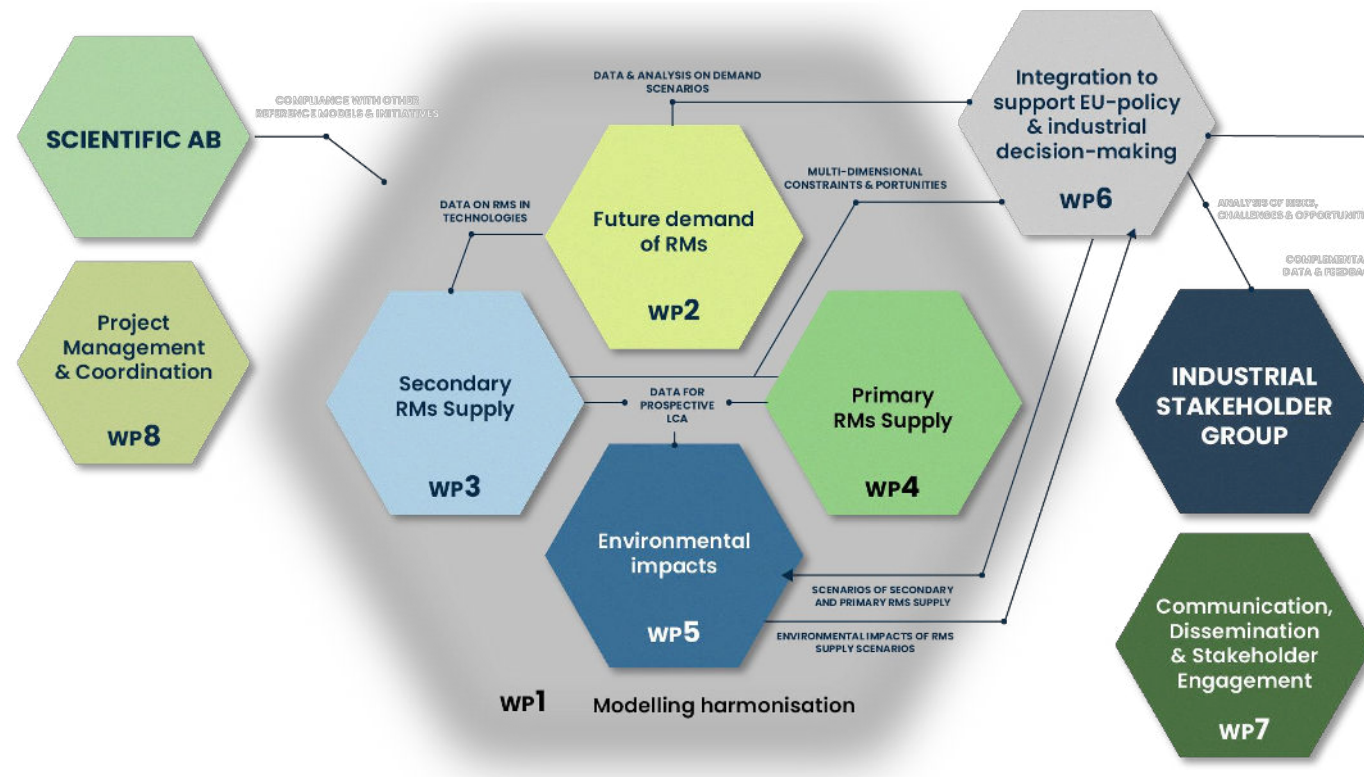
EU contribution
€ 4 998 684,82

Investment in EU policy priorities

| | | | |
|-------------------------|--|----------------|--|
| Digital agenda | | Clean air | |
| Artificial Intelligence | | Climate action | |
| Biodiversity | | | |

Coordinated by
BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES
 France

The RAWCLIC project is an EU funded project that empowers industry and policy decision-makers by delivering critical insights **into the future demand, supply, and environmental impacts of raw materials** in the **EU's twin transition**. By providing actionable insights and strategies, RAWCLIC empowers industry and policymakers to make informed, sustainable decisions for the green and digital transformations.



For more information, refer to <https://www.rawcllic.eu/about>

Key takeaways from « LCA and critical materials » study

- A case study on LFP batteries (a battery type of particular interest for ENGIE) made it possible to better understand the different contributions to the indicator “resource use, minerals and fossils”, which had not been analysed in detail in internal studies. For example, tellurium, a co-product of copper extraction, is not present in the battery itself but appears as a high contributor due to economic allocation of copper.
- In general, the detailed analysis of different methods and approaches highlights what lies behind these concepts and helps guide the choice of method depending on the study’s objectives.
- The study highlights thatecoinvent inventory data are mainly useful for identifying which components use specific raw materials, but they do not allow assessing potential supply risks linked to market structure.
- There were interesting discussions on how circularity strategies affect LCA results and criticality assessments. This aspect has not been fully covered in some internal studies, and the insights provide ideas for possible improvements.



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