

RESiLEX Project – Technological solutions for reusing Silicon and recycling PV modules

The objective of RESiLEX is to improve the resilience and sustainability of the entire Silicon value chain and reduce EU dependence on critical raw materials for solar panel production.

The project's activities will cover the extraction and transformation of raw materials up to the optimisation and recycling of PV modules, but also will create an industrial symbiosis with the battery sector.

The mining industry: innovative solutions for the recovery of CRM from wastes

According to the latest analyses, global demand for critical raw materials (CRM) is expected to have a 500% increase by 2050, causing sharp price rises and increased supply risks in the near future.

In such a competitive environment, the EU's objective is to secure stable supplies, boost its strategic autonomy and decrease its dependency on imports. Today, when it comes to the mining, refining and processing of raw materials, China stands out as the dominant global player.

One way to become less dependent from these imports, would be the development of innovative solutions to recover CRM from mining wastes.



Contributing to this goal, one key activity of RESiLEX deals with:

1. **Characterization of wastes from the mineral extraction sector**, in order to understand the concentration of CRM to be recovered and the presence of other pollutants. This step will be done through physico-chemical analysis, ion-chromatography and ICP-OES/ICP-MS for trace elements. Wastes from numerous and diverse mining sites such as the cobalt mine of Tharsis will be targeted by this study led by Cetaqua.

Resource Recovery treatment train

2. After the characterization phase, Cetaqua and Tharsis will build the bench-scale **Resource Recovery Treatment Train**, which will be composed of 3 main units, illustrated by the image on the right:



Once implemented, Cetaqua will optimize the Resource Recovery Treatment train, in order to maximize its efficiency in each treatment unit and minimize the operational costs. Following the optimization, the purity of the recovered CRM will be assessed for achieving commercialisation standards.

The last phase will concern the possibility of replicating the Resource Recovery Treatment train for the recovery of CRM. Here, the replication plan will allow the identification of secondary raw materials rich in valuable and critical raw materials in other mining operations, geographical contexts and sectors.

WP leader

CETAQUA
WATER TECHNOLOGY CENTRE

Partner contributors



 resilex-project.eu

 info@resilex-project.eu

 [RESILEXproject](https://www.linkedin.com/company/resilexproject)

 **Funded by
the European Union**

Funded by the European Union (Grant n°.101058583) Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.

