

Title: How can alternative raw material sourcing look like in the aerospace sector?

Problem statement

The new sustainable aerospace we are heading towards will see the increase in use of batteries, electrical and electronic equipment, fuel cells, etc. These technologies require significant amounts and a large variety of raw materials, ranging from base metals to plastics, as well as precious metals and critical raw materials (CRMs). Other sectors such as the automotive industry, the maritime industry, renewable energies, will also see their demand in raw materials dramatically increase in the coming years. The EU is reliant on imports for many of these raw materials. Securing these materials is a critical issue that has to be tackled now to prevent shortage in the future. Circularity could ensure the necessary material supply by supplementing primary materials with secondary raw materials. However, aerospace has high standards when it comes to the quality and safety of its equipment.

Research question(s)

What circular r-ladder approaches can mitigate the critical materials challenges in aerospace? What are the waste flows of secondary critical raw materials and what is the status of the current technologies to retrieve these materials? What can be found in the Urban Mine?

Expected type of work

Material inventory, flow analysis



References

- <https://en.acatech.de/project/acatech-horizons-urban-miningund-circulareconomy/>
- [DIGITAL_Final_Report.pdf \(prosumproject.eu\)](#)

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