

## EuroTeQ Collider 2024

Challenge

### Concept for mobile recycling units

Category

**Technology**

Focus

**Research**

**We want to develop a concept for mobile recycling units which can be deployed to remote or underserved areas to process waste locally, reducing the need of long-distance transportation of waste.**

#### **Problem definition**

Waste is globally being transported over long distances, therefore causing CO<sub>2</sub> emissions and creates a complicated and partly unreliable transport infrastructure.

#### **Description**

Our team is trying to develop a concept for a technology which will process waste locally, as energy and material efficient as possible, and is both easy to operate and transport. Through this technological advancement we are aiming to recover significant quantities of materials and reintegrate them into the economy, thereby promoting resource conservation and sustainability.

#### **Key questions**

- Which sort of waste are we targeting?
- What is the traditional recycling process of this sort of waste?
- What happens to the processed waste?
- How can we make the process more energy efficient?
- How far can we scale the device up or down?
- How can we reduce the amount of materials and parts needed to build the device?

#### **Links**

Website: <https://tumgreentech.org>

Linktree: <https://linktr.ee/tumgreentech>

Article „Waste recycling through a decentralized network of mobile facilities“:

<https://www.sciencedirect.com/science/article/abs/pii/S0959652623019315?via%3Dihub>

#### **Skills**

We recommend having a basic knowledge of material recycling processes as well as process design.

#### **Partner**

The TUM Green Tech Initiative is a non-profit association, which wants to offer the students of TUM an easy access to participate in a large variety of sustainable technology development projects. We want to inspire not only students, but also every person around the world that is driven to fight climate change and innovate for a greener tomorrow.