



Recovery of new materials

How to boost the recovery of waste from the development of new industries and existing streams of materials that are not efficiently treated?

Challenge context

Key facts

The development in recent years of new industries related to the generation and storage of renewable energy will lead in the short term to the production of large volumes of new waste (solar panels, wind turbine blades, electric car batteries, etc.), which will have to be reused and recycled.

On the other hand, in order to meet the recycling targets, set in the regulations for other types of materials in municipal waste, such as plastics and/or textiles, it is necessary to improve existing processes and technologies in order to reduce as much as possible the percentage that is finally sent to landfill.

Problem description

- Currently, 90% of wind turbine blades are landfilled and the remaining 10% are recovered or recycled with deficient value-added applications capable of using a minimal volume of this waste.
- The generation of solar PV panel waste in 2030 is expected to be around 8 MT. With the current recycling technology, it is only possible to recover the components with the lowest value in the market (aluminum and glass). However, neither the silicon nor the silver that forms part of the panel is recovered with a sufficient degree of purity, which makes the recycling process unprofitable.
- There are few plants dedicated to the reuse and recycling of electric car batteries, and the technologies used are not sustainable enough and have low recovery rates of the precious metals that are part of the battery.
- Similarly, the use of other wastes such as textile or plastic, which are common in urban waste streams, must improve with technological development. In Europe alone, more than 16 million tons of textile waste are generated each year, of which 73% is incinerated or landfilled, and only 1% are recycled. In the case of plastics, 40%-60% are recycled—a low rate considering the more than 60 million tons of plastics produced each year.



Challenge goals

Identify and implement technological solutions and processes that:

- Promote the recycling and reuse of waste from renewable energy generation plants and electric car batteries.
- Improve the plastic and textile recycling process in order to reduce, as much as possible, the fraction of this waste that is finally deposited in the landfill.

What are we looking for?

We are looking for innovative solutions that:

- Contribute to recycle and revalue waste derived from the development of new industries.
- Improve the recovery rate of complex to treat waste such as textiles or plastic.

Expected impact

- Inspire stakeholders in the value chain to incorporate industrial techniques oriented to the circular economy.
- Revalue discarded resources in order to extend their product lifetime and reduce the indiscriminate exploitation of natural resources.
- Use recovery and recycling techniques to encourage investment in new industries.
- Optimize recycling processes of traditional textile or plastic waste streams.

Target audience

This challenge has a global scope and is aimed at the entire professional innovation community such as UTEs, research centers, universities and startups.