



# SOPHIA

Advanced digital solutions to increase PV panel circularity

## Increasing the circularity of PV Panels



### What is SOPHIA?

SOPHIA - Implementation of Advanced Digital Solutions to increase the circularity of PV panels throughout the full value chain, is an EU-funded Horizon Europe project focused on extending the life and value of solar photovoltaic (PV) panels.

### Why PV panels?

Solar energy is a key driver of the global renewable transition. PV panel installations in the EU are growing rapidly, and so is their waste.

**By 2030, PV waste could reach 1.7-1.8 million tonnes, and by 2050, up to 60-78 million tonnes.**



#### Circular Innovation

Developing advanced solutions to extend the life and value of solar PV panels.

- ✓ AI health assessment
- ✓ Robot-assisted repair
- ✓ Eco-design



#### Digital Traceability

Building smart systems that make PV panels traceable throughout their life cycle.

- ✓ Integration of DPP
- ✓ Transparent value chain
- ✓ Data-driven insights



#### Sustainable Recycling

Transforming end-of-life panels into new resources for Europe's clean energy future.

- ✓ Marketplace
- ✓ Recycling pilots
- ✓ Feasibility reports





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## Objectives

- ✓ Develop AI tools to quickly assess PV panel health
- ✓ Use robot-assisted equipment for advanced repair
- ✓ Introduce innovative recycling for glass, silicon, metals, and plastics
- ✓ Create eco-design PV panels with easy dismantling adhesives
- ✓ Build a digital platform to integrate the DPP in new & repaired panels
- ✓ Boost the market for recycled materials via a dedicated marketplace

**SOPHIA officially began on 1 June 2025 and will run for 36 months.**

It is coordinated by AIMPLAS (Spain) and brings together 15 partners from across Europe:

AKUMPT (BG), BIOSOLAR (NL), CEPS (BE), CIDETEC (ES), ENCO (IT), Recycling Europe (BE), FERROG (ES), Fraunhofer (DE), IS (LT), LHV (ES) Recyclia (ES), SADAKO (ES), SISECAM (TR), WILOCK (ES)



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