

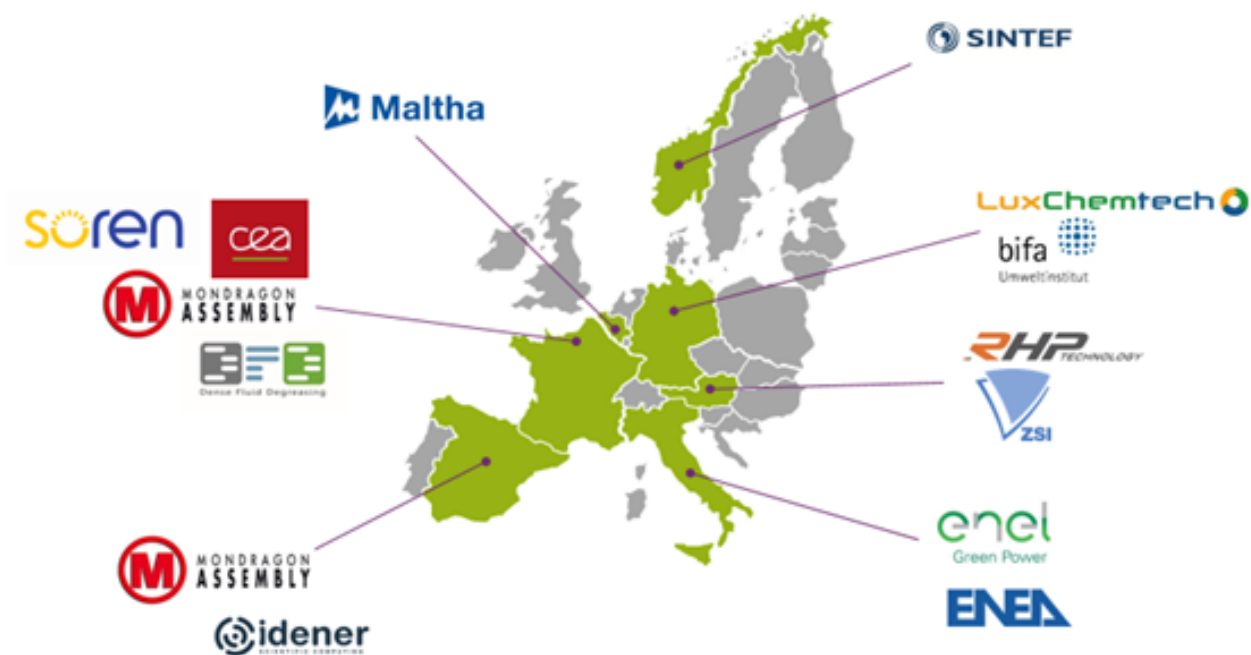
P H O T O R A M A

PHOtovoltaic waste management – advanced
Technologies for recOvery & recycling of
secondary RAw MAterials from end-of-life
modules

TOWARDS SUSTAINABLE
PV PANEL RECYCLING

PHOTORAMA

PHOTORAMA is an EU funded innovation action striving to improve recycling of Photovoltaic (PV) panels and recovery of Raw Materials (RM), implemented by a consortium of 13 organisations in the period 2021-2024.



The action is coordinated by the French Alternative Energies and Atomic Energy Commission (CEA).



THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME UNDER GRANT AGREEMENT NO 958223.

PHOTORAMA



Solar energy generated by PV panels is a key element of the energy transition. However, the current discarding process of PV panels is still far from reaching high environmental and ethical standards. Today, most PV panels are either downcycled or landfilled and key raw materials are not recovered and therefore irreversibly lost.

PHOTORAMA's overarching aim is to improve the current waste management of PV panels using innovative technologies, ensuring better **PV recycling and raw material recovery.**

OBJECTIVES

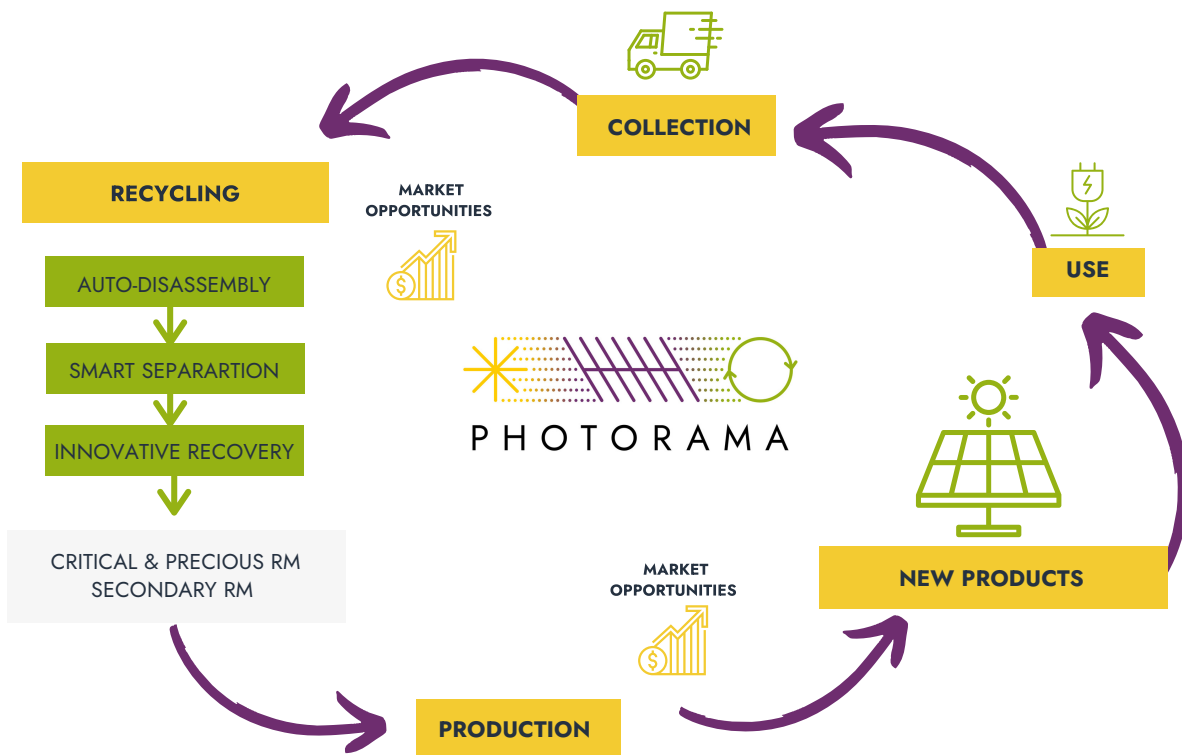
- To develop trailblazing technologies to implement a strong and reliable PV recycling scheme
- To demonstrate innovative recycling solutions with a pilot line that is at TRL 7
- To demonstrate full circularity by re-injecting the secondary rare materials in interdisciplinary value chain
- To drive market adoption of PHOTORAMA technologies as sustainable solutions
- To strengthen sustainable waste management actions under the EIP framework



PHOTORAMA

OUR KEY CHALLENGE

PHOTORAMA will set up a full management-Pilot Line. Through innovative automated disassembly, layer separation, recovery and recycling technologies, the **Pilot Line implemented on an industrial site will enable the implementation of a relevant economic business case for high-recovery (>98%) of PV waste**. To close the loop, all fractions of PV End of Life (EoL) components will be either directly recovered as energy fuel, re-used or recycled as RM feedstock to build new PV panels or other new products.



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IMPACTS



Increasing measurably the efficiency and effectiveness (range, yield, quality, and selectivity of recovered RM) of the exploitation of complex secondary RM



Unlocking a significant volume of various secondary RM currently unexploited or underexploited within the EU, hence improving their circularity in the economy



Improving health, safety & environmental performance throughout the whole life cycle



Improving economic viability & market potential, expanding EU business, creating added value and new jobs



Pushing the EU to the forefront in RM processing, recycling & solutions promoting socially innovative solutions



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PHOTORAMA

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