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THE SOPHIA PROJECT

NEWSLETTER



Welcome to the Third Edition of the SOPHIA Newsletter

One year in, the consortium is moving from planning to action. A comprehensive value chain study has been submitted, a new protective varnish has been developed and shipped for real-world testing, and the regulatory landscape is shifting in ways that reinforce SOPHIA's mission.

Project Updates

D1.2 Submitted: Mapping the End-of-Life PV Value Chain

In March 2026, SOPHIA submitted Deliverable 1.2 *Best Practices on Collection and Transport of End-of-Life PV Panels and Value Chain Overview* led by Recyclia in close collaboration with consortium partners and relevant stakeholders.

The study maps every actor involved in the EoL PV ecosystem, identifying the interactions, drivers, and constraints shaping their behaviour. It highlights key bottlenecks and opportunities, and shows how SOPHIA's strategies could be deployed to make the system more circular including a forward-looking scenario for a more optimised value chain.

The report has been submitted to the European Commission. Once formally approved, it will be made fully available on the SOPHIA website.

CIDETEC has developed a dielectric varnish with improved adhesion to glass, designed to be deposited over cracked or damaged panels to ensure electrical isolation of the inner components, extending the service life of installations that would otherwise be destined for recycling.

The first batch has been shipped to partner La Hormiga Verde (LHV) for lab trials with real photovoltaic panels, where results will validate the varnish's effectiveness under real-world conditions. This solution will feed into a repair device developed by SADAKO, where panels are first assessed by AI-based health evaluation tools before undergoing semi-automated repair, connecting CIDETEC's chemistry, LHV's facility, and SADAKO's software in a single repair workflow.

The shipment aligns with Milestone 12 (M12, May 2026) and marks the first physical technology transfer between consortium partners.

 **Events****SOLARIS Sustainability Workshop - 22 April, Le Bourget du Lac, France**

SOPHIA was presented among other Horizon Europe projects at the SOLARIS workshop on PV sustainability, co-organised by CEA and Fraunhofer ISE. The event brought together projects across the solar circularity research landscape to share findings and explore synergies.

SOPHIA Consortium Meeting, 6–7 May, Halle (Saale), Germany

The second in-person consortium meeting is taking place at the Fraunhofer-Center for Silicon-Photovoltaic in Halle. Partners are reviewing progress across all work packages, with a focus on deliverables, milestones, and inter-WP dependencies. The agenda includes a visit to Fraunhofer CSP's technical centre.

Securing Europe's Clean Transition Through E-Waste Circularity, 27 May, Brussels

Recycling Europe is hosting a high-level event on e-waste circularity at Residence Palace Brussels, bringing together industry leaders, MEPs, and European Commission officials to discuss the Circular Economy Act and the future of WEEE policy. SOPHIA will be presented in a dedicated slot on increasing PV panel circularity through advanced digital solutions.

 **The Policy Landscape**

The first quarter of 2026 produced no major new legislative acts, but was a significant period for preparatory groundwork that will shape SOPHIA's regulatory environment through 2027 and beyond.

DPP Central Registry: Operational by 19 July 2026

The EU's central Digital Product Passport registry - established under the Ecodesign for Sustainable Products Regulation (ESPR) - is on track to become operational by 19 July 2026. European standards bodies continued work throughout Q1 on eight harmonised standards covering DPP data and interoperability. Any sector-specific DPP, including the PV panel passport being developed within SOPHIA, will need to align with these technical foundations.

The Circular Economy Act has moved from public consultation into active policy design, with the Commission confirming a Q3 2026 tabling date. For SOPHIA, the CEA is significant on two fronts: it is expected to host the long-awaited WEEE Directive revision and establish Single Market rules for secondary raw materials, both directly relevant to the project's marketplace and traceability work.

New JRC Study Highlights the Scale of the PV Recycling Gap

In March 2026, researchers from the University of Murcia and the JRC published a study mapping a striking capacity gap: EU PV waste volumes are projected to reach up to 2.2 million tonnes per year by 2050, against a current recycling capacity of roughly 170,000 tonnes per year. The authors recommend a PV-specific waste flow under a revised WEEE Directive, harmonised EPR fees, a recyclability index, and DPP-based traceability in close alignment with SOPHIA's technical and policy outputs.

EU PROJECTS WORKING ON SIMILAR TOPICS

SOPHIA sits within a growing ecosystem of Horizon Europe projects pushing forward the EU's recycling and circularity agenda. These projects below share critical common ground with SOPHIA, whether through Digital Product Passport development, advanced sorting and recycling technologies, or the broader ambition of turning end-of-life materials into high-value secondary resources.

SOLARIS is a Horizon Europe Coordination and Support Action focused on optimising solar PV resource efficiency and sustainability across the full lifecycle. SOLARIS develops lifecycle assessment tools, supply chain analyses, and policy recommendations covering silicon, thin-film, and perovskite technologies, providing strategic guidance to the industry on circular economy potential and environmental impact.

EVERPV is a 36-month Horizon Europe project developing highly efficient delamination technologies to recover and reuse metals, glass, and polymers from end-of-life PV panels. With 16 partners spanning the full solar value chain, EVERPV targets recovery of glass with less than 1% impurities, polymers above 99% purity, and silver at 99% purity, enough recovered material to produce over 350,000 new panels per year by 2030.

APOLLO takes a proactive approach to the recovery and recycling of photovoltaic modules. APOLLO links legacy recycling with future production through a pilot line processing 40 tonnes of PV waste. It also develops a PV-centred Digital Product Passport and online marketplace for

RETRIEVE targets the upcycling of end-of-life solar panel components for reintegration into manufacturing as high-value materials. RETRIEVE develops cost-effective recycling technologies for glass, silicon purification, silver and metal recovery, and polymer valorisation with carbon capture, building a closed-loop process where recycled materials re-enter solar module production.

SORT4CIRC develops AI-powered automated sorting and Digital Product Passport systems for the textile sector. SORT4CIRC connects designers, sorters, recyclers, and technology developers to build a traceable, circular textile industry, demonstrating how DPP-based traceability and intelligent sorting can drive circularity across material streams beyond electronics.

AUTOLOOP accelerates the circular transition of the European textile industry through automated sorting and advanced chemical recycling. AUTOLOOP develops a DPP-compatible textile data hub that collects and structures information from each recycling step in a format designed for interoperability with future EU digital infrastructure, the same foundational challenge SOPHIA is tackling in the PV sector



EcoPlast develops a digital platform to enhance circularity in the automotive plastic value chain. It combines a blockchain-based Digital Product Passport for full material traceability, AI-driven circular design tools, and LCA capabilities, applying the same logic as SOPHIA to a different industrial value chain and offering direct lessons in how DPP implementation can scale.

Communications

You can follow us for updates, news, and events on [LinkedIn](#) and [X](#) !

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