Webinar Series 1.0 Solar PV Waste Management: Building a Circular Solar Economy (Session 3 out of 3 Webinars)

On

Session 3: The Solar Waste Challenge – Financial Instruments to Strengthen the End-of-Life Solar Waste Management Practices

Date: 6th October 2025 (Monday) | **Time**: 2:00PM – 3:30PM (IST) | **Venue**: Virtual | Register Here

Background

To ensure solar energy remains the most sustainable and resource-efficient renewable energy source, we must shift from the traditional linear "take-make-dispose" model to a circular economy approach. This involves integrating end-of-life (EOL) planning into the design and deployment stages of solar technology. While product stewardship laws in regions such as the EU (through the WEEE framework) and Japan (via FITP and PPP schemes) mandate solar waste management— through collection targets and producer-funded recycling—these policies often fall short of achieving recycling at scale. Regulatory compliance alone has not translated into economically viable or operationally robust systems for solar waste collection, recycling, and resource recovery.

Currently, solar waste management financing is largely driven by government mandates and Extended Producer Responsibility (EPR). Producer fees and compliance payments under EPR create predictable short-term cash flows, but they are insufficient for scaling operations sustainably. Long-term, investable financing streams—such as second-hand solar economy, insurance innovations, blended finance, green bonds, and carbon credit mechanisms — remain underexplored.

Unlocking the market potential of recycled solar products requires supportive policy frameworks, including green procurement, quality standards, certification of recycled materials, and international cooperation for traceable cross-border waste flows. Simultaneously, significant investment is needed to build recycling infrastructure. Instruments such as green bonds, when paired with clear frameworks for tracking proceeds and impact reporting, can finance this infrastructure. Blended finance structures can further mitigate investment risks, particularly for local governments and early-stage projects.

A coordinated and adaptive financial ecosystem is essential to operationalize solar waste management at scale and could include:

- For producers: to explore profitability of PV recycling.
- For consumers: to support markets for second-hand PV systems.
- For governments: to secure primary funding through seed capital, producer fees, or import levies.
- For financial institutions: to deploy green bonds, blended finance structures, and insurance products.
- For research bodies and think tanks: defining success metrics, tracking impact, and integrating carbon credits into solar waste frameworks.

Additionally, carbon credits from solar PV projects—currently generated through emissions displaced by solar electricity—can be expanded to cover emissions saved via recycling and material recovery. These credits could fund future recycling initiatives and incentivize sustainable EOL practices. Innovative financial tools, such as warranty-backed carbon credits for recycled solar components or pooled insurance schemes, could provide reliable revenue streams, enhance investment viability, and stabilize returns amid market fluctuations.

With this context, and in pursuit of innovative financial pathways to scale solar waste management, ISA's Solar PV & Battery Waste Management Programme is hosting a three-part webinar series. The final session, Session 3: ***The Solar Waste Challenge – Financial Instruments to Strengthen End-of-Life Solar Waste Management Practices***, will focus on unlocking financial solutions for building a robust, circular solar economy. Key objectives of session 3 are outlined below:

Objective

- Raise Awareness & Build Capacity: among stakeholders in ISA member countries on financial instruments for management of EOL solar waste and opportunities for wider adoption.
- Accelerate Cross-Sector Innovation: Promote and facilitate partnerships across public, private, and research sectors to drive innovation, foster scalable, effective solar waste management business models, recycling solutions, and support sustainable circular value chains.
- Address Financial and Economic Barriers: Identify financial gaps and economic challenges for effective solar waste management and propose actionable solutions.
- Showcase Global Best Practices: from successful recycling operations, innovative business models, lessons from international leaders, and examining intersection of policy, partnerships, financial tools, and technology in advancing innovation, supporting infrastructure, and market growth.

Webinar Series 1.0 Expected Outcome

- Enhanced knowledge & understanding of the role of R&D and technology for supporting advanced recycling of decommissioned solar panels and strengthening solar value chains.
- Networking and commitment to ongoing collaboration among governments, research institutes, industry, development organizations for active learning, and peer-to-peer exchanges.

Next Steps

- ISA's launch of a **"Community of Practice"** with key stakeholders and network actors to strengthen networks, support information exchange, knowledge generation, capacity building, and collaborate on joint initiatives for effective solar waste management within ISA member countries.

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The Solar Waste Challenge – Financial Instruments to Strengthen the End-of-Life (EOL) Solar Waste Management Practices

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Tentative Agenda	
Duration	**Segment**
5 mins	Opening remarks
5 mins	Recap of Session 1 & 2 and Setting Context
10 mins	**Technical Presentation 1 -** End-of-Life Management of Photovoltaic Panels: A Model for Forecasting and Economic Evaluation
10 mins	**Technical Presentation 2 –** Exploring innovative business models: Product stewardship for solar photovoltaic panels
10 mins	**Technical Presentation 3** - Economic potential of recovery and recycling of silicone photovoltaics cells and non-ferrous metals as part of the transition towards a circular economy
40 mins	**Panel Discussion:** Exploring innovative approaches to financing solar waste management • *Incorporating elements of financing solar waste management into the design of solar deployment.* • *How do we evaluate the long-term sustainability risks of solar investments that don't yet account for EOL waste management?* • *Exploring potential of a global or regional financing mechanism—like a 'Solar Waste Fund.'* • *Role of ISA in supporting member countries design for end-of-life solar waste management– Role of financial institutions in supporting sustainable solar deployment.* Panel Discussion moderated by Dr Gurleen Kaur, Technology Specialist, ISA and followed by Q&A
5 mins	Closing Remarks by DG ISA
5 mins	Vote of Thanks