HORIZON-CL5-2023-D3-02-12
Large area perovskite solar cells and modules

LUMINOSITY

Large area uniform industry compatible perovskite solar cell technology

Starting date of the project: 01/06/2024
Duration: 48 months

= Deliverable D1.2 =

Guidelines for a sustainable life cycle

Abstract

The LUMINOSITY project has developed guidelines to support the sustainable production and end-of-life management of large-area flexible perovskite modules, drawing on life cycle assessment (LCA) and techno-economic assessment (TEA) studies of flexible photovoltaic technologies.

The work reviews existing studies on flexible PV systems to identify environmental hotspots and key cost drivers. Particular attention is given to material toxicity and scarcity, manufacturing and upscaling, and end-of-life scenarios, as well as their implications for the environmental sustainability and economic viability of flexible perovskite modules. Based on the literature findings, areas for improvement and corresponding recommendations are identified to help reduce the environmental footprint and costs associated with scaling up flexible perovskite modules.

The findings provide a foundation for subsequent LCA and TEA activities within LUMINOSITY, including benchmark analyses using process and production data developed within the project. The work will support further sustainability assessments and contribute to the transition towards industrial-scale production of flexible perovskite modules.

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