



**DeRuan Technology (Beijing) Co., Ltd. for State Power
Investment Corporation Research Institute, Co. Ltd
Beijing, China**

Comprehensive Review and Second-Party Opinion on “Action Guide for Green Supply Chain Management of Photovoltaic Equipment”

Second-Party Opinion Report

Doc. No. P0044229-1-H1 Rev. 2 - April 2025

Rev.	Description	Prepared by	Checked by	Approved by	Date
2	Second Issue	P. Pérez-Aguirre, R. Montesano	G. Bonvicini	D. Dilucia La Perna	April 2025
1	Second Issue	P. Pérez-Aguirre, R. Montesano	G. Bonvicini	D. Dilucia La Perna	April 2025
0	First Issue	P. Pérez-Aguirre, R. Montesano	G. Bonvicini	D. Dilucia La Perna	February 2025

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ABBREVIATIONS AND ACRONYMS

LCA	Life Cycle Assessment
CFP	Carbon Footprint of Product
ILCD	International Reference Life Cycle Data System
EPD	Environmental Product Declaration

1 BACKGROUND INFORMATION

RINA Consulting (in the following: RINA) is supporting DeRuan Consulting Company for State Power Investment Corporation Research Institute Co. Ltd in the development of guidelines for calculating the environmental impact of renewable power generation systems.

The scope of the activities was to review and propose improvements to the guidelines, and the objective of the present report is to provide the Client with a second-party opinion on the quality of a report, named “Action Guide for Green Supply Chain Management of Photovoltaic Equipment”. This document constitutes a set of directives for the elaboration of Life Cycle Assessments (LCA) and Carbon Footprint of Products (CFP) for renewable power generation, referring both to the power generation equipment and to the amount of electricity produced.

It is highlighted that RINA second-party opinion is based on the review of the English version only of the guideline and that the Chinese version of the report has not been subject of review, so in case of differences between the English and the Chinese version, the English one is prevailing.

2 SECOND-PARTY OPINION

RINA has carried out a thorough review of the document “Action Guide for Green Supply Chain Management of Photovoltaic Equipment”, which presents the guidelines developed by the Client for calculating the carbon footprint of photovoltaic energy generation systems.

The first round of analysis, carried out in January-February 2025, identified some opportunities for improving the completeness of the document and make easier the application of the guidelines, emphasizing the importance of aligning the guidelines with internationally recognized standards and recommendations, such as ISO 14040-44-67 technical standards, the ILCD Handbook, the applicable Product Category Rules established by the International EPD System, and the EU Product Environmental Footprint Initiative. Following the first round of review, in March 2025 the Client made changes to the document and issued a new version of the guidelines. In April 2025, RINA reviewed the updated version, examining the implemented changes and assessing the coherence and clarity of the revised guidelines.

The second-party opinion by RINA on the final version of the guidelines is highly positive.

The Client's changes and clarifications have notably improved the quality of the guidelines and the ease of use for the end-users, enhancing the transparency and consistency of the document. The final version of the guidelines establishes a common framework for the calculation of the carbon footprint of the photovoltaic power generation and equipment, also discussing the sustainability of its supply chain and its principal actors involved.

The comments made by RINA on the first version of the report are presented in Appendix A (omitted from the present public version of the report) together with the summary of the actions taken by the Client and the final feedback from RINA.

PP016/RM005/GIOBO/DDI01:eba04

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