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Press release

ISC Konstanz announce collaboration with Munich Re Specialty for mandatory audits on solar cell facilities

Konstanz, Germany – October 19, 2026

- ISC Konstanz to perform mandatory independent technical audits of solar cell manufacturing facilities worldwide on behalf of Munich Re Specialty.
- Experts from Munich Re Specialty visited ISC Konstanz to ensure and deepen collaboration on solar cell manufacturing quality and reliability.
- The two companies exchanged knowledge on manufacturing best practices for crystalline silicon solar cells and discussed current challenges regarding long-term product reliability.
- The visit included technical presentations, laboratory demonstrations and discussions on quality assurance for modern gigawatt-scale solar cell production.

ISC Konstanz and Munich Re Specialty today confirm their collaboration for mandatory independent technical audits of solar cell manufacturing facilities worldwide. In July 2026, the two companies held a key meeting and deepened their collaboration by agreeing the parameters of what is to be audited.

During the meeting and site visit, ISC Konstanz and Munich Re Specialty aligned on the understanding and mitigation of degradation mechanisms that can affect solar cell performance and lifetime.

As the photovoltaic industry continues its rapid global expansion, new manufacturing capacities are being established around the world. India alone has more than 270 GW of announced and under-development solar cell manufacturing capacity, around 85% of which is expected to use TOPCon technology, according to Mercom India Research[1]. For new manufacturers entering the market, ensuring consistent manufacturing quality has become a key success factor. Reliable production not only reduces technical risks but also helps to strengthen confidence among investors, project developers and insurers. The collaboration between Munich Re Specialty and ISC Konstanz creates added value by combining ISC Konstanz's expertise in industrial solar cell manufacturing and technology with Munich Re Specialty's expertise in market and financial risk assessment and its insights into actual claims and loss experience. Together, this enables an independent assessment of manufacturing quality and associated technical risks.

[1] Mercom India Research: Skilling, R&D, Cost Competitiveness Key to India's Solar Cell Manufacturing Growth

Against this background, the visit provided an opportunity for both partners to exchange expertise on the scientific and manufacturing aspects that underpin the long-term reliability of modern photovoltaic products.

ISC Konstanz recent findings on UV-induced degradation suggest manufacturing parameters influence degradation behaviour and long-term cell reliability. Its work builds on recent research by ISC scientist David Bäuerle, published in the renowned journal Solar Energy Materials and Solar Cells[2], which provides new insights into the influence of manufacturing parameters on the UV stability of modern TOPCon solar cells. These findings contribute to the industry's understanding of reliability risks and support the development of more robust manufacturing processes.

By Combining Munich Re Specialty's expertise in technical risk assessment with ISC Konstanz's experience in photovoltaic manufacturing, both partners aim to evaluate production quality, identify potential reliability risks at an early stage and support manufacturers in continuously improving their processes.

For manufacturers, the audits provide valuable feedback on production quality and opportunities for optimization. For Munich Re Specialty, they form an important technical basis for assessing manufacturing risks in connection with photovoltaic warranty insurance. Ultimately, the collaboration contributes to increasing confidence in new manufacturing capacities.

"The quality of a photovoltaic product is determined long before the module leaves the factory," said Jan Lossen, project leader at ISC Konstanz. "The recent visit of Munich Re Specialty to our institute and pilot line in Konstanz builds on our existing collaboration. By combining manufacturing expertise with independent technical assessments, ISC Konstanz can identify potential risks early, help manufacturers optimize their processes and ultimately help to increase confidence in new solar technologies."

Looking ahead, the partners expect increasing attention to new solar cell production capacities currently being established outside China, particularly in India and the United States. This trend is already visible: India's solar cell manufacturing capacity reached approximately 42 GW by mid-2026, while the United States has already built more than 66 GW of module manufacturing capacity and around 11 GW of domestic cell capacity, illustrating the ongoing build-up of PV manufacturing supply chains in both markets[3]. Through their collaboration, Munich Re Specialty and ISC Konstanz aim to support the successful ramp-up of these new production facilities, reduce technology-related risks and contribute to higher quality and reliability throughout the global photovoltaic industry.

About ISC Konstanz

Founded in 2005, the International Solar Energy Research Center Konstanz (ISC Konstanz) is one of the world's leading institutes for applied photovoltaic research. With a focus on high-efficiency solar cell concepts, ISC Konstanz supports the global PV industry by providing process development, characterisation, and consultancy services. The centre has contributed to photovoltaic manufacturing lines across Europe, Asia, and North America.

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[2] Solar Energy Material and Solar Cell, UV degradation in TOPCon solar cells — Impacting factors and mitigation strategies

[3] **India**: PV Tech, India's RE capacity hits 288GW in H1 2026 , **USA**: PV Tech, Beyond modules: why US solar's future depends on upstream manufacturing scale-up

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Representatives of Munich Re and ISC Konstanz during the visit at ISC Konstanz. From left to right: Jan Lossen, David Bäurle, Julia Moser, Assia Schuhmann, Nelly Pohl, Steffi Pawlitschko, Bernhard Weisel and Lejo Koduvelikulathu.