

Press Release

Twelve companies and institutions support call for strong industry-oriented photovoltaic research

ISC Konstanz submits position paper on future energy research funding – c-Si must remain a key R&D priority and offers major opportunities for the German and European PV machinery and equipment industry

Konstanz, 3 September 2026 – Twelve companies and institutions support a position paper¹ initiated by ISC Konstanz on the future direction of photovoltaic research in Germany. Entitled **“Energy Research for Industrial Value Creation in Germany – Why Crystalline Silicon Photovoltaics Must Remain a Key Research Priority in the 8th Energy Research Programme”**, the initiative led by ISC Konstanz calls for research on crystalline silicon technologies (c-Si) to remain a key priority in the 8th Energy Research Programme and to be further strengthened in line with its long-term industrial importance.

Major growth market for the European machinery and equipment industry

The position paper focuses on the industrial exploitation of research results. Although Germany has lost a large share of its solar cell and module manufacturing capacity, it continues to possess internationally leading expertise in production equipment, automation, metrology, materials, production processes and industrial research.

At the same time, the global market for PV production technologies is growing significantly. An Equipment² Study jointly prepared by VDMA, Fraunhofer ISE and ISC forecasts that annual global investment in PV production equipment will increase **from USD 16.6 billion in 2025 to USD 43.8**

¹ Link to English version: https://isc-konstanz.de/wp-content/uploads/2026/09/20260821-positionpaper-PV-R_and_D-Germany.pdf and to the German version: https://isc-konstanz.de/wp-content/uploads/2026/09/20260821-positionsapier-PV-F_und_E-deutschland.pdf

² https://www.vdma.eu/documents/d/group-34568/vdma-pv-equipment-study_ise_isc_2026-03-09_final

billion in 2035. This represents a cumulative market volume of approximately **USD 250–300 billion over the coming decade.**

“This market represents a major opportunity for German and European industry,” says **Dr. Radovan Kopecek, co-founder and member of the Executive Board of ISC Konstanz.** “If our companies are to continue offering world-leading production equipment and technologies in the future, we need to advance the research behind them today. Research funding and industrial value creation must therefore be considered together.”

One example of how research and industrial value creation can be linked in practice is the emerging “100% German Turnkey Alliance”: Together with leading German machinery and equipment manufacturers, ISC Konstanz is working to pool expertise across the PV production chain and offer complete manufacturing solutions based on German technology. The aim is to accelerate the transfer of research results into industrial applications while strengthening the opportunities for German technology providers in the rapidly growing international market for new PV manufacturing capacity.

Crystalline silicon will remain the technological foundation

A second key argument of the position paper is the long-term importance of crystalline silicon technologies. According to the latest International Technology Roadmap for Photovoltaics (ITRPV), c-Si will remain the technological basis for the vast majority of global solar cell production over the next ten years. Including silicon-based tandem technologies, the underlying forecasts indicate that around 95% of solar cell production will still be based on crystalline silicon in 2036.

The aim is not to reduce research into new solar cell technologies. Rather, the position paper advocates balanced and technology-open research funding that supports fundamental research and future technologies as well as the continuous further development of industrially established technologies. These include today’s TOPCon and back-contact technologies as well as future tandem concepts.

Broad support from industry, research and the region

The recommendations are now supported by **twelve companies and institutions.** They include leading suppliers of production equipment and automation technology, PV companies, research organisations and regional stakeholders, including **centrotherm, RENA and VON ARDENNE.**

“This support is particularly important to us because it demonstrates that this is not simply about the interests of a single research institution,” says **Rudolf Harney, Project Manager at ISC Konstanz.** “The question is how research can help Germany and Europe continue to participate technologically and economically in one of the world’s largest growth markets.”

ISC Konstanz also expressly welcomes the intensive dialogue with the **Federal Ministry for Economic Affairs and Energy (BMWE) and Project Management Jülich (PtJ).** Questions concerning the future direction of photovoltaic research and technology openness have already been discussed in both face-to-face and online meetings.

“We are grateful for this open dialogue and for the opportunity to contribute the perspective of industry-oriented research and our industrial partners to the consultation process,” says Harney.

Five recommendations for future research funding

The position paper sets out five key recommendations:

- maintain c-Si as a key pillar of research funding;
- further strengthen industry-oriented collaborative research;
- place greater emphasis on production technologies;
- expand demonstration and piloting; and
- when selecting research projects, give greater consideration not only to scientific quality but also to exploitation potential, industrial applicability and the contribution to European competitiveness.

The position paper concludes that Germany must make targeted use of and further develop its particular strengths in **innovation, production technologies and industrial know-how** in order to continue playing a leading role in the global photovoltaic industry and to benefit economically from its strong growth. **Continued research funding is essential to achieving this goal.**

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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Images



Image 1 – Industry-oriented PV research at ISC Konstanz: Dr. Jan Hoß (foreground) and Apoorva Gattu working on the centrotherm process system. Modern production processes for crystalline silicon solar cells and their transfer into industrial applications are a key focus of research at ISC Konstanz. Photo: ISC Konstanz



Image 2 – Research meets mechanical engineering: View of the new process system at ISC Konstanz, featuring an automated loading unit from Jonas & Redmann and a four-tube diffusion furnace from centrotherm. Industry-oriented research infrastructures such as this enable new c-Si processes to be developed and tested under production-relevant conditions. Photo: ISC Konstanz



Image 3 – Experimental process development at ISC Konstanz: Dr. Jan Hoß (left) and Apoorva Gattu discuss an experiment at the loading unit of the diffusion furnace. Processes for crystalline silicon solar cells are developed and tested here under industry-relevant conditions.

Photo: ISC Konstanz