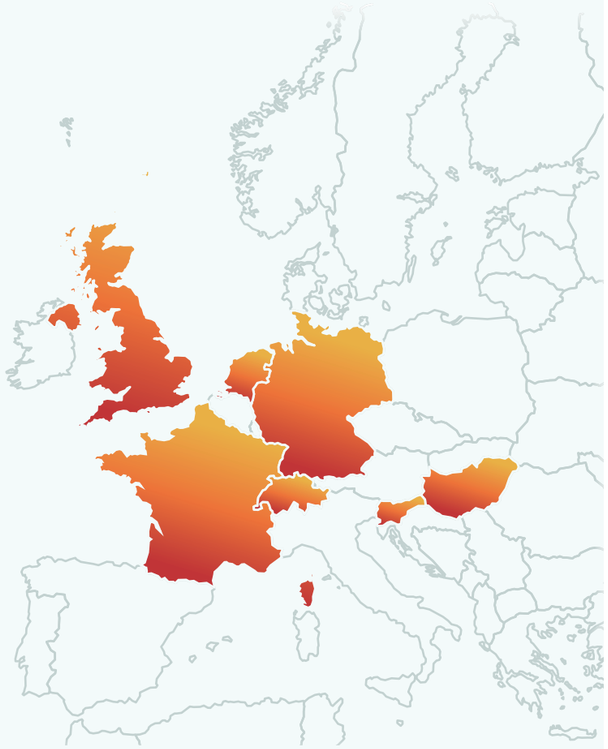
CONSORTIUM



France	CEA-INES / TOTAL AYMING
Germany	VON ARDENNE / ISFH FRAUNHOFER ISE
Netherlands	MECO (BESI)
Slovenia	UNIVERSITY OF LJUBLJANA
Switzerland	CESM / MEYER BURGER EPFL
Hungary	ECOSOLIFER
United Kingdom	ERM

To reach these ambitious objectives, the DISC consortium consists of 13 partners from industrial actors and research institutes from 7 European countries.

Experienced industrial actors

MEYER BURGER · VON ARDENNE · ecosolifer · Besi · TOTAL

Research Institutes and Universities

ISFH An-Institut der · Fraunhofer ISE · csem · cea · ines INSTITUT NATIONAL DE L'ENERGIE SOLAIRE · EPFL ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE · University of Ljubljana

Other

ayming · ERM

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This project received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant Agreement N°727529

DISC

Double side contact cells with innovative carrier-selective contacts

This project received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant Agreement N°727529

SCOPE & OBJECTIVES

The DISC project aims to develop key technologies for the next generation of high-performance photovoltaic (PV) solar cells and modules, allowing ultra-low solar electricity costs with minimum environmental impact. Indeed, a life cycle approach applied in DISC prevents the shifting of environmental or social burdens between impact categories. Technologically, the approach of the DISC project combines today's simple, non-patterned device architecture for double-side contacted Si solar cells with innovative carrier selective contacts.

In DISC, a unique consortium of experienced industrial actors will collaborate with a set of institutes with demonstrated record devices and worldwide exceptional experience in the R&D field of carrier selective contacts. The high efficient PV modules developed in DISC are predestined for rooftop installations, i.e., neutral with respect to land use aspects.

DISC has a chance to contribute towards mitigating the impacts of climate change, improving energy access and bringing Europe back at the forefront of solar cell science, technology and manufacturing.

FOCUS & TARGETS

TECHNOLOGICAL

- Double-side contacted Silicon solar cells with carrier selective junctions and optimised metallisation and TCO
- Efficiencies >25.5% on large area cell (>100 cm²) and >22% at module level with area <1.65 m²

ECONOMICAL

- Lower Levelized Costs of Electricity between 0.04 – 0.07€/kWh
- Reduced fabrication complexity and production line investments: 0.40€/Wp of production cost on module level and a mid-term potential of 0.33-0.35€/Wp.

SUSTAINABILITY

- Increased efficiency, reliability and durability
- Reduced non-abundant material consumption (Silver, Indium)

BENEFITS

Increased viability and attractiveness of the PV systems

More competitive EU PV scientific and industrial stakeholders

PROJECT METHODOLOGY

The research partners of the DISC consortium are planning to work in a continuous interaction for the whole duration of the project in order to identify high potential components which might bring significant advancement with respect to carrier selective junctions (CSJ), transparent conductive oxides (TCO), metallization subjects and final devices.