



MANUFACTURING OF COMPONENTS FOR PRODUCTION OF RENEWABLE ENERGY OR ENERGY STORAGE

# INNOVATION FUND

Deployment of net-zero and innovative technologies

## DAWN: 200MW Production of thin-film solar by Sweden

The Innovation Fund is 100% funded by the EU Emissions Trading System

### | Project Factsheet

The DAWN project will establish Europe’s largest manufacturing plant for flexible and lightweight Copper, Indium, Gallium and Selenium (CIGS) thin-film photovoltaic (PV) cells and panels. The project utilises Midsummers resource efficient solar cell manufacturing equipment (Midsummer DUO) to produce a solar panel with a minimal carbon footprint and material use. The factory will manufacture the solar cell and the solar panel in the same facility. Production is set to start in 2026 and gradually ramp up to 200 megawatt (MW) annual production by 2028. The project involves the construction of a greenfield building of 10 000m2, which will be used to scale up the proven solar cell manufacturing technology and integration of panel processes into a fully automated production line.

**COORDINATOR**  
MIDSUMMER AB

**LOCATION**  
Sweden

**CATEGORY**  
Renewable Energy (RES)

**SECTOR**  
Manufacturing of components for production of renewable energy or energy storage

**AMOUNT OF INNOVATION FUND GRANT**  
EUR 32,265,535

**EXPECTED GHG EMISSIONS AVOIDANCE**  
1,073,343 tonnes CO2 equivalent

**STARTING DATE**  
01 September, 2023

**ENTRY INTO OPERATION DATE**  
31 December, 2025

**FINANCIAL CLOSE DATE**  
30 April, 2024

The 200 MW production of flexible CIGS thin-film solar panels, represents a 100 times increase compared to the 2023 production capacity. The production will be energy and resource-efficient, resulting in a solar panel with an energy payback time that is less than one year. By using the DUO, complex and high melting materials can be efficiently deposited onto a stainless-steel substrate and in a single sequence, turn stainless steel into a fully functional solar cell. Solar cells are encapsulated between polymer sheets, thus becoming lightweight and flexible solar panels.

These thin-film solar panels are flexible and lightweight (~3 kg/m<sup>2</sup>) compared to traditional solar panels (~13-15 kg/m<sup>2</sup>) which use rigid glass and aluminium framing. The low weight makes it possible to apply Midsummers panels on buildings that have previously been inaccessible to solar installations, such as building with low load bearing roofs. Moreover, Midsummer solar cells can be recycled at a rate above 98% using recycling

processes that are already commercially available. During a ten-year period, the electricity generated by the solar panels from the DAWN factory will have the potential to avoid 1.07 million tonnes CO<sub>2</sub> equivalent of greenhouse gas emissions (GHG).

The establishment of the DAWN factory will help to restart European solar cell and panel production contributing towards the RePowerEU goals with respect to installed solar energy and manufacturing capacity.

Once fully operational, the DAWN factory will employ approximately 200 people, with 95% occupying direct operational roles. DAWN is also expected to generate around 400 indirect job opportunities. The factory will be able to serve as a blueprint for future manufacturing sites of European thin-film solar production through a copy-paste setup in empty facilities across Europe.

## | Participants

MIDSUMMER AB

Sweden