FLOATING OFFSHORE SOLAR RESEARCH FACILITY

Innovative research project investigating floating solar systems
The project Floating offshore solar research facility is a research project investigating and evaluating the feasibility of floating solar PV (photovoltaic) systems in Denmark. During the project, 3 different floating solar systems from different manufactures will be tested and analysed. The focus will remain on testing profitability, performance, levelized cost of electricity, and the floating systems' effect on marine ecology.

Collaboration partners
The project team will consist of consulting engineers from COWI and NOBLE, scientist from DTU, and solar development lead from HOFOR.

Research facility at DTU Risø
The floating solar research facility will be in Roskilde Fjord near DTU Risø Campus, Roskilde. This location has been selected due to its favourable conditions; the facility is easily accessible, next to a university with top-tier meteorological measurement instruments, the weather and water conditions in Roskilde Fjord represents similar conditions to that of harsher offshore environments.

Project roles and daily management
COWI will oversee engineering design, participate in performance tracking, analyse, and evaluate results. DTU will be running the test facility, track the performance, and take care of immediate rising problems. HOFOR will take part in project meetings, planning, and, possibly, assist in grid-connecting the floating solar systems.

Project lifetime: 3 years
The project will run for a period of 3 years total. Starting in January 2023 and ending in December 2025. The floating solar systems will be installed in the summer of 2023 and the testing period is expected to be 2 years total, until the summer of 2025. A final report including project results and outcome will be delivered and published at the project end.

Objectives and possibilities of floating solar PV
Solar energy is, in many parts of the world, the most economically and sustainable way to produce electricity. However, areas where land use is scarce are experiencing limitations to the deployment of large-scale solar power plants. Floating solar eliminates the competition for land areas and takes unused space and convert it to revenue-generating areas.

Long-term perspectives
In the long-term perspective, floating solar systems can, in conjunction with wind energy, be deployed in farther offshore environments. Floating solar can assist in meeting the increasing electricity demand and electrification of the energy sector. Furthermore, this new energy technology can help reach the climate target of countries across the world and reduce GHG-emissions for a more sustainable future.