***Here comes the sun* on *Strawberry fields*: the agrivoltaics project REGACE**

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In this study we present the first steps of an innovative project, REGACE, funded by the EU under the Horizon Europe programme on agrivoltaics. REGACE is developing and validating a breakthrough, radically innovative technology that will enable agrivoltaics to make a major contribution to the EU's clean energy portfolio. A new technology is being tested in 6 different European countries. In addition, the system demonstrated in this project is also cost-effective in low-sun areas that are currently outside the areas for which agrivoltaics can be considered. During the project, the core technology will be tested both in real environments (greenhouses) and in the laboratory. We are also testing the system using CO2 enrichment as a means to increase electricity production in low light conditions by increasing the angle of incidence of the bifacial panels in the tracking system. This new technology therefore not only enables dual use of land, but also dual use of infrastructure. The technology is being tested in operational environments in six sites with different greenhouses and crops. In this study, we present two main research activities: first, the experimental setup for testing the system, installed in the laboratory of the University of Rome Tor Vergata and in a farm in the countryside near Rome. We also present the concept of the system's digital twin, which will be developed, tested and implemented as part of the project. The experimental and computational work is enriched with a social study of how this technology is perceived by farmers. Beyond the energy and environmental contents, the REGACE project provides different profiles of the social and community impact of agrivoltaics technology. Through targeted information and collaborative pathways, the project develops the involvement of the main stakeholders of the rural and technological world, builds up well-informed and aware communities of practices, and guarantees participatory paths for all those involved in the experimentation and implementation of the new technology With this integrative approach, the results of the project will provide a complete overview of the impact of the new technology on agriculture.