

PRESS RELEASE

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Innovative research at the KIOS Research Center for the integration of photovoltaic systems in the electric power grid



initiative as part of the European research project **“PV2Grid” (A Next Generation Grid Side Converter with Advanced Control and Power Quality Capabilities)**. The aim is to design and develop new generation inverters, based on power electronic technology.

The KIOS Research Center for Intelligent Systems and Networks at the University of Cyprus is leading yet another significant research initiative, which aims to design and develop new technology to facilitate the integration of photovoltaic systems into the electricity distribution network. KIOS is coordinating this



The inverters are used in photovoltaic installations to transform the direct voltage to alternating voltage in order to interconnect them to the power grid. Conventional inverters do not yet have advanced control capabilities that allow the full control of photovoltaic systems; as a result, it is not possible to fully utilize and optimally integrate the produced energy into the power grid.

The new generation inverters will be equipped

with advanced control capabilities and novel operational mode approaches, such as providing support to the grid when needed, enhancing the power system stability, improving the power quality of the grid, and reducing the network losses. It is expected that the overall performance of PV plants will be improved by ensuring their efficient and effective grid integration under any grid conditions. The project outcomes will pave the way for new multifunctional industrial products that will further assist the grid integration of renewable energy sources.

The project is funded by the European Union's 7th Framework Programme for research and innovation through the Solar-Era.Net instrument, Energinet.dk, and the Cyprus Research Promotion Foundation. The KIOS research team is led by Associate Professor Elias Kyriakides and Researcher Lenos Hadjidemetriou.

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