

ENHANCE

Enhanced rooftop PV integration through kinetic storage and wide area monitoring

Project Duration: 04.2017 – 03.2020

Initial report submitted: 10.2017

Summary

This project aims to pave the way for a seamless and massive grid integration of small rooftop photovoltaic systems (PVs) by enriching the paradigm of conventional demand response with PV generation and storage response. Some of the obstacles against the large-scale deployment of small rooftop PVs include the variable nature of solar energy, the unavailability of accurate generation forecast, and the fact that the actual generation of rooftop PV systems cannot be monitored or controlled in near real-time. Moreover, the unavailability of local small scale storage systems, the poor Fault Ride Through techniques and the lack of demand response mechanisms that respond in accordance to the current PV generation and the battery charging state, are some of the other factors that do not allow to substantially enhancing the operational capability and flexibility of PVs and their grid-friendlier integration. Progress in these issues would alleviate the concerns of Distribution System Operators, allowing a higher PV penetration.

The ENHANCE project will tackle the above barriers in a transnational Cyprus-Israel framework. The proposed project will put the foundation stone for synergies and the development of industrially relevant transnational RTD and innovation projects in the two neighbouring countries with significant industrial impact and noteworthy contribution to the SET plan, tailored to their industrial and market needs. The project is particularly important since the two countries, apart from sharing the same vision regarding the decarbonisation of their economies; they also share one of the highest solar potentials on earth, while they are currently working on the interconnection of their power systems. A well selected consortium including one university and three industrial partners is tailored to the needs of the project, bridges the gap between industry and academia and fulfils all the requirements for a successful project implementation.

Project consortium

Coordinator and contact details:

Full name of organisation:	University of Cyprus
First and family name of coordinator:	Dr. Elias Kyriakides
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Participating countries and financing:

Country	Number of organisations involved	Project costs in EUR	Public funding in EUR
Cyprus	2	211'400	200'000
Israel	2	1'463'350	731'675
<i>Total</i>	<i>4</i>	<i>1'674'750</i>	<i>931'675</i>

Funding agencies involved and contracts

Funding Agency	Contract N° and Title
Cyprus Research Promotion Foundation	"Enhanced rooftop PV integration through kinetic storage and wide area monitoring" - KOINA/SOLAR-ERA.NET/0215/06
Cyprus Research Promotion Foundation	"Enhanced rooftop PV integration through kinetic storage and wide area monitoring" - KOINA/SOLAR-ERA.NET/0215/06
Ministry for National Infrastructure Energy and Water - Office of the Chief Scientist.	Project number 216-11-35 Managing small medium sized Photovoltaic units Grid integration by voltage and frequency regulation utilizing kinetic energy storage
Ministry for National Infrastructure Energy and Water - Office of the Chief Scientist.	Project number 216-11-030 Managing small medium sized Photovoltaic units Grid integration by voltage and frequency regulation utilizing kinetic energy storage