



Ευρωπαϊκή Ένωση
Ευρωπαϊκά Διαρθρωτικά
και Επενδυτικά Ταμεία



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ
ΑΝΑΠΤΥΞΗΣ ΚΑΙ ΕΠΕΝΔΥΣΕΩΝ

ΕΠΑνεΚ 2014-2020
ΕΠΙΧΕΙΡΗΣΙΑΚΟ ΠΡΟΓΡΑΜΜΑ
ΑΝΤΑΓΩΝΙΣΤΙΚΟΤΗΤΑ
ΕΠΙΧΕΙΡΗΜΑΤΙΚΟΤΗΤΑ
ΚΑΙΝΟΤΟΜΙΑ



Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης

Project in collaboration with the Telecommunication Systems Research Institute of Crete (T.S.I) and the SUNERGY company develops the ePower project

Title: Smart power electronic converter for the provision of integrated services to electric grids and consumers «ePOWER»

Project Code: T2EDK-01775

A transition to the Smart Grids and the large-scale integration of Renewable Energy Sources (RES) into the Electric Energy Systems (EES), are in progress during the last years. Distributed energy storage systems contribute to the solution of local operating problems of EESs (e.g. voltage support at the grid connection point, balancing the fluctuating local energy production of RES etc.). At the same time, one of the most important types of distributed storage in modern EESs is the storage of energy in the batteries of interconnected electric vehicles, the number of which in circulation is growing rapidly. For the interconnection of RES and energy storage with the electric grid, the use of DC/AC power electronic converters (inverters) is required. The proposed research project targets to the development of an innovative Intelligent DC/AC Power Inverter which will be the interface of multiple small-scale and distributed energy-storage units (electric vehicles, batteries and supercapacitors), as well as small-scale PV arrays, with the Low Voltage (LV) electric network. The power converter that will be developed will provide ancillary services to the LV network, ensure the uninterrupted operation of the "hosting" system (e.g. a home electrical system) during major disturbances of the electric network, provide appropriate software for the optimal charge-discharge of the interconnected energy-storage arrays and will improve the quality of the power provided to the hosting system where it is integrated. The project targets to the design, construction and experimental evaluation of a fully functional experimental prototype Intelligent DC/AC

Power Inverter. In the context of the implementation of the project, appropriate actions will be implemented for the optimal exploitation of the commercial potential of the power electronic converter to be developed.

The above project is implemented with the co-financing of Greece and the European Union