

# Communication device for Photovoltaic systems

## General Outlook

The Photovoltaic (PV) sector has experienced a very rapid expansion in the whole world and also in Portugal, specially after the approval of the “microgeração” law, which regulates the energy production by renewable systems in Portugal. This expansion led to the deployment of numerous PV systems around the world that need monitoring and maintenance. A simple and economically viable system that can communicate with various PV systems for monitoring and maintenance purposes would greatly reduce the time and resources spent in such activities.

The work will be performed in collaboration with the private company WS Energia Lda and it will be an important contribution to a larger R&D project financed by the QREN.

## Objectives

The project will lead to the development of a two-way communication system to be installed in PV systems that must allow access to all its operation variables and must leave the possibility of updating the control software. The most critical characteristic of such system is the distance between the operator and the PV system that should be as large as possible. At initial stages, the prototype systems can use cable communications but they must grow to wireless communication systems. The system should also allow communication between PV systems. It is foreseen that a prototype will be followed by a real product, with short-term applications in the Portuguese market.

## Task: general overview

The work will be divided in the following tasks: - Analysis of existing communication systems – selection of the best system to cope with the communications requirements, with cost assessment - realization of prototypes - on field tests - data analysis – publication of the results.