



## Solar Technologies Applied to Low Income Households

The Malta Intelligent Energy Management Agency (MIEMA) together with partners from 6 other EU countries (Cyprus, France, Greece, Italy, Spain and Slovenia) are working together to improve energy efficiency and promote energy saving in low income housing in the Mediterranean area through the project ELIH-Med - Energy efficiency in Low Income Housing in the Mediterranean. The project implementation in Malta is co-financed by the MED Programme (85%) and the Ministry for Energy and Health (15%).

The ELIH-Med project focuses on energy efficiency in low income housing in the Mediterranean area and the implementation of a large scale pilot project. As part of this pilot project MIEMA is carrying out energy retrofitting in 35 low income houses in Malta and Gozo. The pilot project consists of a number of energy conservation measures. Given the high potential in terms of solar energy for the Maltese Islands, the pilot project included solar technologies such as photovoltaic (PV) systems and solar water heaters (SWH). In fact thanks to its geographic position in the central Mediterranean region, Malta is the EU member state with the highest intensity of solar radiation which makes solar energy the most useful type of renewable energy for our islands, being both clean and abundant.

MIEMA installed photovoltaic systems of different sizes in 31 low income households, with a total overall power of 82.5kWp. The systems range between 4 and 30 PV panels, depending on the roof space availability and energy consumption of the households. These systems allowed the households to produce their own electricity which helps to reduce energy poverty. Some of the households are also making use of software that specifically monitors the output of the system and the energy that is being exported to the grid. The installation of PV systems together with other energy efficient solutions helped a number of households to achieve zero or almost zero energy bills.

A major consumer in terms of electricity is water heating. The water heating systems of the selected 35 households consisted primarily of one or more electric water heaters which were manually switched on for most of the year. This resulted in standby losses when the water is kept at a high temperature even when there is no hot water demand. Since the consumption of domestic water was significant in most of the residences, twenty-five solar water heaters have also been installed as part of the ELIH-Med pilot project (16 SWH of 200l and 9 SHW of 300l capacity – depending on the number of people in the households). The majority of the installations consisted of solar collectors combined with a storage tank, however in some cases the solar collector were placed on the roof while the storage tank was installed separately due to space limitations.

The installation of solar technologies in low income households as part of the ELIH-Med pilot project has been very successful. The installation of solar water heaters ensures a reliable supply of domestic hot water to the households at a very low cost which is very important for the well being of the families. Self-sufficiency in terms of electricity has also been achieved in a number of households thanks to the installation of photovoltaic systems, where in some cases a household is even able to produce more than it consumes.



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