Integration of Energy Solutions in Maltese Households

Energy performance of buildings is a very important aspect of the overall energy management for Malta. In fact, it is obligatory to have an Energy Performance Certificate (EPC) for any residential building which is sold. In view of this, MIEMA carried out a study on the integration of solutions to improve energy efficiency in Maltese households as part of the ELIH-Med Project. The project is funded by the MED Programme and focuses on energy efficiency in low income housing in the Mediterranean area and the implementation of a large scale pilot project.

MIEMA carried out a pilot project consisting of installations of energy efficient solution and renewable energy sources in 35 low income households. Most of these households have several characteristics which are common to the majority of Maltese residential buildings. External walls are usually built with limestone blocks, without any insulation layers, which results in very bad thermal management of the houses. Unfortunately a number of solutions in relation to improvement of energy management require major retrofitting, however a number of solutions can be integrated in the building infrastructure in order to improve thermal performance of the buildings.

An example of this is roof insulation, which can be installed on existing roofs, given that they can support the added weight. Roofs are crucial elements in passive design. Since in Malta all roofs are flat, they are responsible for the biggest thermal exchange in between conditioned spaces and the outside. In fact a number of households participating in the ELIH-Med project benefitted from the installation of roof insulation tiles that help to maintain a comfortable ambient temperature inside the households.

Other solutions that can be integrated are solar screens and louvers. The installation proposed is integrated with new window frames and is composed by an external overhang and an internal diffusers that will reduce direct sunlight that enters inside the building in summer. Such a system also helps to distribute the light further into the room by reflecting it onto the ceiling.

Energy retrofitting project of typical Maltese households is a very important element in improving energy efficiency, especially in the cases of building with historical or cultural value, where the installation of visible renewable energy sources or energy efficient solutions is not possible. Integrated solutions will help to improve energy performance, reduce costs and move towards a more energy-efficient performance of buildings.