



Using Solar Energy for Purifying Water

Project Title

Desalination of Seawater & Brackish Water by Decentralised Solar Energy Units

Project Coordinator

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Project Partner

Water Services Corporation

Solar Desalination Technik

The Maltese islands have become increasingly dependent on the use of Reverse Osmosis technology for the production of potable water. This process is very energy intensive, and places a significant strain on the country's economy as well as contributing to its CO₂ footprint.

Solar energy can be utilised to convert seawater to potable water by evaporation using solar desalination units. The Department of Metallurgy and Materials Engineering at the University of Malta (UoM) has been conducting research on such units for a number of years. A number of conceptual designs have been developed and a miniature operational prototype has been constructed. This unit has yielded very encouraging results, but there is still ample room for improvement of the design in search of superior operating efficiency. This will require the construction of additional prototypes based on different operational principles in order to establish the most efficient and economically viable design for the Mediterranean environment.

The aim of the project is to design and develop desalination units which are thermodynamically efficient, economically competitive and which could be easily manufactured in Malta.

Water Services Corporation (WSC) will house the prototype units on which many of the tests will be conducted during the development stages. The laboratories at WSC will be responsible for testing to ensure that the water quality produced by these units is up to the relevant EU standards.