



NESOI
EU ISLANDS FACILITY

Sustaining drinking water services and electromobility in insular areas by integrating grid-tied and autonomous PV power

NERIDA



TILOS

“NERIDA will further advance the existing RES infrastructure on Tilos, by developing smaller-scale, distributed generation solutions for the water and e-mobility sectors”



This project is supported by the EU Islands Facility NESOI. NESOI has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°864266

The European Islands Facility NESOI aims to unlock the potential of EU islands to become the locomotives of European Energy Transition. To do so, NESOI aims to mobilize more than €100 Million of investment in sustainable energy projects to give EU islands the opportunity to implement energy technologies and innovative approaches, in a cost-competitive way. NESOI has selected 56 such projects across the European Union and provide them with financial resources and technical support.

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ABOUT THE PROJECT

**Project
Promoter**



Tilos Municipality
University of West Attica (UNIWA)

 **Country** Greece  **Sector** PV  **PROJECT VALUE** 200,000€

DESCRIPTION

The project consists in the installation of a grid tied 90 kWp PV system in municipality-owned installation site, capable to partially serve the needs of both EV charging station and existing water pumping stations

AIM OF THE PROJECT

Concurrently, the orchestration platform (OP) will be developed in UNIWA facilities, and shall be deployed on an existing computing server, on the island of Tilos. The platform will provide charging recommendations to drivers of municipal EV fleet and automatic operating instruction sets to water pumping stations, for offsetting between the produced water and water demand.

FUTURE STEPS

Implementing the OP for a versatile solar energy project will reduce electricity costs and GHG emissions for the Municipality. Switching to a green e-mobility model for municipal vehicle fleets will also reduce operating costs and GHG emissions, allowing further RES exploitation.

HOW THE EU ISLANDS FACILITY NESOI SUPPORTS THE PROJECT

- 1 Risk analysis and identification of available mitigation strategies
- 2 Identification of potential financing options
- 3 Market testing with potential investors
- 4 Review of energy audits and technical dimensioning of the project
- 5 Definition of the targeted tendering procedure
- 6 Drafting of works/services tender documentation
- 7 Support during the works/services tendering procedure Q&As

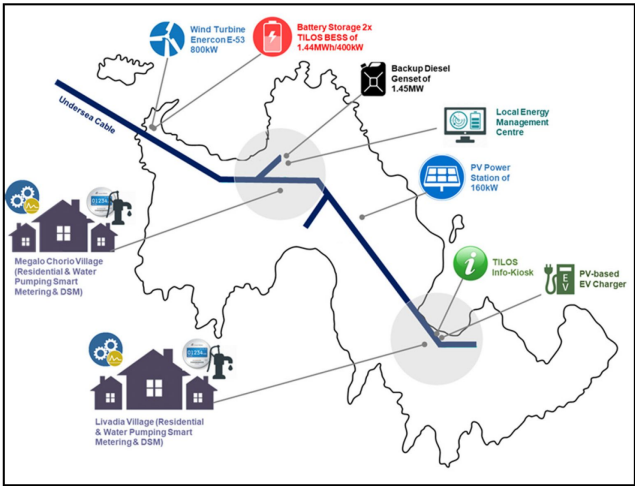


FOCUS ON SMALL-SCALE SOLUTIONS TACKLING GRID LIMITATIONS

Tilos island is part of an electric network of 9 islands interconnected together. Tilos wants to install 3 PV power plants, 1 grid-tied and 2 autonomous configurations on municipality-owned sites. The electricity produced locally would supply the eight water pumping stations and the EV fleet of the island.

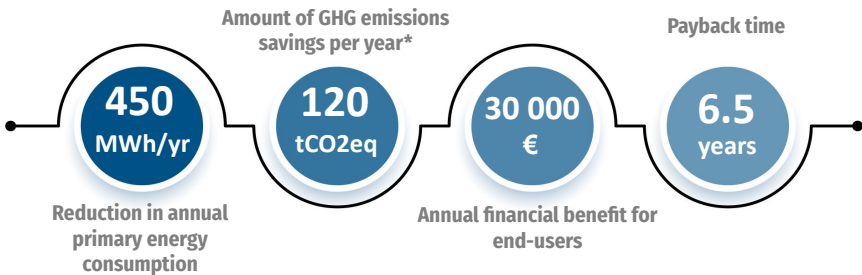
Tilos island is part of an electric network of 9 islands interconnected together. Tilos wants to install one grid-tied on municipality-owned site. The electricity produced locally would supply the eight water pumping stations and the EV fleet of the municipality.

Enhancing the existing RES infrastructure at Tilos is part of a larger multi-layer strategy aiming at bringing together the energy, water and transportation networks.



Description of Tilos island microgrid and geographical location of main assets. (Source: John K. Kaldellis - Energies 2021, 14, 1336)

KEY NUMBERS OF THE PROJECT



*assuming an emission factor of ~800gr/kWh

REPLICABILITY IN OTHER ISLANDS

Replicability of NERIDA will rely on the production of a Handbook that integrates: I) the experience gained by developing the pilot, and II) crisp insights on technical aspects and typical procedures for adopting the proposed solution, constitutes the first pillar for wide-scale replication. Correspondingly, developing interoperable tools, i.e. the orchestration platform, that coordinates central and DG - PV power, forms the second pillar that contributes in replicability. Scalability is inherent characteristic of the solution.