

ENERRAS



ASTYPALEA

“Astypalea signed in 2020 a breakthrough project envisaging full electrification of its transport system to achieve a 100% decarbonization by 2050.”



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.



Energy PlaNning for cLEan eneRgy TRansition for AStypalea

ABOUT THE PROJECT

**Project
Promoter**



Municipality of of Astypalea



Stakeholders

Municipality of Astypalea
Municipal Waste Management company

Municipal Water Supply and Sewerage Company
Hellenic Distribution and Network Operator



Country Greece



Sector

Energy transition
plan



PROJECT VALUE 45 M€

DESCRIPTION

Astypalea has a semi-mountainous morphology, and a great part of its land is listed in the Natura 2000. The island is part of the Clean Energy for EU Islands (CE4EUI) initiative and has set a target for a 60% share of renewable electricity by 2030, and full decarbonization by 2050.

AIM OF THE PROJECT

The creation of a Clean Energy Transition Agenda (CETA) and a Sustainable Urban and Island Mobility Plan (SUIMP). Firstly, the island dynamics will be described and secondly, the island transition path is elaborated. In the second phase, the agenda will go one step further by extending the synergies beyond energy, transport and ICT to also include water and waste.

FUTURE STEPS

The actions foreseen in CETA (e.g. smart grids, increase in energy efficiency, RE production, sustainable transport) are planned to be completed in at least 20 years. Smart, sustainable and flexible mobility measures planned in SUIMP are proposed to be implemented in 5 to 10 years.

HOW THE EU ISLANDS FACILITY NESOI SUPPORTS THE PROJECT

- 1 Socio-economic, territorial and environmental analysis
- 2 Definition of the energy balance of consumption and emissions
- 3 Analysis of the local RES potential and of local heating and cooling demand
- 4 Analysis and mapping of regional, national and European planning tools
- 5 Support in participatory processes and in the drafting of the CETA and the SUIMP
- 6 Action plan and monitoring system, allocation of responsibilities for its implementation
- 7 Mapping of the main financial instruments available to finance the identified actions and preliminary indication of the steps to approach them





INTERVIEW WITH

**Manolis Giannaros, Special Associate of the Mayor ,
Municipality of Astypalea**

Q: How was the project initially designed? Why choose this specific sector?

A: The project was designed to define the transition to clean energy in Astypalaia. The aim was to exploit the renewable energy potential through small energy projects to cover the needs of the island, the transition to sustainable transport, the reduction of energy costs, the active participation of the local community and the preservation of the natural landscape. The project was initiated by the Municipality of Astypalaia and is one of the bases for future projects on the island.

Q: What were the challenges? How did NESOI help overcome them?

A: The main challenges that the project faces are the constraints of the current institutional framework, issues with engaging the local community, the finding and optimal utilization of available financial tools and for the technical side, how to upgrade the existing infrastructure. NESOI has mostly helped to address these challenges by providing technical support.

Q: What will be done next to pursue this project?

A: The CETA and SUMP plans are ongoing, and a series of actions is planned for their implementation. Future steps include finalizing these actions and securing the necessary funding and technical resources for further maturation and implementation. We anticipate that we will need further technical and financial support.

Q: What are the basic criteria for the reproduction of the project ?

A: To successfully implement the energy transition by also considering the locals, a key criteria is to cultivate the active participation and consent of the local community. The envisioned changes to the infrastructure must be adapted to the specific conditions of the area, such as climate, landscape, topography, etc.. On the financial side, the focus should be on the most viable, and efficient solutions to maximise opportunities to get funding. Also, the compatibility with local, national and European policies and legislation must be ensured.

THE IMPACT

ON LOCAL COMMUNITY



1 Local Economy

Jobs will be created for the installation, operation and maintenance of all new systems and local technicians will gain significant know-how. Business models, that promote local financial benefit through cooperation, co-investment and external funding are adopted.

2 Social Acceptance

To increase social acceptance, active citizens and other stakeholders are engaged in all stages of the process. The planning for the locations of RES will be conducted collectively. Energy poverty mitigation is planned from the start, which helps social acceptance of the developments.



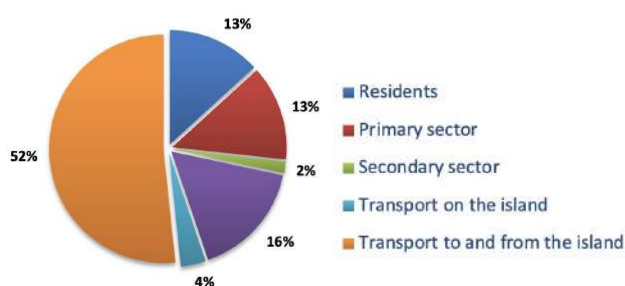
FOCUS ON THE DEVELOPMENT OF A CETA AND SUIMP

Clean Energy Transition Agenda (CETA) is a strategic roadmap for the transition process towards clean energy in the context of Clean Energy for EU Islands initiative*. It is designed by the local community, for the local community.

Sustainable Urban and Island Mobility Plan (SUIMP) is a strategic plan with the goal of making a shift towards sustainable mobility.

* See <https://clean-energy-islands.ec.europa.eu/>

Energy for final use



Percentage distribution of final energy consumption by sector in Astypalea
(Graph in CETA for Astypalea, info gathered during NESOI ENERRAS project)

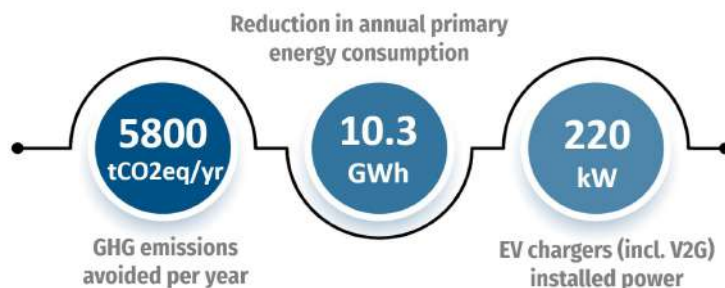
In the ENERRAS project, the following technical solutions were studied for CETA and SUIMP.

- Installation of solar PV panels for energy poor households through the net metering scheme.
- Upgrade of street lighting to LED technology.
- Installation of smart-cities system.
- Energy retrofitting of public buildings.
- Building energy management system (BEMS).
- EV charging stations & promotion of e-mobility.
- Installation of a hybrid power station (small wind turbines, PV panels and a battery unit).
- Promotion of alternative modes of transport (bikes, sharing modes, public transportation).

EXPECTED ENERGY SAVINGS

The vision is based on the national target of 32.5% reduction of the energy consumption by 2030 compared to 2005 (National Energy and Climate Plan, 2019). Therefore, a minimum of 10 GWh annual savings is necessary. Energy savings will be achieved through the increase in the energy efficiency and the share of renewable electricity as well as the upgrades to the transportation system. Annual energy costs are expected to decrease by €1,100,000.

KEY NUMBERS OF THE PROJECT



REPLICABILITY IN OTHER ISLANDS

The solutions proposed, first implemented by the Municipality can effectively roll-out to the whole island. The proposed solutions are replicable for most non-interconnected islands as a pathway to their swift decarbonization. One possible restriction to the replicability could be differences in the available capacity for new RES plants.

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Picture in Summary page: photographer: Gf uip; https://commons.wikimedia.org/wiki/File:Astypalaia_%28town%29.jpg, license: CC-BY-SA-3.0, modifications: none

