Clean energy for EU islands

Spatial planning in support of islands' decarbonisation

The case of Greek islands

#CE4EUislands

The case of Kythnos

Wind turbine repowering in Kythnos (WiRe-K)

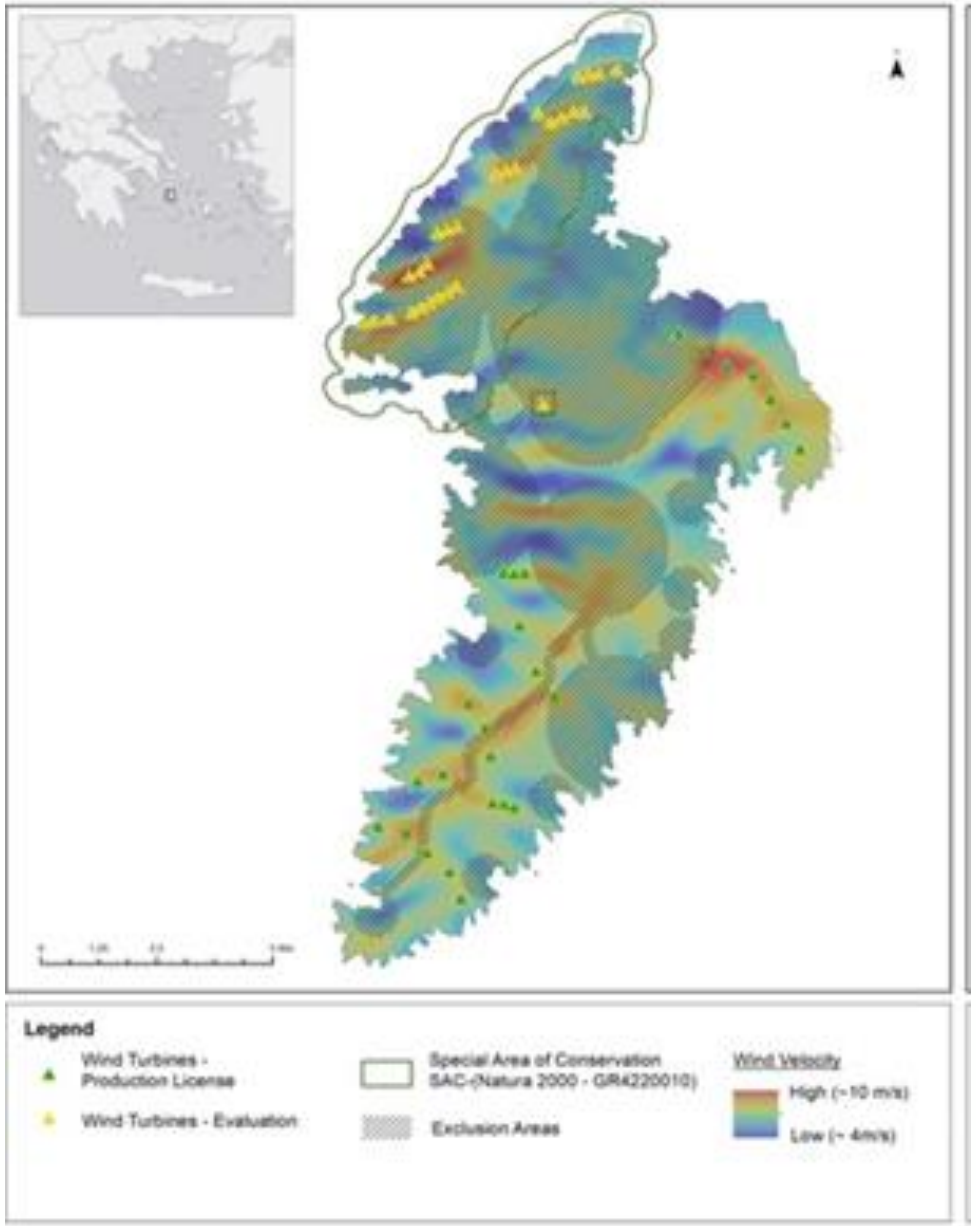
A project funded by NESOI Islands Facility

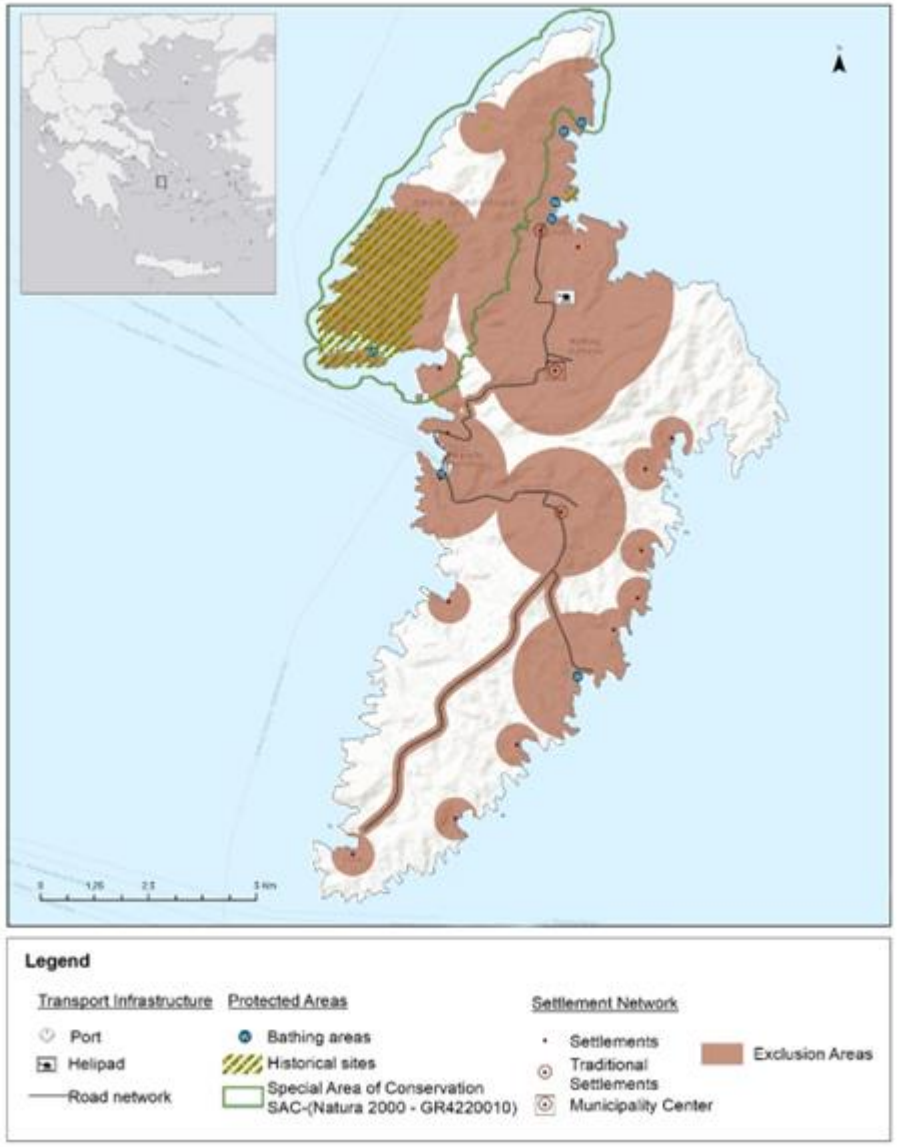
Objective

To re-power the existing 600kW Public Power Corporation Renewables (PPCR) wind turbine project on Kythnos Island.

The challenge

The location of the old wind turbine is no longer valid according to the current legislation


Legend
Wind Turbines - Production License
Wind Turbines - Evaluation
Special Area of Conservation SAC-(Natura 2000 - GR4220010)
Exclusion Areas
Wind Velocity
High (~10 m/s)
Low (~ 4m/s)

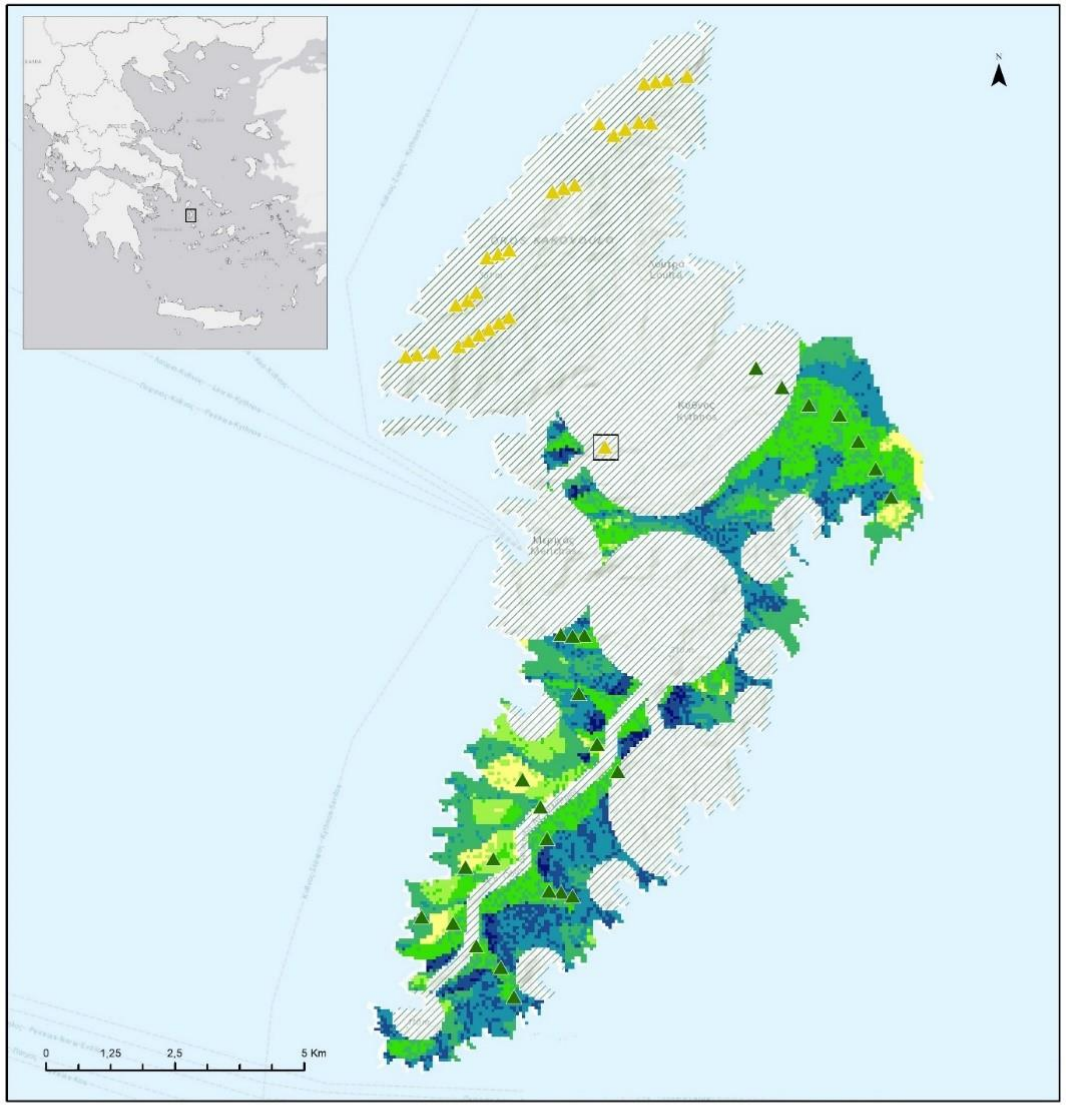


Special Framework for Spatial Planning and Sustainable Development for Renewable Energy (SFSPSD-RES) - 2008

Main categories	Exclusion criteria	Type	Buffer zones SFSPSD RES (d = 85 m)
Areas of Cultural Interest	Protected cultural monuments and historical sites	Polygon	7 d (600 m)
Residential Areas	Settlements < 2000 population	Point	500 m
	Traditional Settlements	Point	1500 m
Infrastructure	Main Road Network and Railway Lines	Line	1.5 d (130 m)
	Aviation Facilities and Activities	Point	2500 m
Areas of environmental Interest	Bathing areas included in the monitoring program “Bathing Water Quality in Greece” (Ministry of Environment and Energy)	Point	1500 m
	Special Areas of Conservation – SAC	Polygon	Existing area (0 m)

**d= Rotor diameter*

European Commission



Legend

Suitability

High

Low

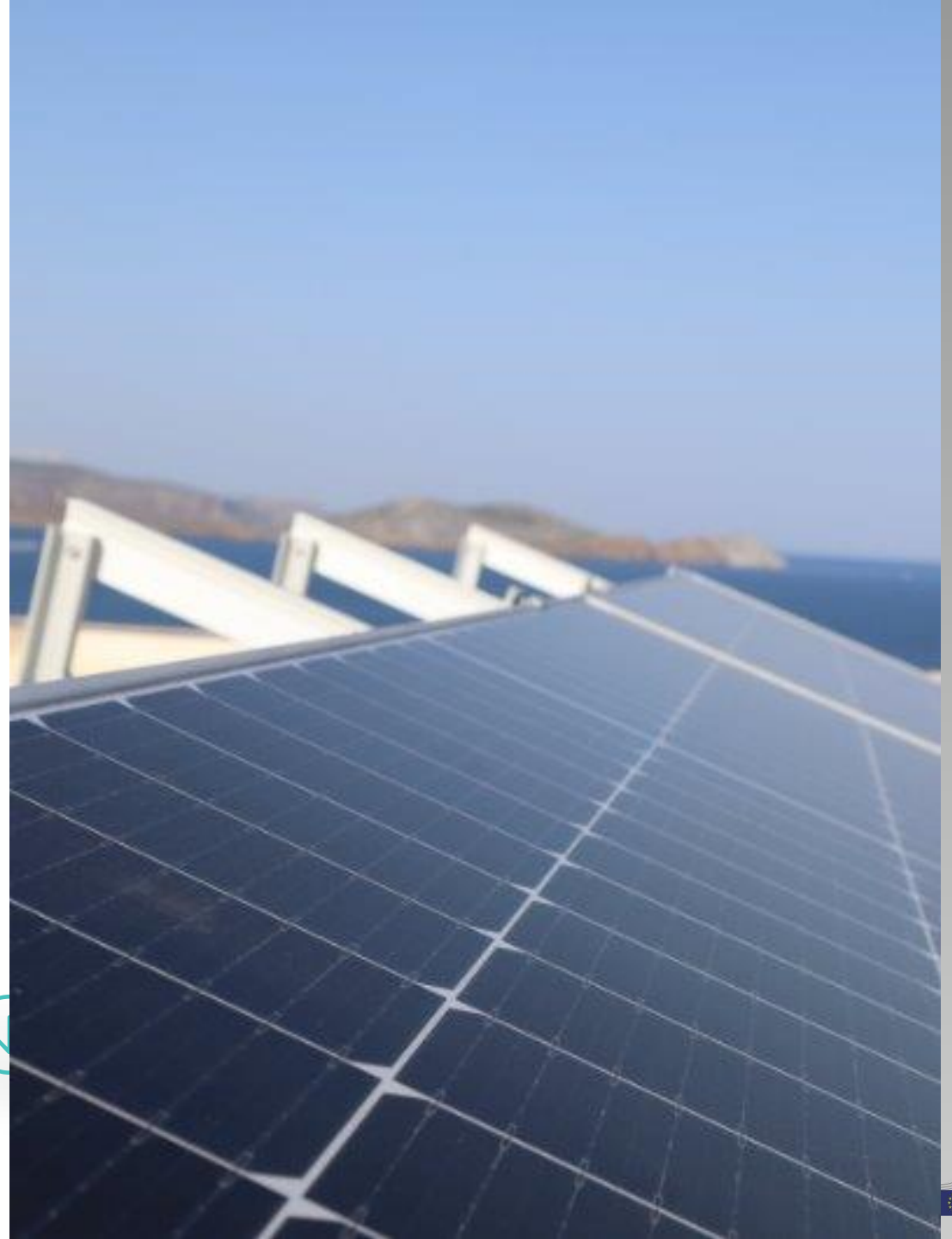
Incompatible

Wind Turbines - Production License

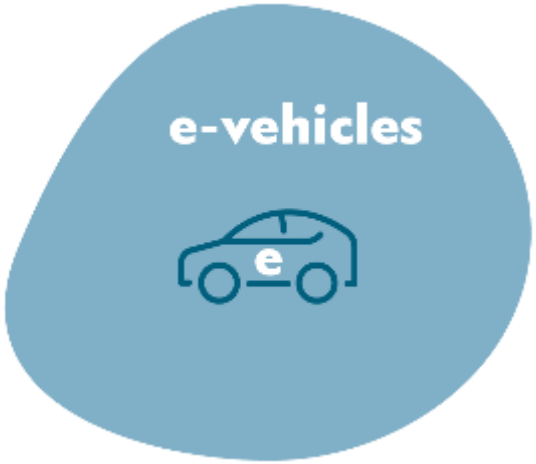
Wind Turbines - Evaluation

Actions	Description	Actors involved	Duration
1	Site selection for the installation of the wind turbine and behind-the meter battery system (consultation with HEDNO)	PPCR and landowners willing to sell their properties for the new installation	1 month
2	Modification of the existing production license (wind power 665 kW) to include the new site (1st modification) and technology (BESS) (2nd modification)	PPCR, RAE	2 months
3	External partner to undertake the management of the final studies and licensing procedures	PPCR, external partner	Throughout the licensing period
4	Environmental license	PPCR (project owner), Issuer: Decentralized Administration of Aegean (DAA), <u>Opinion</u> Municipality of Kythnos, (MoK) Ephorate of Antiquities of Cyclades, Hellenic Civil Aviation Authority, Hellenic National Defense General Staff, Forest Protection Service of Cyclades Ephorate of Palaeoanthropology and Speleology	3 months
5	Final Connection Offer	PPCR, HEDNO	2 months
6	Construction Permit	PPCR, Construction Authority of Syros (YDOM)	1 month
7	Installation license	PPCR, Region of South Aegean (RSA)	20 days
8	Connection Contract	PPCR, HEDNO	3 months
9	Power Purchase Agreement	PPCR, HEDNO	2 months
10	Reimbursement fee contract	PPCR, MoK	

The case of Astypalea

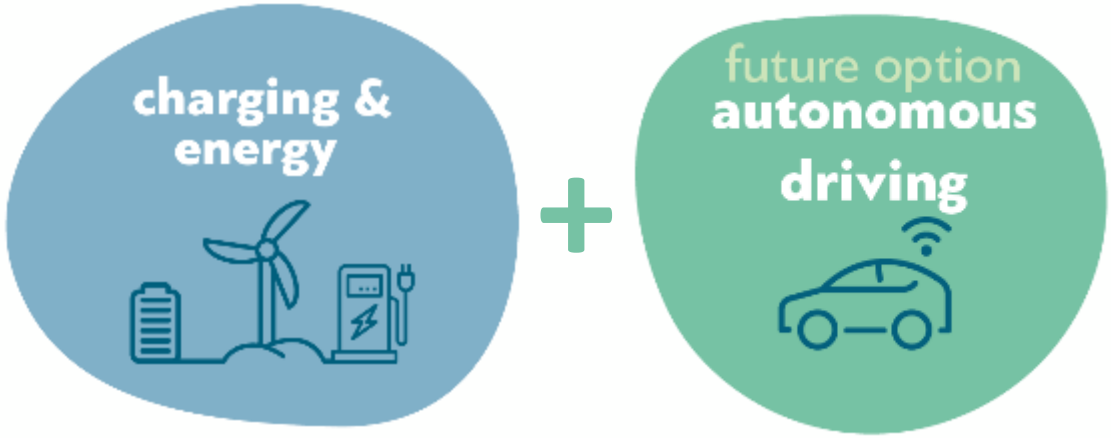


The 4 pillars



Switching the existing fleet of combustion vehicles to electric ones

Public transportation will operate on demand, taking us wherever we wish, whenever we need

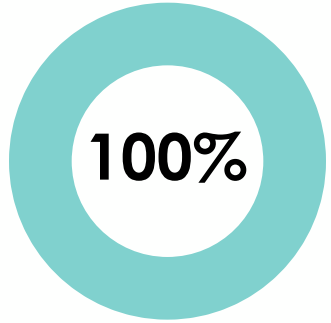


A hybrid energy system will replace the existing diesel generators, to feed the charging infrastructure

Hybrid energy system

1st phase
(BY 2023)

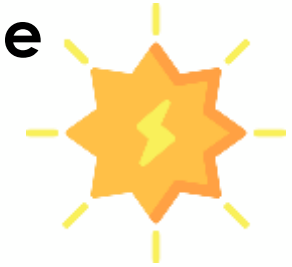
Photovoltaic plant
& battery system



Covering EV charging needs

Islands energy needs

2nd phase
(BY 2026)



Hybrid system
expansion

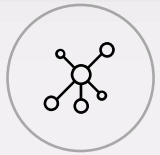
Islands energy needs

First phase

Volkswagen poster

Hybrid station

Tender launched by the regulator and won by PPC Renewables



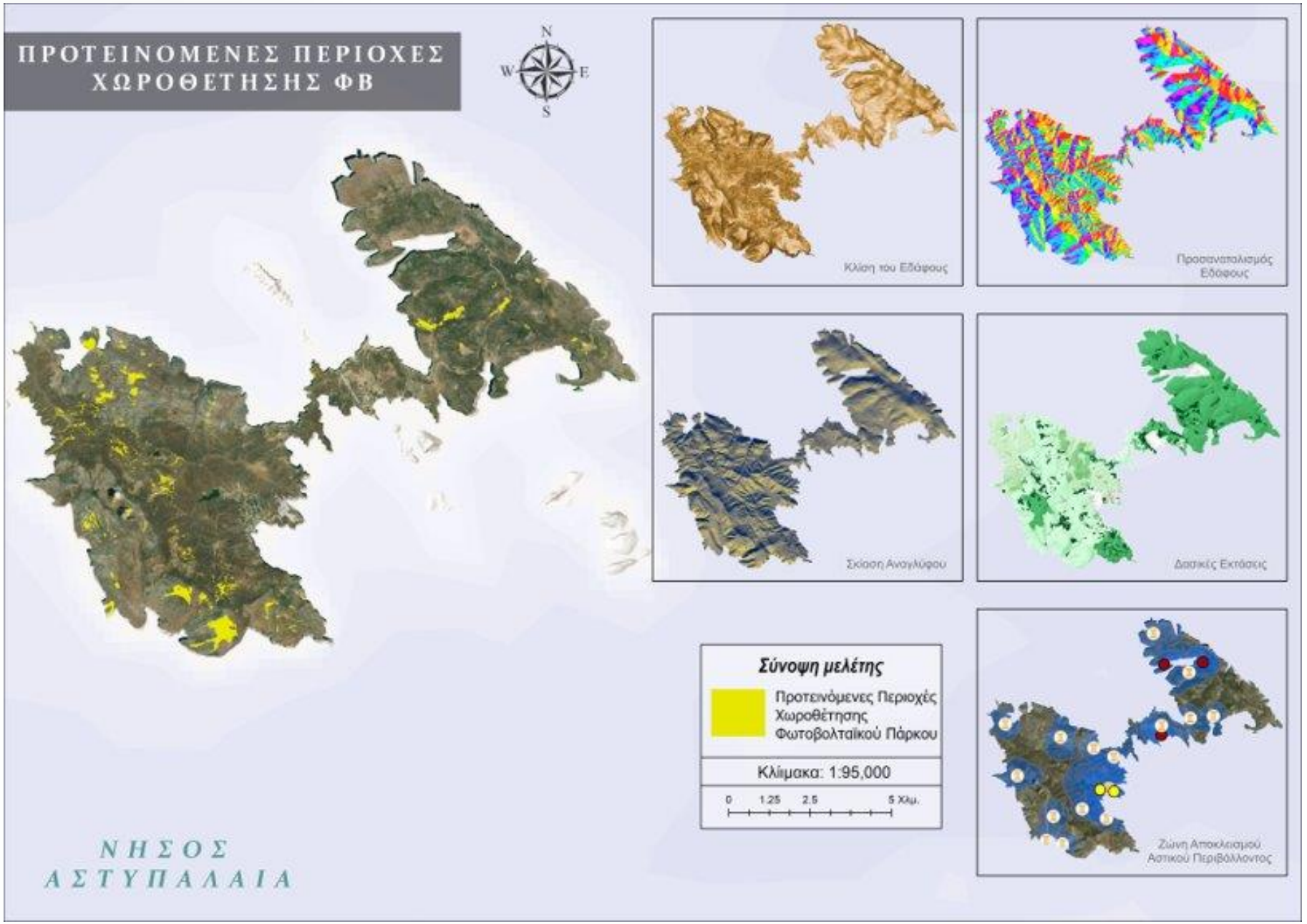
Objective

To install the additional capacity and reach over 85% of RES penetration

The challenge

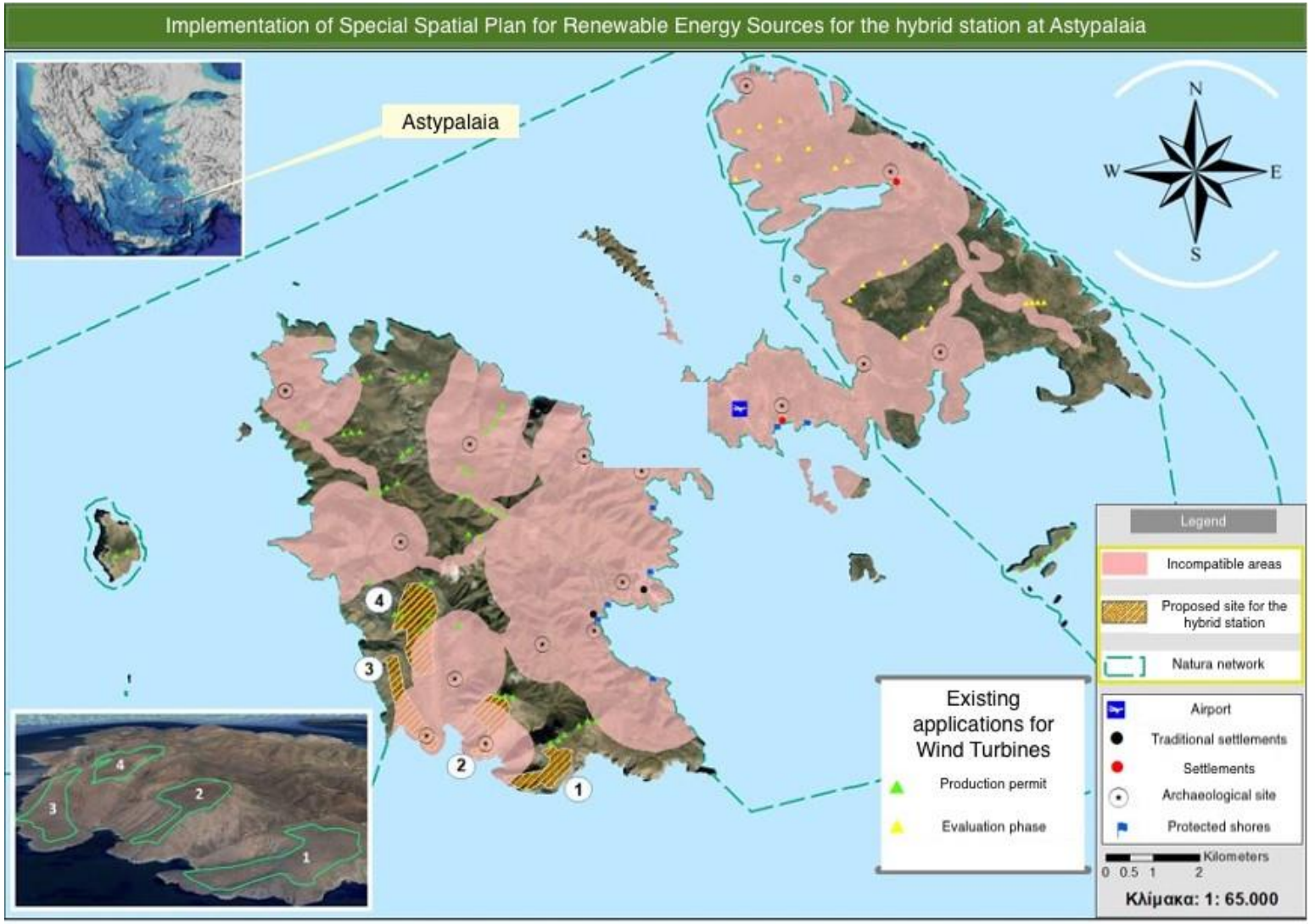
Select a site of high local acceptance

Identification of suitable areas

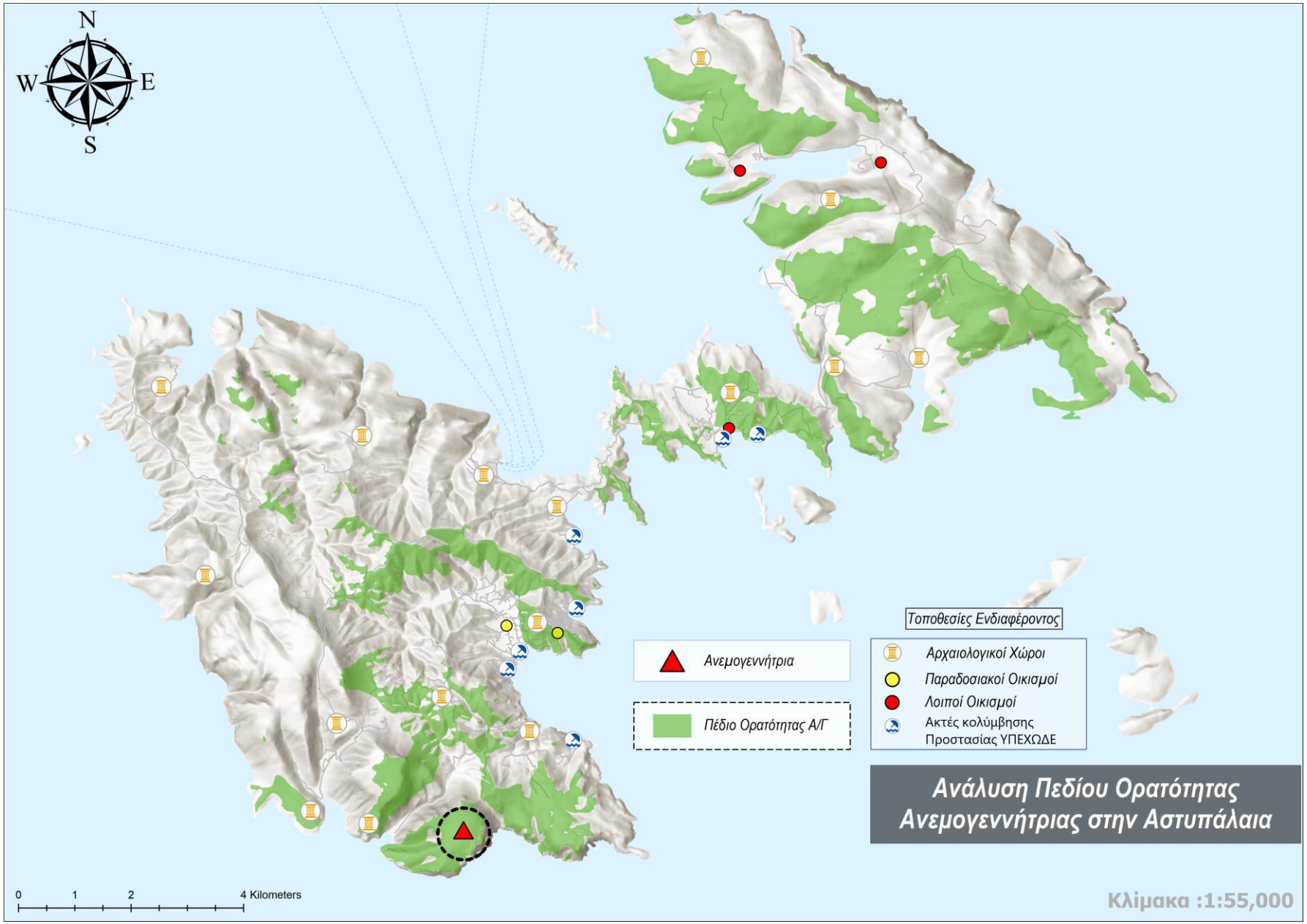


European Commission

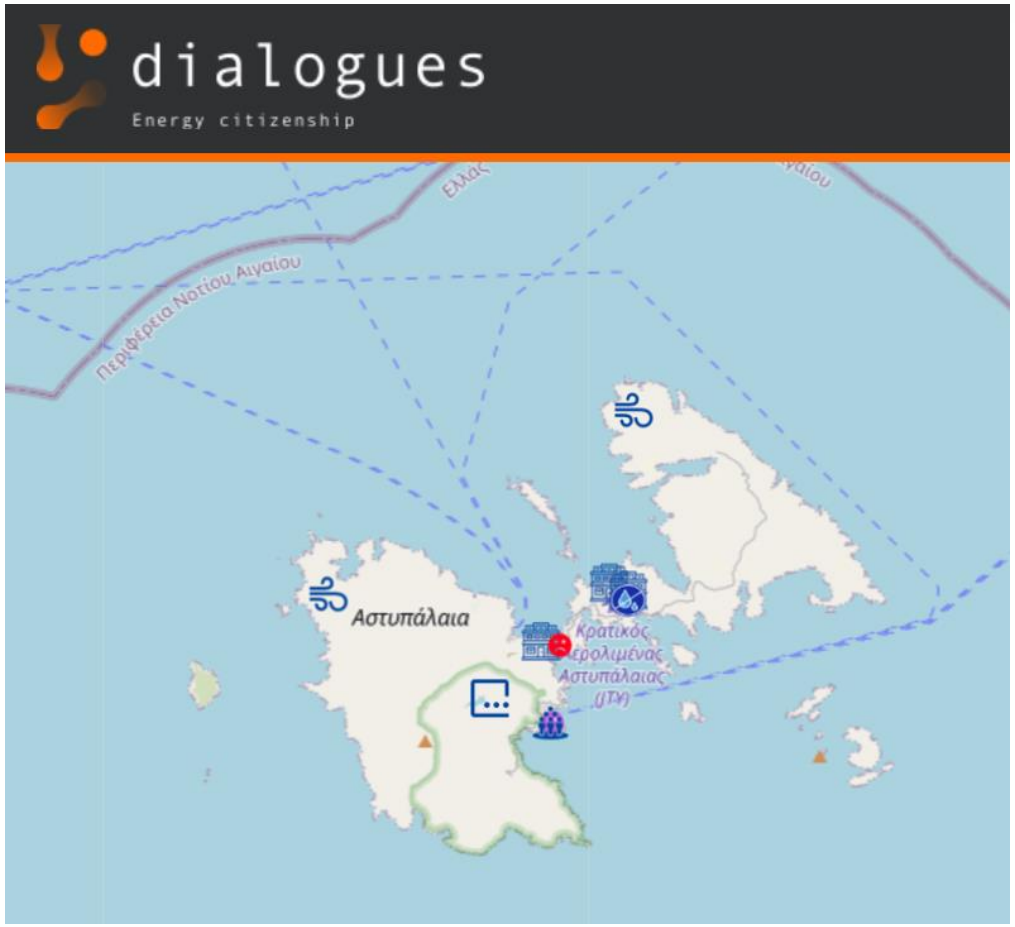
Mapping and assessment of municipal land



Visibility analysis



Geospatial questionnaires and augmented reality



What we re working for

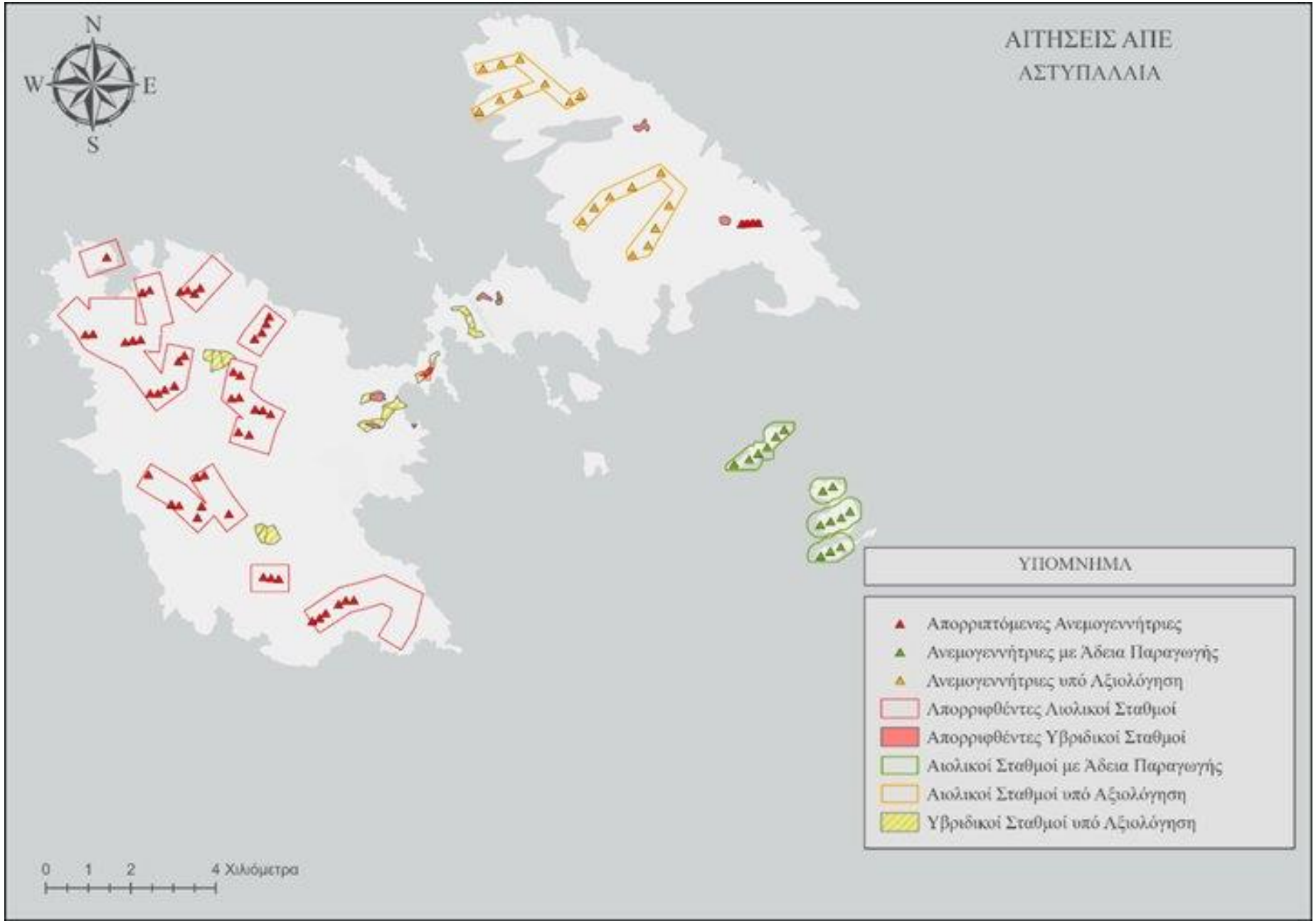
- Substantial enhancement of dialogue with local governments, collective bodies, and residents
- Update of the Special Regulatory Framework for Renewable Energy Sources (RES) and adaptation to the island regions, taking into account the specific characteristics of each island.
- Strengthening the development of Clean Energy Transition Agendas by local authorities with official recognition of these plans.
- Promotion of integrated management solutions for our island infrastructures, combining clean energy production and energy efficiency projects with waste, water, and transport management, in line with the principles of the circular economy.
- Promotion of collective implementation of clean energy projects through the establishment of Energy Communities, ensuring that the benefits of these projects are shared and access is prioritized for local bodies and individuals.

Thank you!

info@euislands.eu

Belgium, Kalkkaai 6 1000 Brussels

RAE Geospatial tool



European Commission