

The Interreg Med Renewable Energy Project presents:



ETU Initiative Flagship Cases

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Coordinadora de Proyectos

Euro-Mediterranean Economists Association (EMEA)

03 Noviembre 2021



Project co-financed by the European
Regional Development Fund





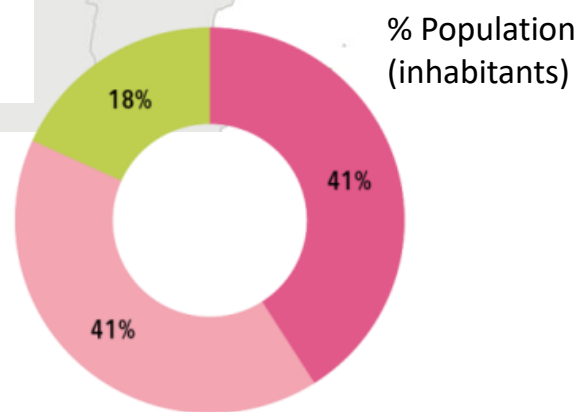
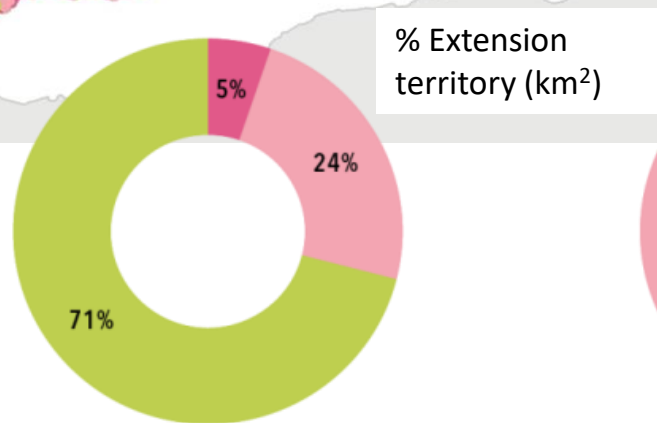
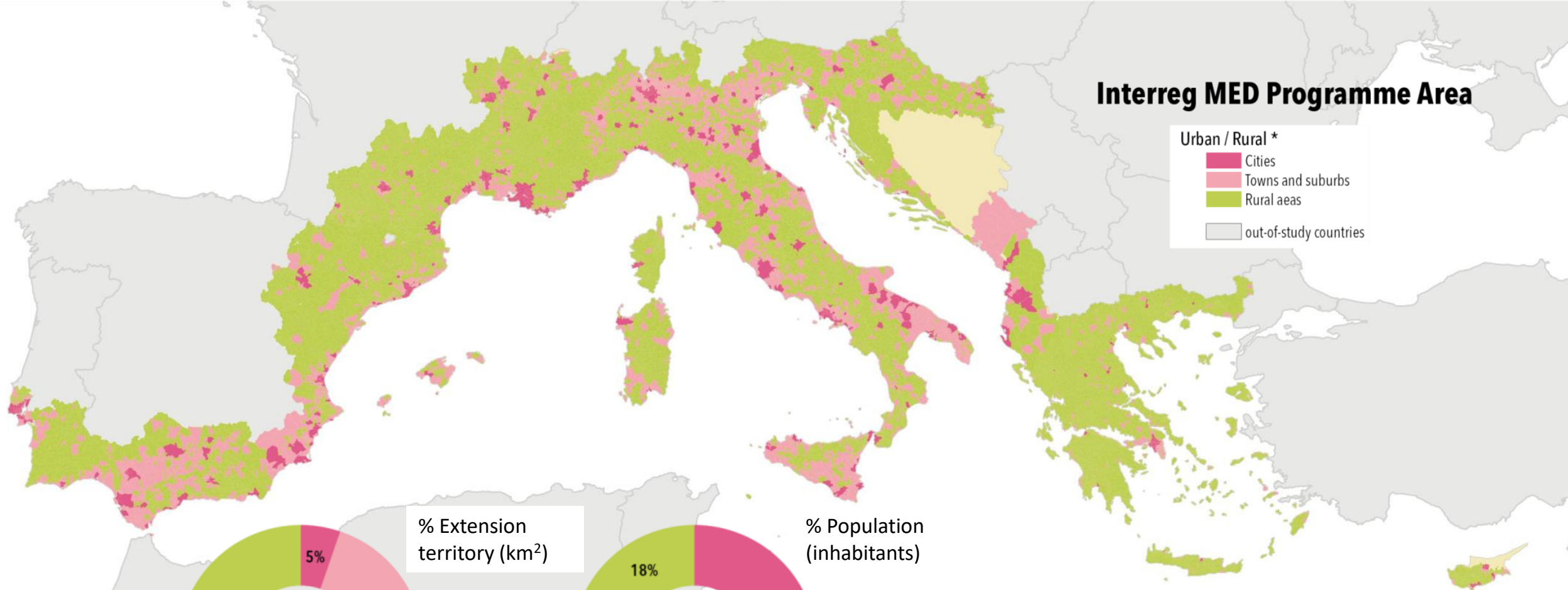


COMPOSE	Rural Communities engaged with positive energy
FORBIOENERGY	Forest Bioenergy in the Protected Mediterranean Areas
LOCAL4GREEN	Local Policies for Green Energy
PEGASUS	Promoting effective generation and sustainable uses of electricity
PRISMI	Promoting RES Integration for Smart Mediterranean Islands
STORES	Promotion of higher penetration of distributed PV through storage for all

Socios de proyecto

SRC Bistra Ptuj -Scientific Research Centre Bistra Ptuj (SL) Socio Líder
Euro-Mediterranean Economists Association (SP) Capitalización
Environment Park SPA (IT) Transferencia
Revolve (SP) Comunicación
North-West Croatia Regional Energy Agency (CR) – Experto Energía
Aegean Energy and Environment Agency (GR) – Experto Energía





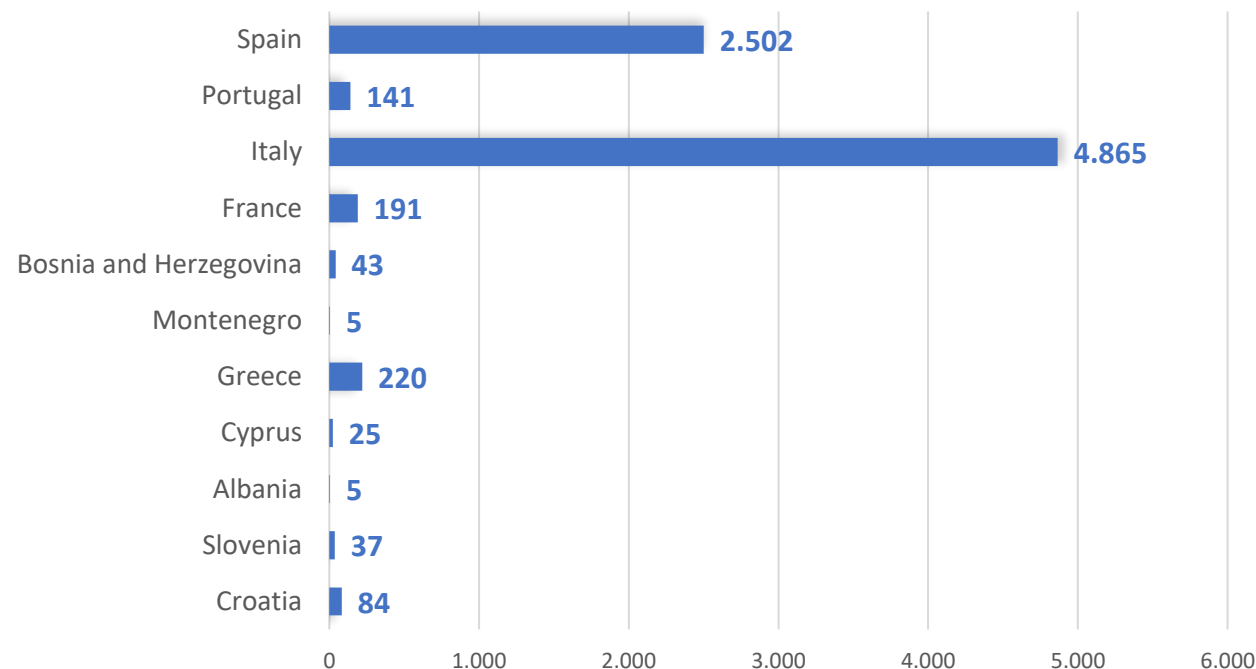
Pacto de Alcaldes

PAES/PAESC adheridos

Interreg MED Programme: las regiones acumulan:
8.118 adheridos
>120 millón de habitantes

Italia y España suman el 90% de los municipios firmantes dentro de los países del programa MED

40,54 % del total población del
Pacto de Alcaldes



Number of signatories by country

Elaborado por REGEA basado en el Covenant of Majors database (2020)

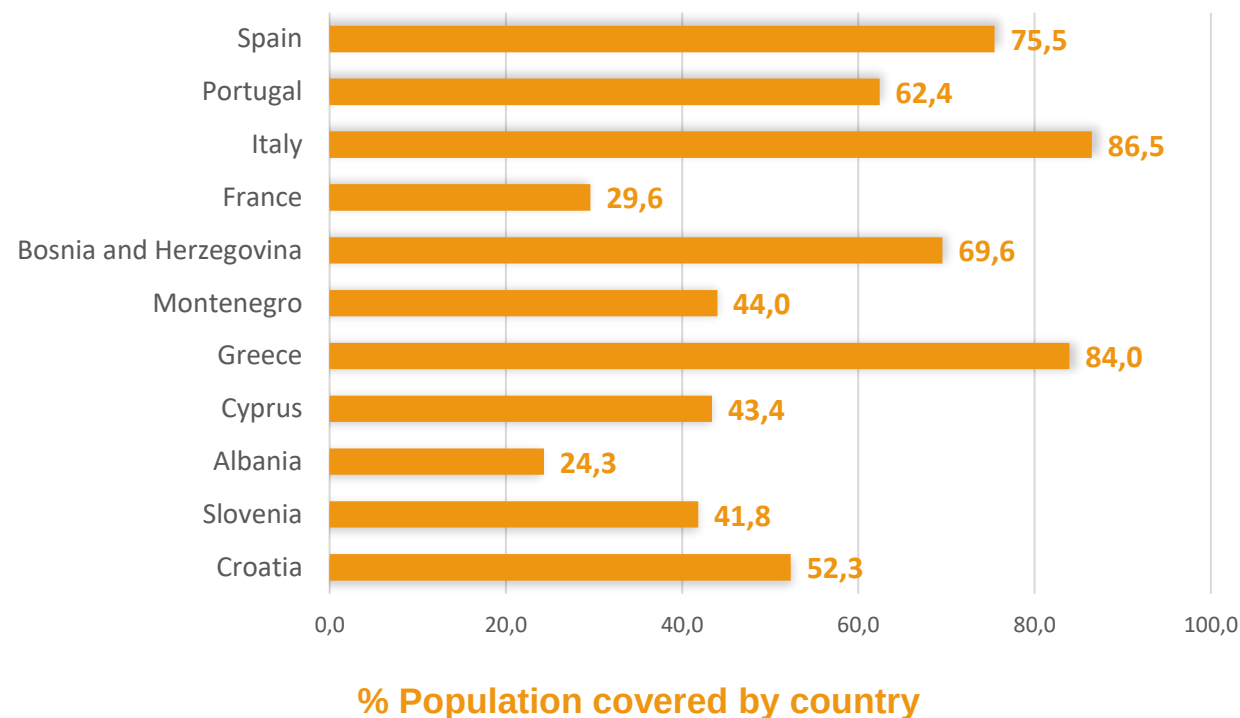
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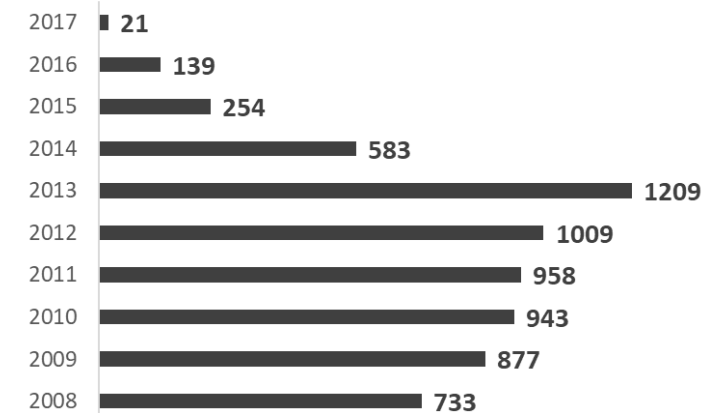
Elaborado por REGEA basado en el Covenant of Majors database (2020)

Legend

year of signature



Number of signatories/year

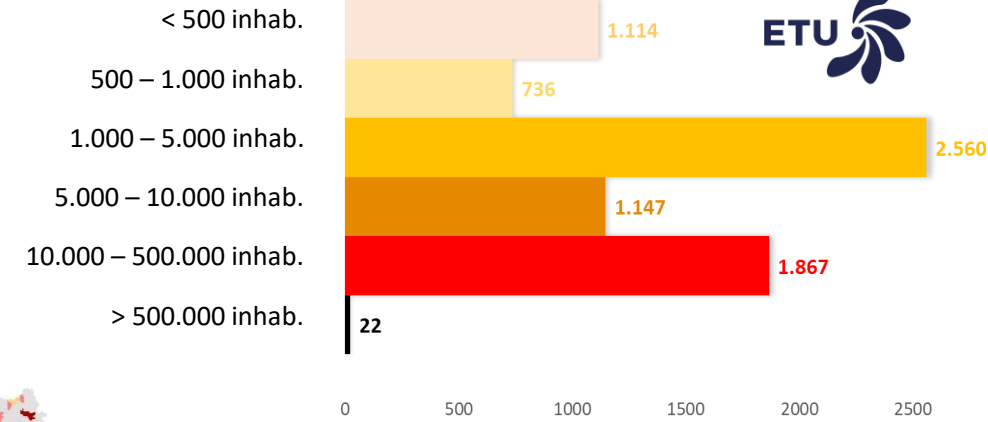
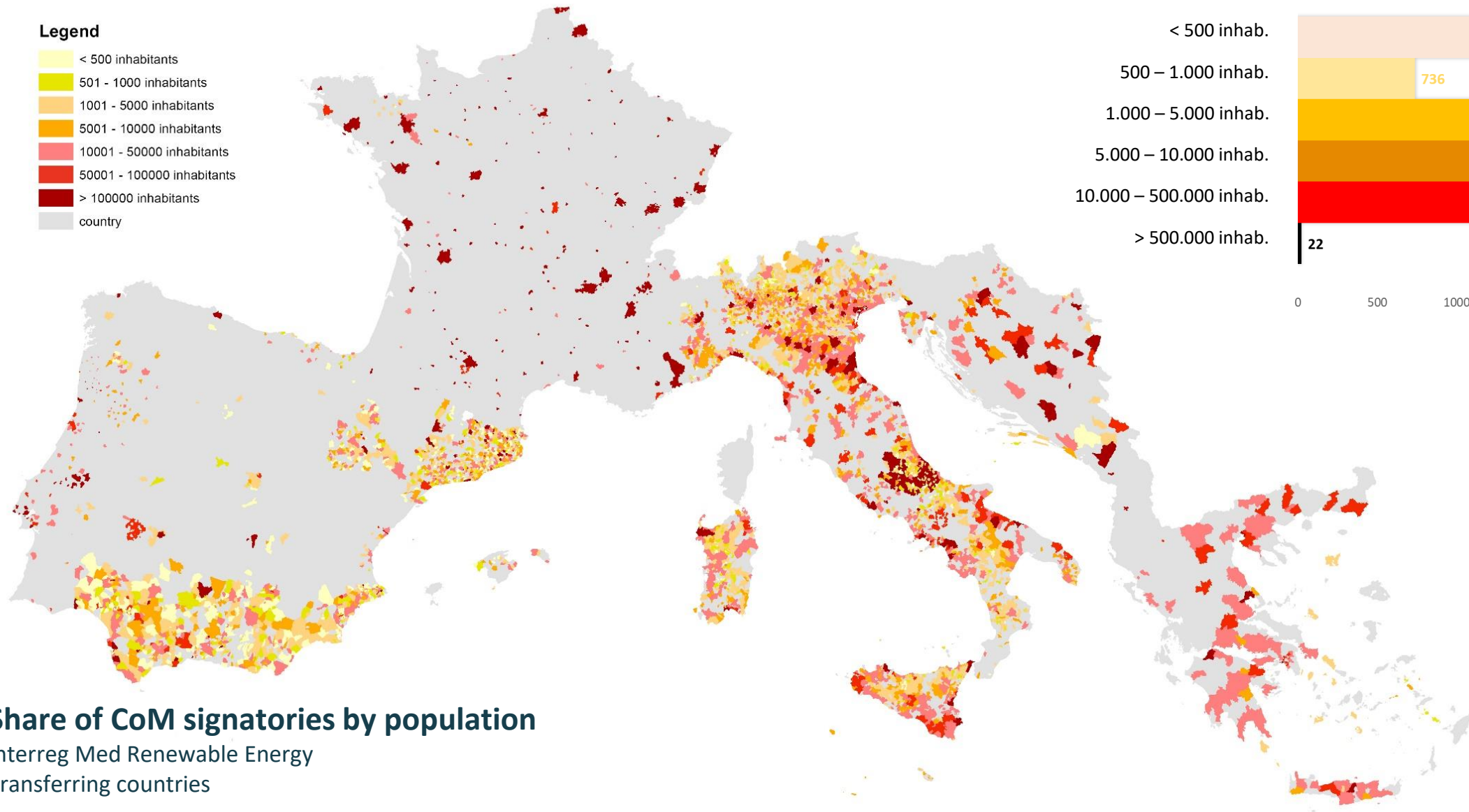
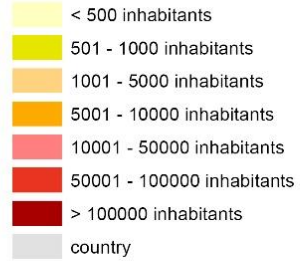


Evolution year of CoM signature

Interreg Med Renewable Energy
Transferring countries

Map elaborated by
Environment Park based on
Covenant of Majors
database (2020)

Legend



Share of CoM signatories by population

Interreg Med Renewable Energy
Transferring countries

Map elaborated by
Environment Park based on
Covenant of Majors
database (2020)

Necesidades y oportunidades a nivel local



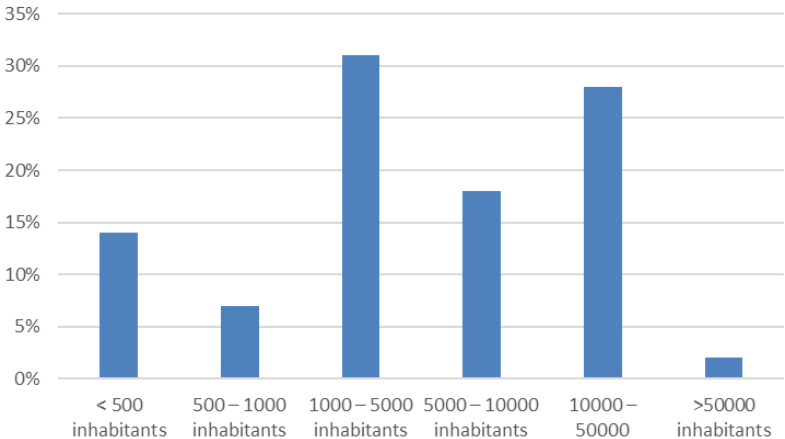
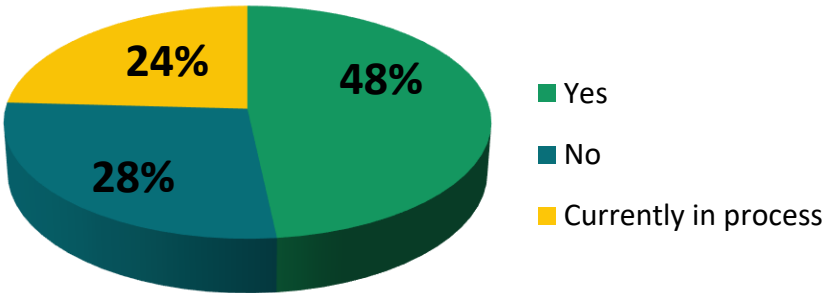
NECESIDADES:

- 1º Aumentar financiamiento
- 2º Atraer inversion privada en FER
- 3º Incentivos fiscales para FER

BARRERAS:

- 1º Obstáculos burocráticos
- 2º Coste intervenciones
- 3º Esquemas de financiación asequibles

Municipios desarrollando PAES/PAESC
(encuesta 2020)



ETU Initiative

ECOSYSTEMIC
TRANSITION UNIT

ETU



Ecologic Response
Territorial equity
Social Innovation
Green economy
Multilevel Cooperation

Interreg
Mediterranean



RENEWABLE
ENERGY

Project co-financed by the European
Regional Development Fund

The ETU Manifesto

The ETU model is based on
five principles that make up
our Manifesto:

www.etuinitiative.com
www.renewable-energies.interreg-med.eu



Holistic response to climate change

The ETU Initiative identifies climate change mitigation and adaptation actions, while addressing the regions' needs and aspirations.



Territorial equity

Implementing the ETU model boosts energy cooperation between rural and urban areas.



Social innovation

The ETU governance model empowers communities to lead the energy transition in their region.



Green economy

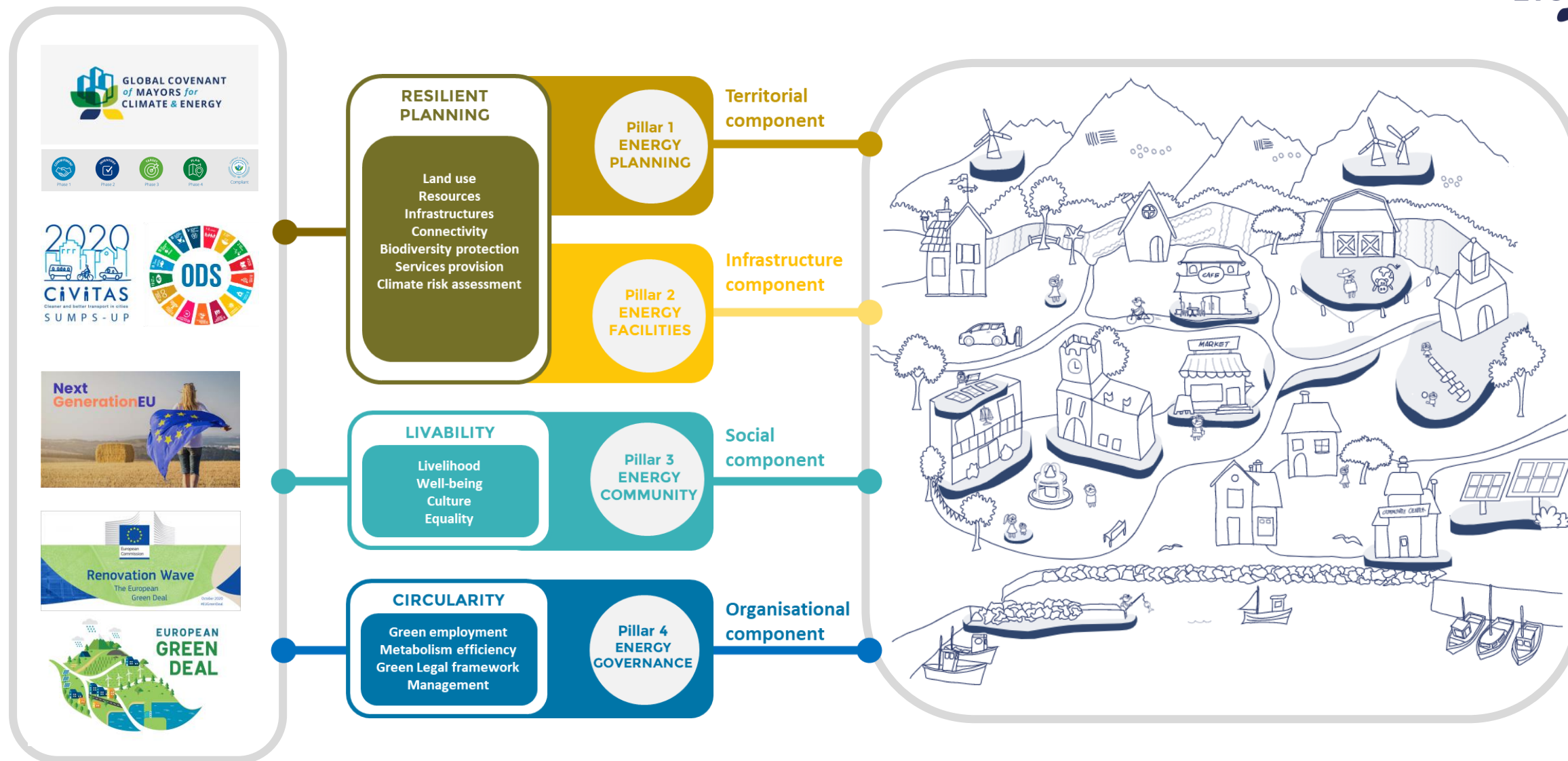
Integrating the ETU model into territorial planning creates alternative livelihood sources and opportunities for local residents.



Cooperation & Commitment

The ETU promotes multilevel governance for territories to identify their own potential.

The Four Pillars of the ETU



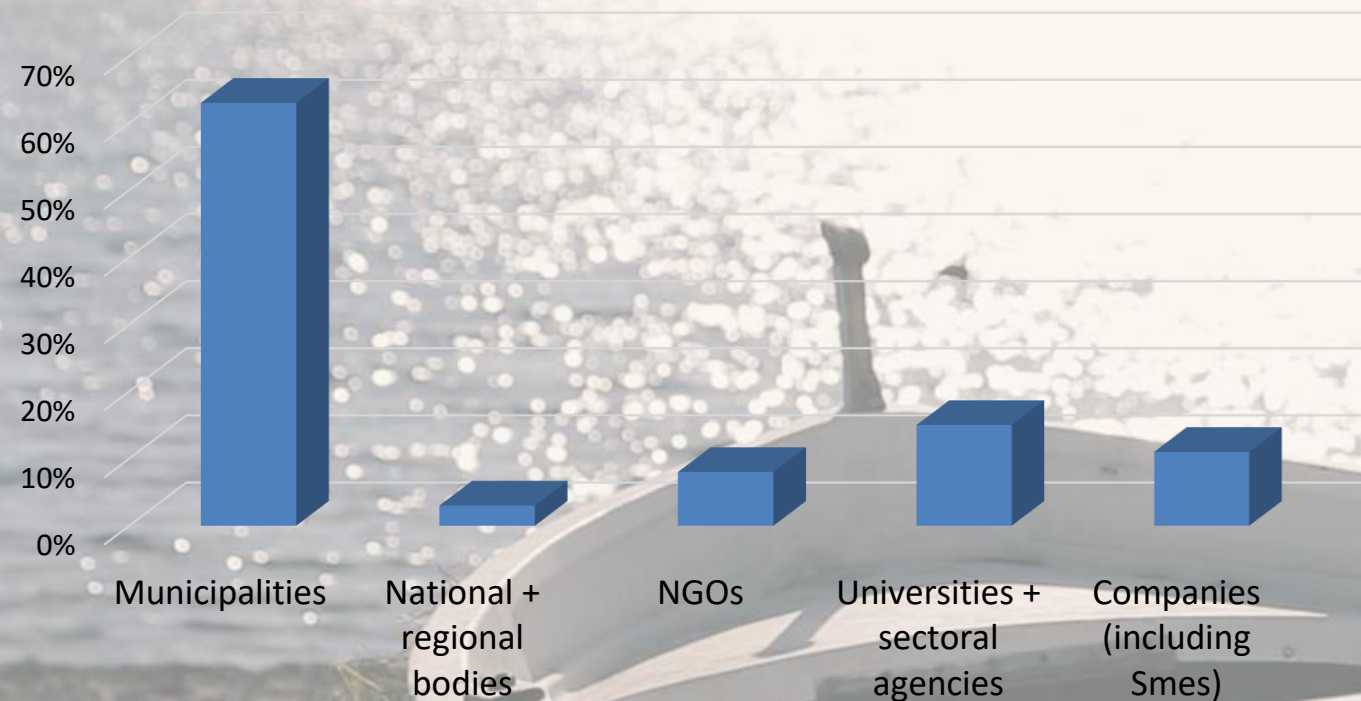
Interreg MED Renewable Energy Community



1. Online tools
2. Offline tools
3. Methodologies
4. Technical results pilots
5. Recommendations
6. Dissemination tools
7. Assessment tools

ETU Initiative

Programa de formación & Convocatoria Flagship Call



Enero – Marzo 2021

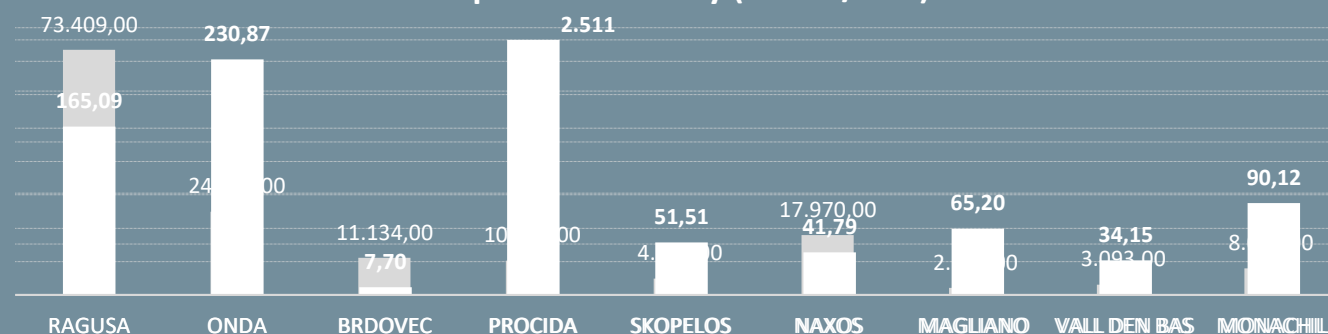
328 participantes (208 instituciones)
20 propuestas suscritas

ETU Initiative Flagship Cases

1. Municipio de Onda, Valencia (SP)
2. Municipio de Vall d'En Bas, Cataluña (SP)
3. Comarca Monachil – Granada (SP)
4. Comune Ragusa, Sicily (IT)
5. Comune Magliano Alpi, Piemonte (IT)
6. Procida, Campania (IT)
7. Naxos and the Small Cyclades (GR)
8. Skopelos (GR)
9. Brdovec (CR)



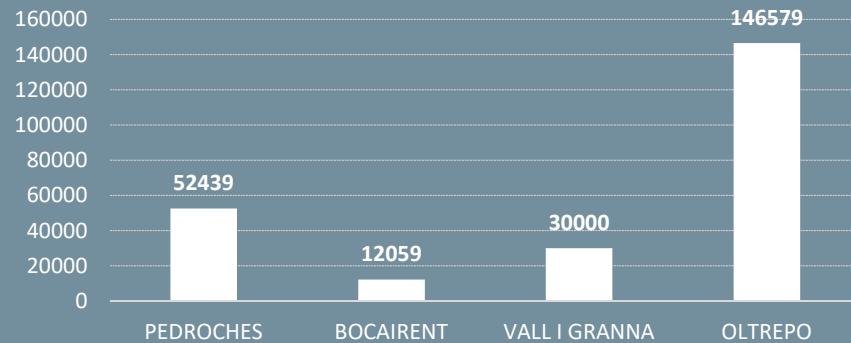
Population density (inhab./km²)



ETU Initiative Special Cases

1. Oltrepò Mantovano Consortium, Lombardia (IT)
2. Unioni Montane Valli Maira e Grana, Piemonte (IT)
3. Mancomunidad Energética Los Pedroches Cordoba (SP)
4. Mancomunidad de Bocairent, Valencia (SP)
5. Ghezala (Tunisia)

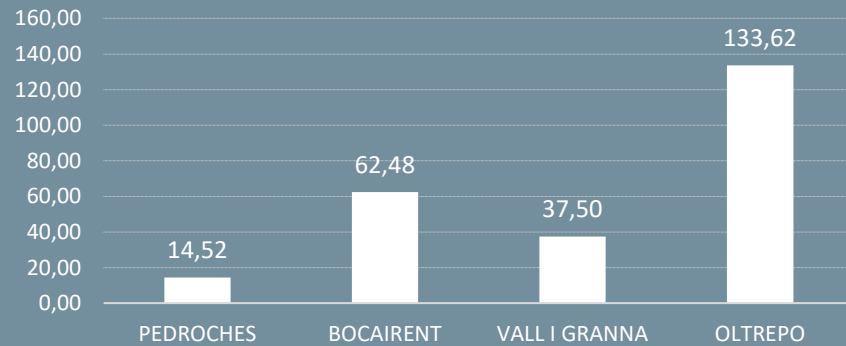
Population (inhabitants)



ETU Initiative Special Cases

1. Oltrepò Mantovano Consortium, Lombardia (IT)
2. Unioni Montane Valli Maira e Grana, Piemonte (IT)
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4. Mancomunidad de Bocairent, Valencia (SP)
5. Ghezala (Tunisia)

Population density (Inhab./km²)



SERRA DE MARIOLA: BOCAIRENT
4 Municipios rurales



LOS PEDROCHES
14 Municipios rurales y urbanos



OLTREPÒ MANTOVANO AREA
20 Municipios rurales



VALLI MAIRA E GRANA
21 Municipios rurales



GHEZALA, TUNISIA
Rural

ETU Initiative Flagship Call

Integración en el desarrollo de
PAES & PAESC



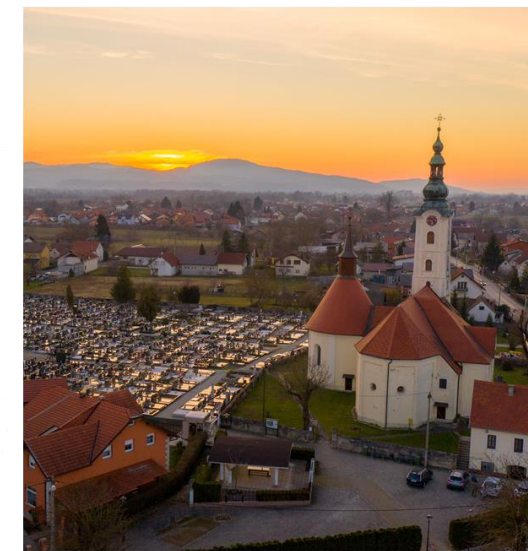
Onda, Valencia

Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment

COMPOSE	P1
FORBIOENERGY	P2
LOCAL4GREEN	P2
PEGASUS	P3
PRISMI	P3
STORES	P4

URBAN

Area extension:
108.42 km²
Population:
24.980 inhabitants



Brdovec, Croatia

Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment

COMPOSE	P1
FORBIOENERGY	P2
LOCAL4GREEN	P2
PEGASUS	P3
PRISMI	P3
STORES	P4

URBAN

Area: 37,6 km²
Population:
11.134 inhabitants (2011)



Procida, Campania

Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment

COMPOSE	P1
FORBIOENERGY	P2
LOCAL4GREEN	P2
PEGASUS	P3
PRISMI	P3
STORES	P4

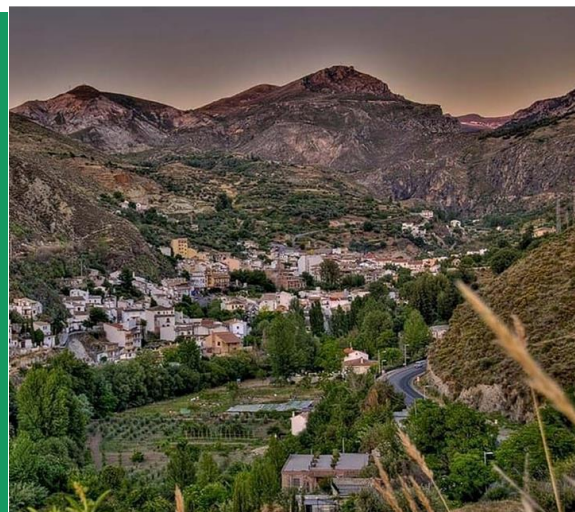
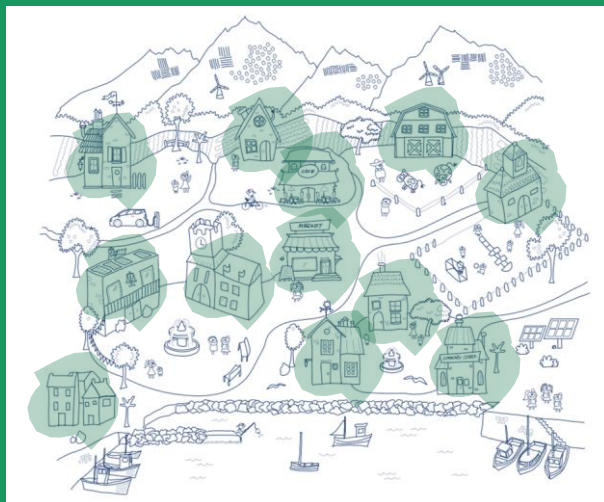
ISLAND

Area Extension:
4,26 km²
Population:
10,596 inhabitants

ETU Initiative Flagship Call



Integración en el desarrollo de
**Comunidades energéticas
locales**



Río Monachil, Andalusia

Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment



**RURAL AREAS
LOCAL ENTITIES:
CooperaSE**

Area Extension:
488,92 km2
Population:
8,007 inhabitants



Magliano Alpi, Piemont

Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment



RURAL < 5,000 inhab

Area extension:
32 km2
Population:
2,188 inhabitants



Vall d'en Bas, Catalonia

Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment



RURAL < 5.000 inhab

Area Extension:
90,7 km2
Population:
3,093 inhabitants



Ragusa, Sicily

Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment



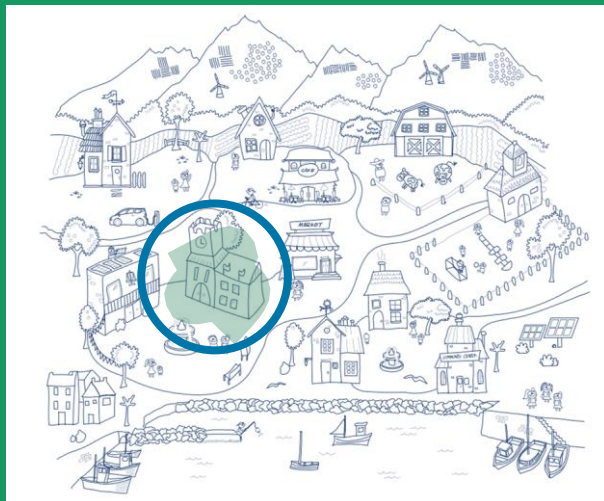
**RURAL CLOSE To
URBAN**

Area Extension:
442 km2
Population:
72,419 inhabitants

ETU Initiative Flagship Call



Integración en el desarrollo de
**Proyectos de transición
energética**



Project co-financed by the European
Regional Development Fund



Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment

COMPOSE

FORBIOENERGY

LOCAL4GREEN

PEGASUS

PRISMI

STORES

P1

P2

P3

P4

ISLAND

Area extension:
498 km²
Population:
17,970 inhabitants

Naxos & Cyclades, Greece



Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment

COMPOSE

FORBIOENERGY

LOCAL4GREEN

PEGASUS

PRISMI

STORES

P1

P2

P3

P4

ISLAND

Area Extension:
96,26 km²
Population:
4,960 inhabitants

Skopelos, Greece

1

Corto plazo

Instalaciones básicas
Reducción mínima de
emisiones

2

Medio plazo

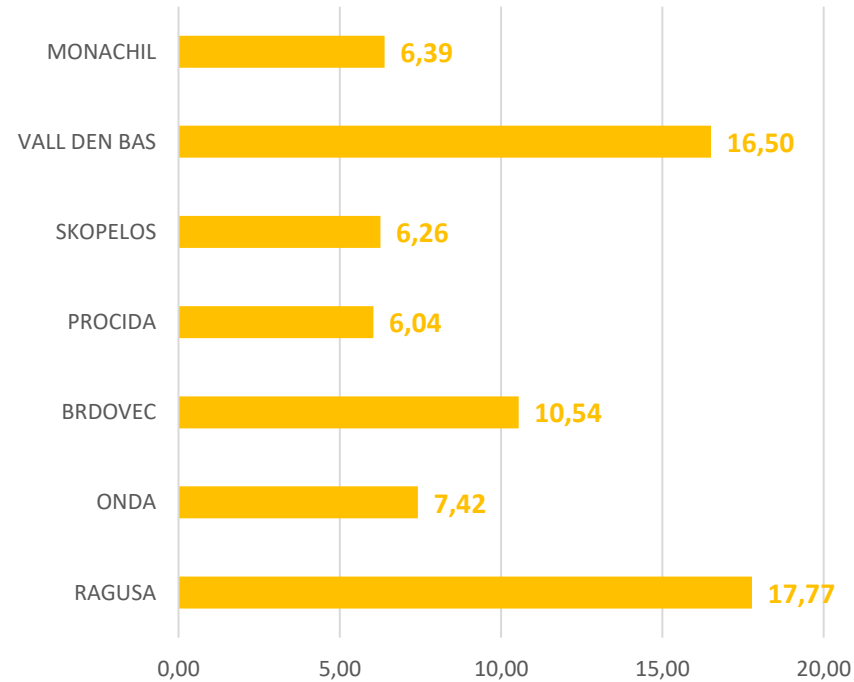
Acciones previstas para
cumplimiento de
objetivos al 2030

3

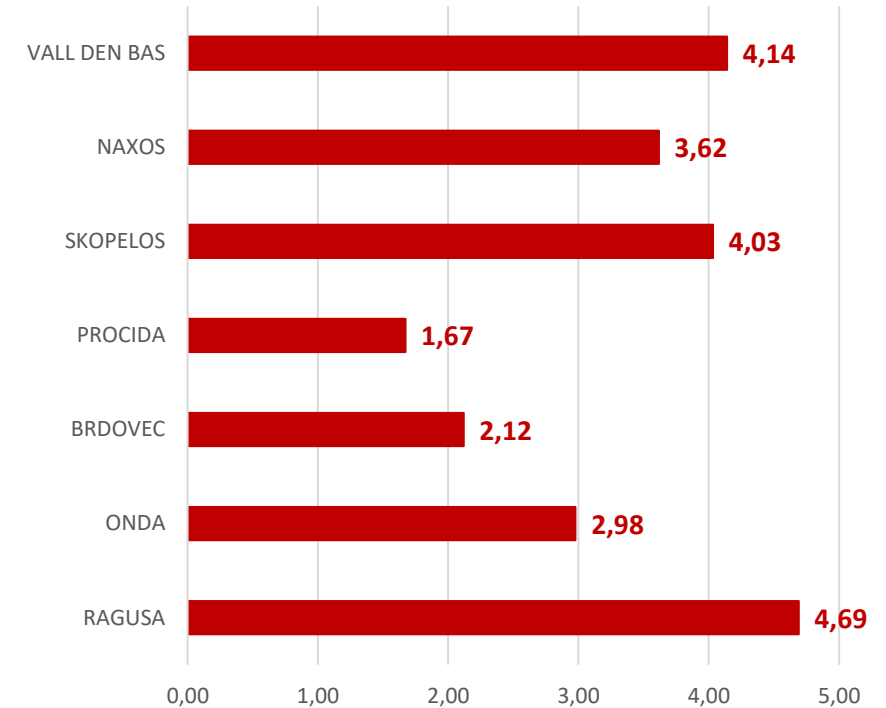
Largo plazo

Acciones más ambiciosas
Objetivos 2050

Consumo energético per capita
(MWh/hab año)



Emisiones per capita
(tn CO2eq /hab año)

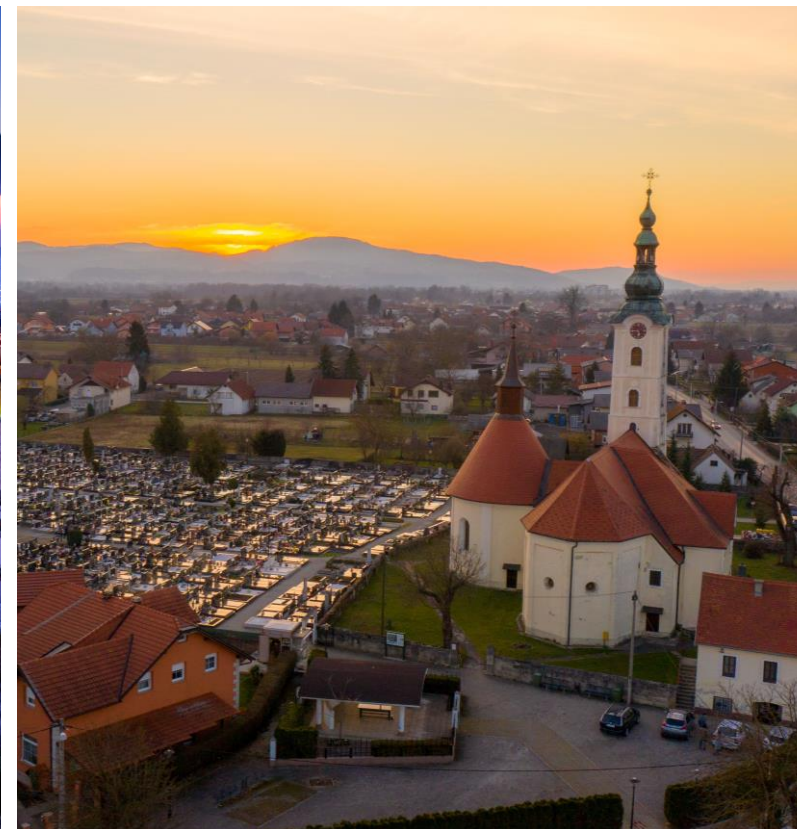




Onda, Spain



Procida, Italy



Brdovec, Croatia

Emission targets by scenarios	ONDA	PROCIDA	BRDOVEC
Scenario 1	Baseline Emission Inventory of CO2 (2020)	Set CO2 emission limits and measures to be taken to achieve the targets of the islands for 2030 and 2050.	Baseline Emission Inventory of CO2 (2009)
Scenario 2	ETU FC (2030) 40% emissions 2030	Balance between 50% RES potential and energy consumption of the Municipality.	ETU FC (2030) 40% emissions 2030
Scenario 3	ETU FC (2050) Neutrality targets	Balance between 100 % RES potential and energy consumption of the Municipality	ETU FC (2050) Neutrality targets
ETU toolbox to apply	LOCAL4GREEN / PRISMI / COMPOSE	PRISMI STORES PEGASUS LOCAL4GREEN	LOCAL4GREEN PRISMI

INTEGRACIÓN

PAESC / PAMUS / AGENDA 2030

- Consumo de energía de los siguientes sectores
- Edificios (edificios públicos, edificios comerciales y hogares)
- Sector del transporte (vehículos de propiedad municipal, transporte privado y transporte público)
- Alumbrado público

Skopelos

Western Aegean, Greece

Island

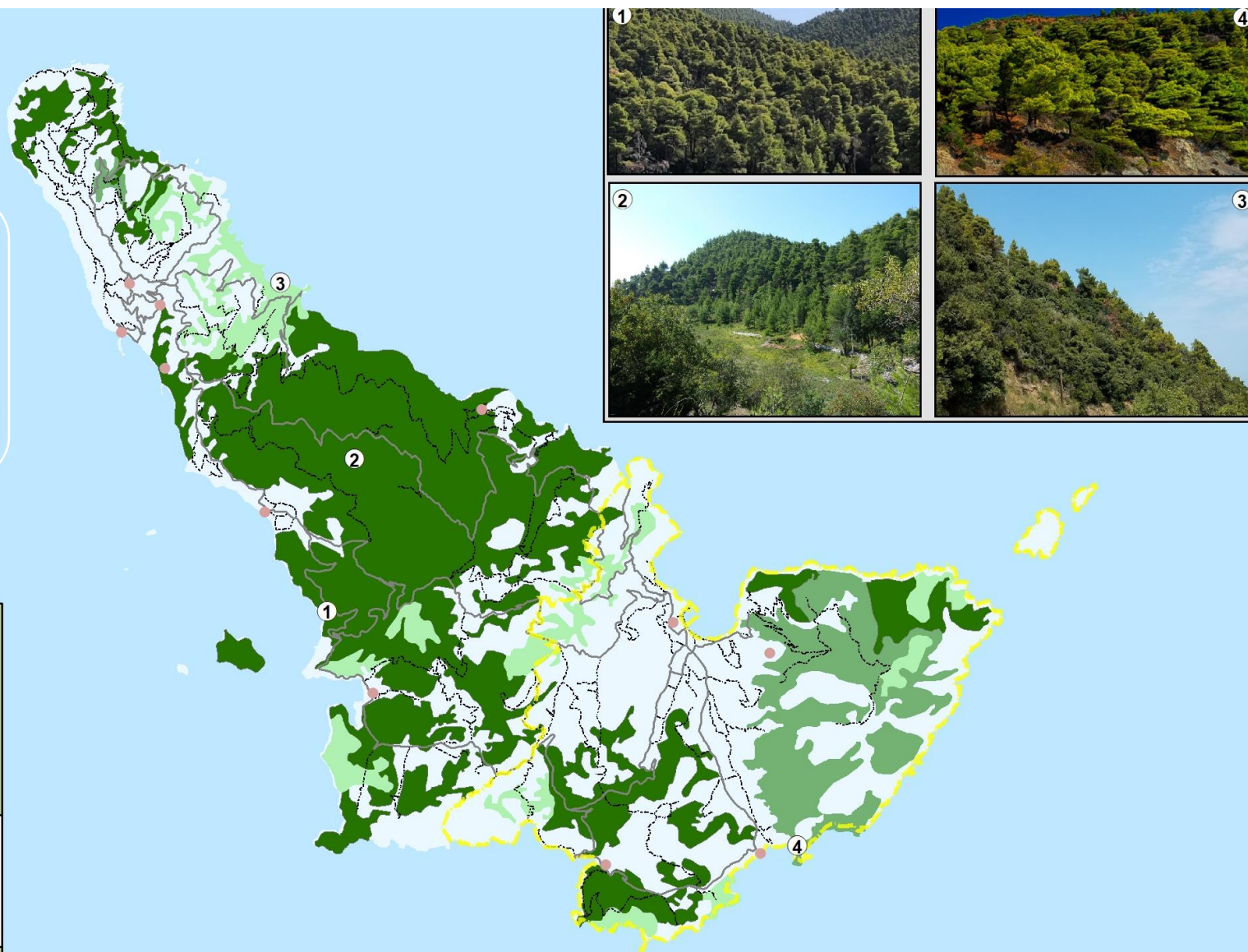


Legend

- Settlements
- Community road network
- Rural road network
- Natura Area (SAC-SPA)

Forest species

- Coniferous forests
- Mixed forest
- Transitional woodland/shrub



Skopelos Island – Forest Biomass

Scenario 1: Current plan

Forest biomass potential estimation
Expected energy production
Creation of business plan

Scenario 2: Short term

Reduction GHG emissions
Increase of local RES share
Export wood pellets to Sporades region

Scenario 3: Long term

Improving building's efficiency
Creation of renewable energy community
Export wood pellets to Mainland Greece

ETU Component	Scenario 1	Scenario 2	Scenario 3
Territorial component <i>Achieve a resilient and equilibrate land use</i>	Determination of biomass potential in forest territorials.	50% coverage of heat energy demand	100% coverage heat energy demand Balanced territorial integration of green energy.
Technological component <i>Obtain the maximum self-sufficiency</i>	Development of supply chain forest biomass for green energy production.	Reduction of GHG emissions due to the replacement of fossil fuels by local biomass fuel.	Improve energy efficiency in buildings (heat demand)
Social component <i>Improvement of livability and well-being</i>	Local community engagement	Heat coverage from biomass heating boilers Focused on energy poverty houses	REC dedicated to Forest Biomass production
Organizational component <i>Encouragement of green economy</i>	Development of business plan and identification of potential market.	Branding the biomass fuel as a high-value local product that will be exported to the rest of exporting in Sporades archipelago	Export to Sporades archipelago + Mainland Greece.



Naxos Island case: Technical schools

Improvement of Buildings Efficiency

Scenario 1 → PV installation

Scenario 2 → PV panels and storage system installation

Scenario 3 → PV panels, storage system and EV charger installation

Scenario 4 → PV panels, storage system, EV charger and heat pump installation

Objective:

Improvement of buildings efficiency, energy saving and energy self-sufficiency through sustainable interventions.



Results of StoRES Implementation : Technical School of Naxos



1st Scenario

PV size (kWp)	15
Battery size (kWh)	-
IRR (%)	7,98
NPV (€)	7.398
PBP (years)	10,32
SCR (%)	57,5
SSR (%)	33,91

- ➡ Financial impact
- Low capital cost, High Profit

- ➡ RES impact
- Low self-sufficiency
 - High self consumption rate
 - Low energy production



2nd Scenario

PV size (kWp)	20
Battery size (kWh)	10,8
IRR (%)	4,78
NPV (€)	2.071
PBP (years)	13,19
SCR (%)	55,44
SSR (%)	43,59

- ➡ Financial impact
- High capital cost, Low profit

- ➡ RES impact
- High self-sufficiency
 - High self consumption rate
 - High energy production



3rd Scenario

PV size (kWp)	20
Battery size (kWh)	10,8
IRR (%)	5,97
NPV (€)	5.394
PBP (years)	12,01
SCR (%)	59,31
SSR (%)	42,21

- ➡ Financial impact
- High capital cost, High profit

- ➡ RES impact
- High self-sufficiency
 - High self consumption rate
 - High energy production



4th Scenario

PV size (kWp)	20
Battery size (kWh)	10,8
IRR (%)	6,98
NPV (€)	8.340
PBP (years)	11,1
SCR (%)	61,54
SSR (%)	28,05

- ➡ Financial impact
- High capital cost, High profit

- ➡ RES impact
- Low self-sufficiency
 - High self consumption rate
 - High energy production

Results of StoRES Implementation : Primary school of Filoti



1st Scenario

PV size (kWp)	2,3
Battery size (kWh)	-
IRR (%)	10,75
NPV (€)	2.055
PBP (years)	8,52
SCR (%)	67,43
SSR (%)	34,11



The demand of the primary school is at such a low levels which the addition of a battery turns the business case unfeasible.



2nd Scenario

PV size (kWp)	2,3
Battery size (kWh)	0
IRR (%)	10,75
NPV (€)	2.055
PBP (years)	8,52
SCR (%)	67,43
SSR (%)	34,11



3rd Scenario

PV size (kWp)	5
Battery size (kWh)	3
IRR (%)	7,36
NPV (€)	2.440
PBP (years)	10,8
SCR (%)	64,34
SSR (%)	45,61



The increase of the demand due to EV charger and heat pump requires the addition of the storage system.



4th Scenario

PV size (kWp)	5
Battery size (kWh)	3
IRR (%)	8,12
NPV (€)	3.035
PBP (years)	8,12
SCR (%)	67,25
SSR (%)	24,88







The Ecosystemic Transition Unit (ETU)

A roadmap for islands, villages and towns across the
Mediterranean to join the energy transition

Gracias por vuestra atención!



REVOLVE



www.renewable-energies.interreg-med.eu
<https://etuinitiative.eu/>
contact@interregmedre.com





Together we'll create a resilient future.

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