

The Interreg Med Renewable Energy Project presents:



ETU Initiative

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Euro-Mediterranean Economists Association (EMEA)

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Project co-financed by the European
Regional Development Fund





ETU Initiative

ECOSYSTEMIC
TRANSITION UNIT

ETU



Ecologic Response
Territorial equity
Social Innovation
Green economy
Cooperation

Interreg
Mediterranean



Project co-financed by the European
Regional Development Fund



RENEWABLE
ENERGY



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.



Physical support
(Abiotic)

Organisms
(Biotic)

Processes
(Organisation)



Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Committment

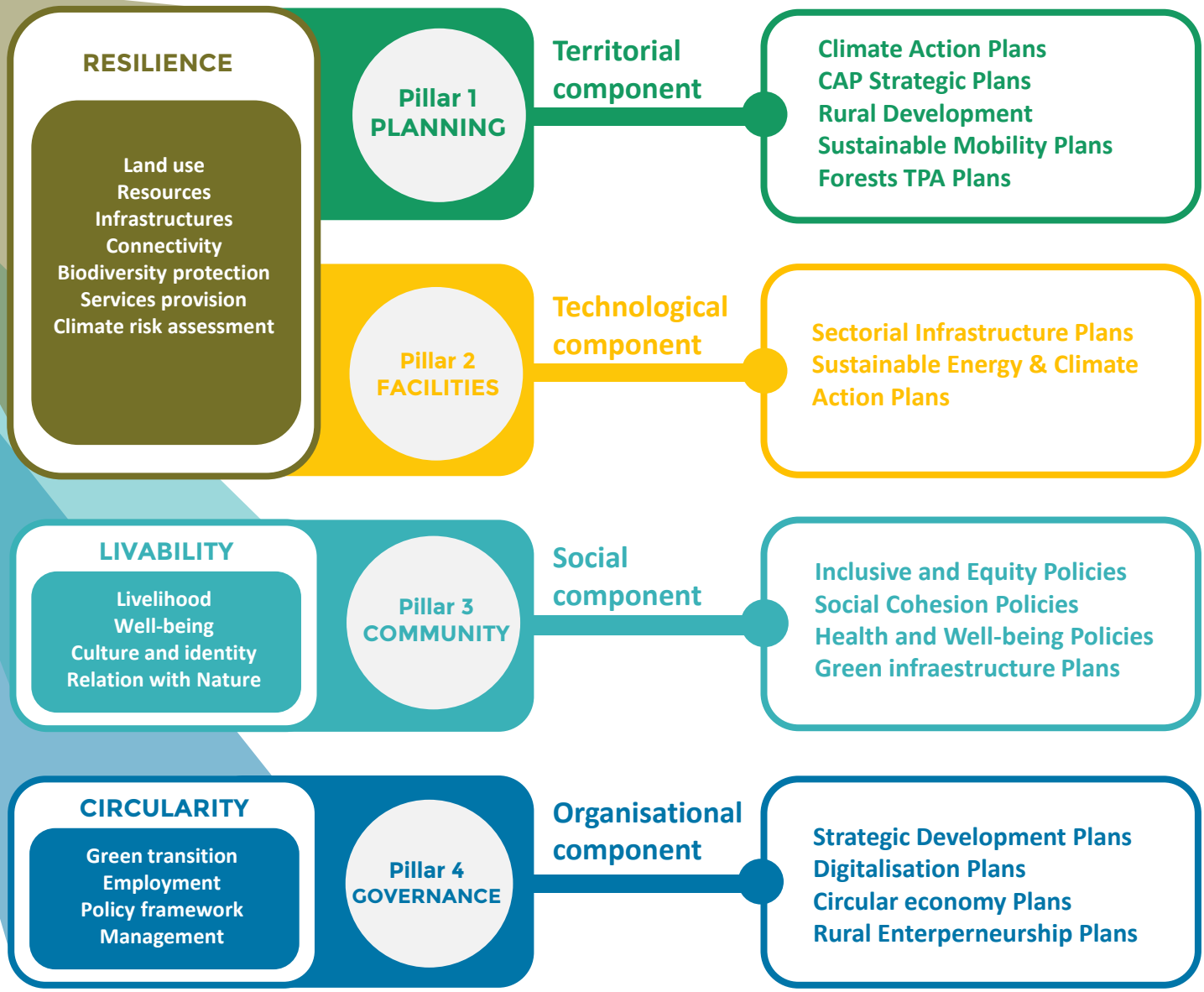
Physical support
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Ecological Response
Territorial equity
Social Innovation
Green economy
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Committment



PLANS & POLICIES



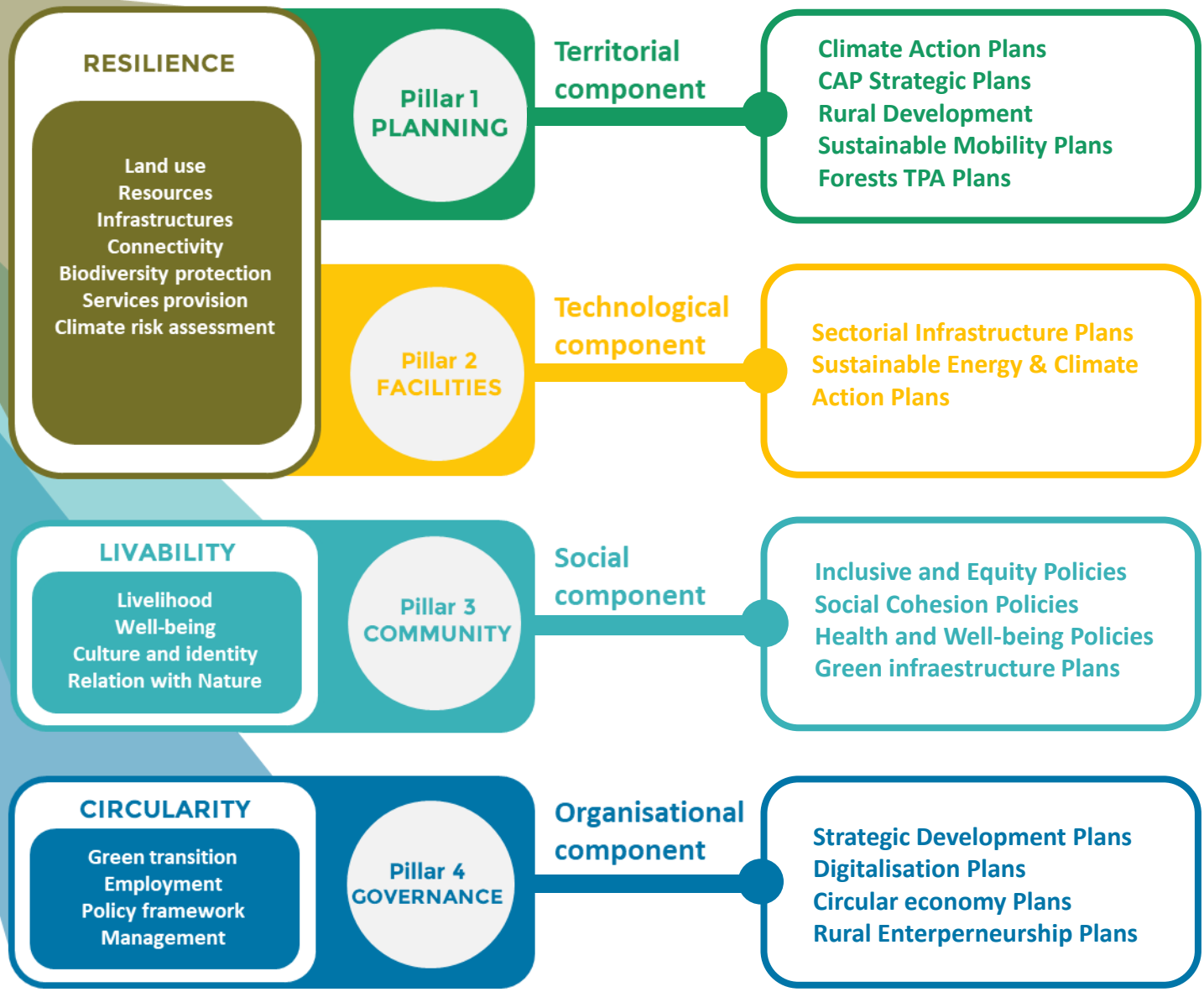
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Ecological Response
Territorial equity
Social Innovation
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Committment



PLANS & POLICIES



Territorial component

Planning physical support



The Ecosystemic Transition Unit (ETU) Model



Technological component

Planning facilities and infrastructure





Technological component

Planning facilities and
infrastructure



The background of the slide is a photograph of a large group of people sitting on a grassy hill at sunset. The sun is low on the horizon, creating a warm, golden glow. In the distance, a cityscape is visible through the trees. The people are mostly seen from behind, looking towards the horizon. Some are sitting on blankets, and some are standing. The overall atmosphere is peaceful and communal.

Social component

Ensuring liveable conditions and well-being

Social component

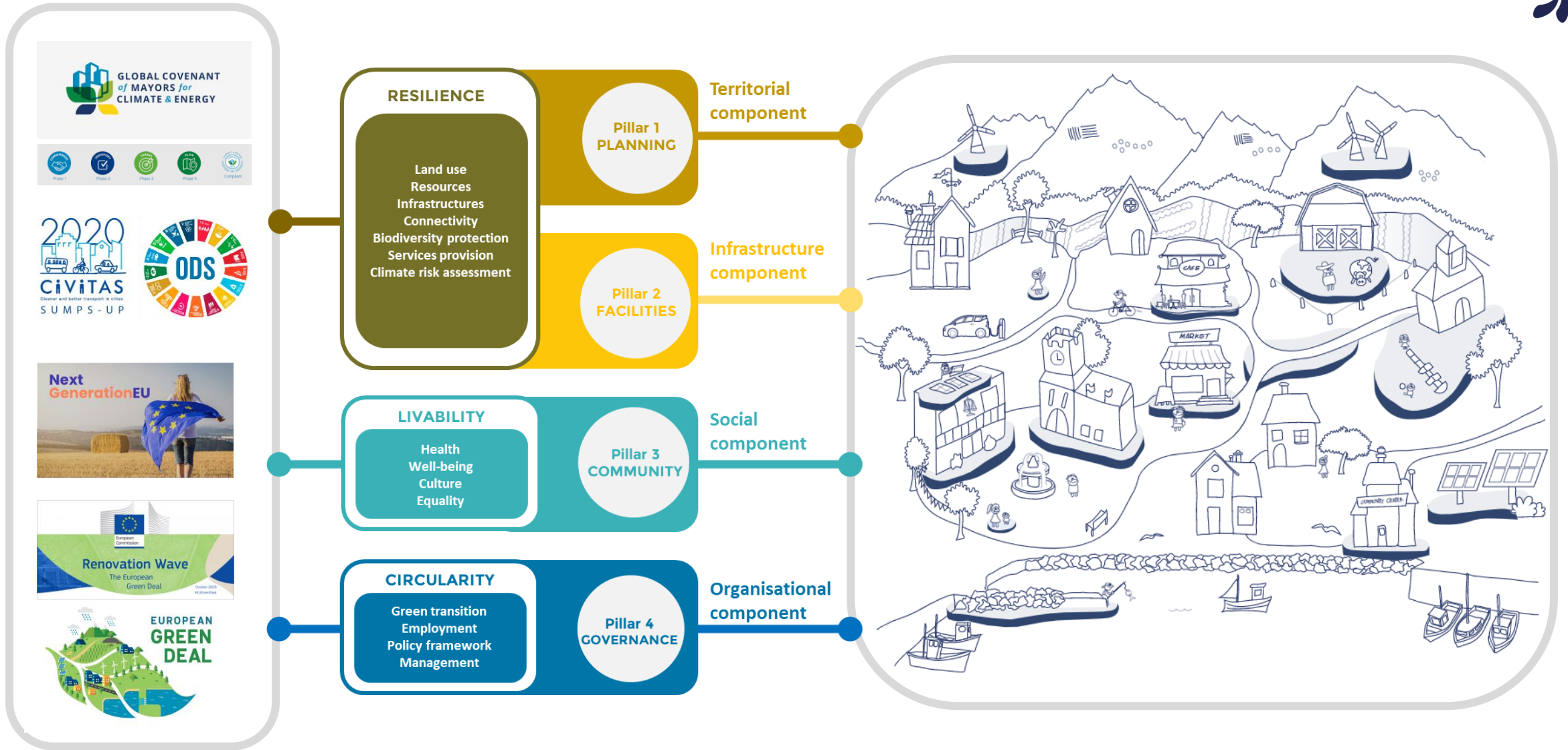
Ensuring access to
knowledge and culture

Organisational component

Creating the alliances for change



The Four Pillars of the ETU



Interreg Renewable Energy Community
**Transferring and
mainstreaming process**



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

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

Gaps and opportunities at local level



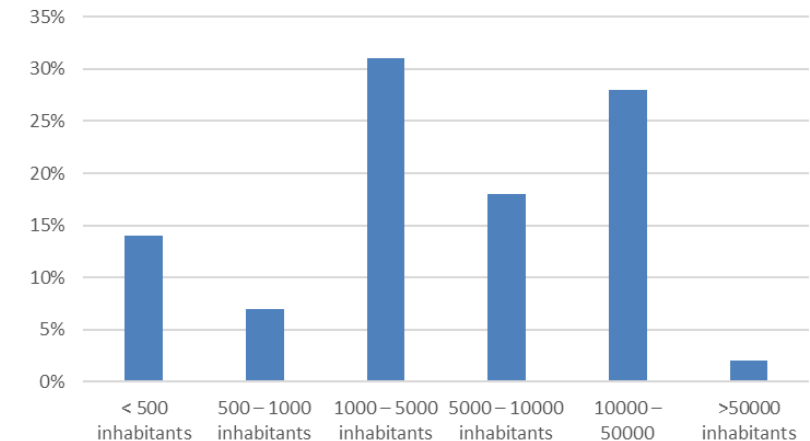
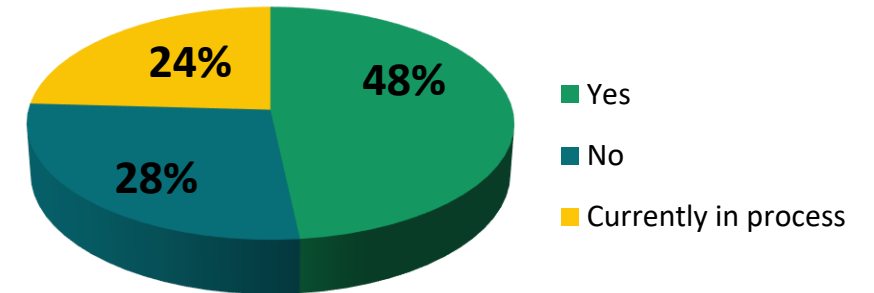
NEEDS:

- 1º Increase financial support
- 2º Attract private investment in RES
- 3º Fiscal incentives for RE

BARRIERS:

- 1º Bureaucratic hurdles
- 2º Cost of the interventions
- 3º Financial schemes unavailable

Municipalities developing their SEAP/SECAP
(survey 2020)



ETU Initiative Flagship Call



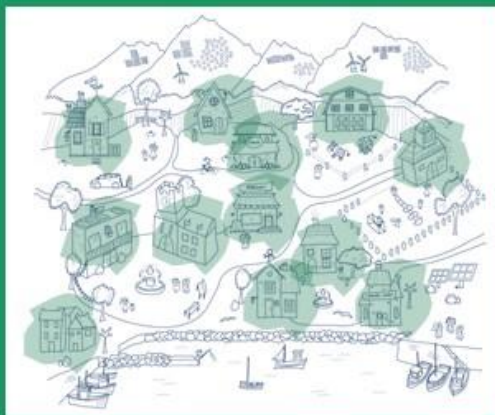
Mainstreaming in ongoing
SEAPs & SECAPs



ETU Initiative Flagship Call



Mainstreaming in ongoing
**Renewable Energy
Communities**



ETU Initiative Flagship Call



Mainstreaming in ongoing
Energy Transition Projects

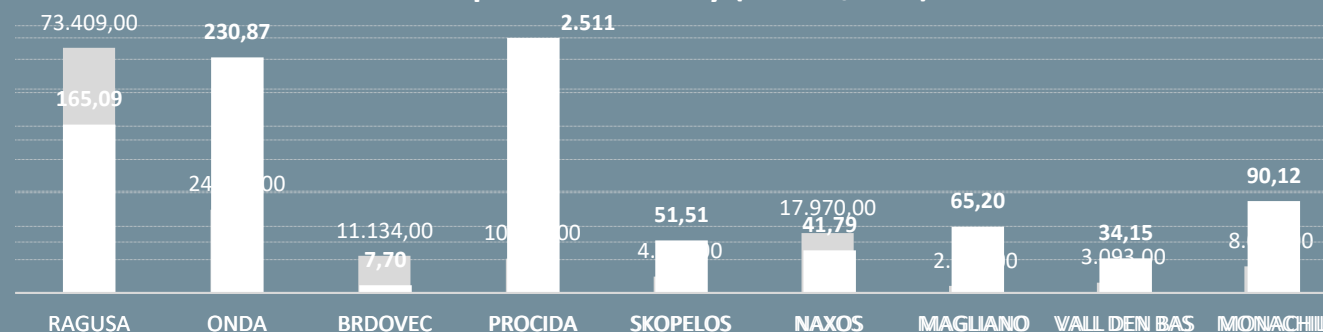


ETU Initiative Flagship Cases

1. Municipality of Onda, Valencia (SP)
2. Municipality of Vall d'En Bas, Catalonia (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)

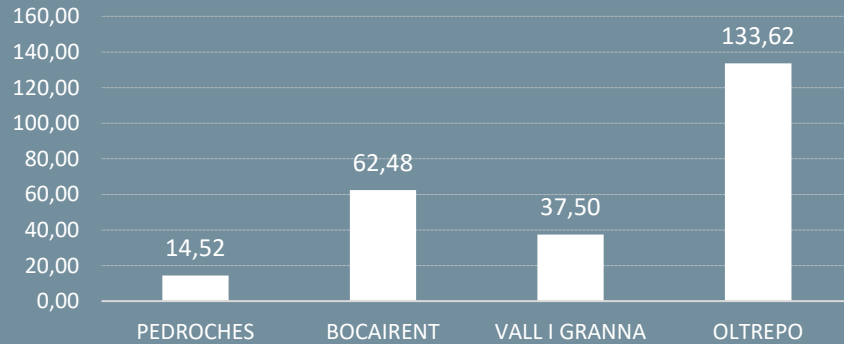


ETU Initiative Territorial Cases

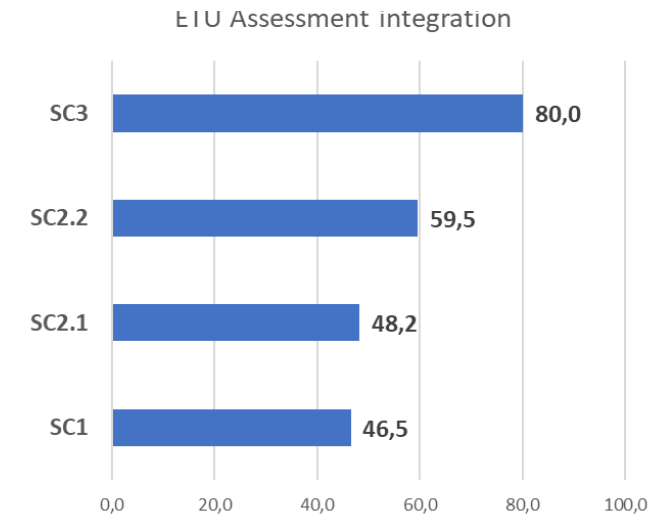
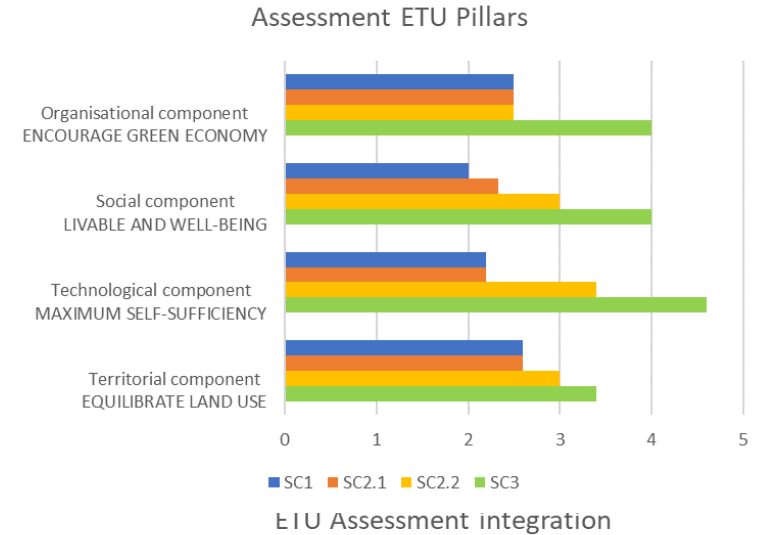
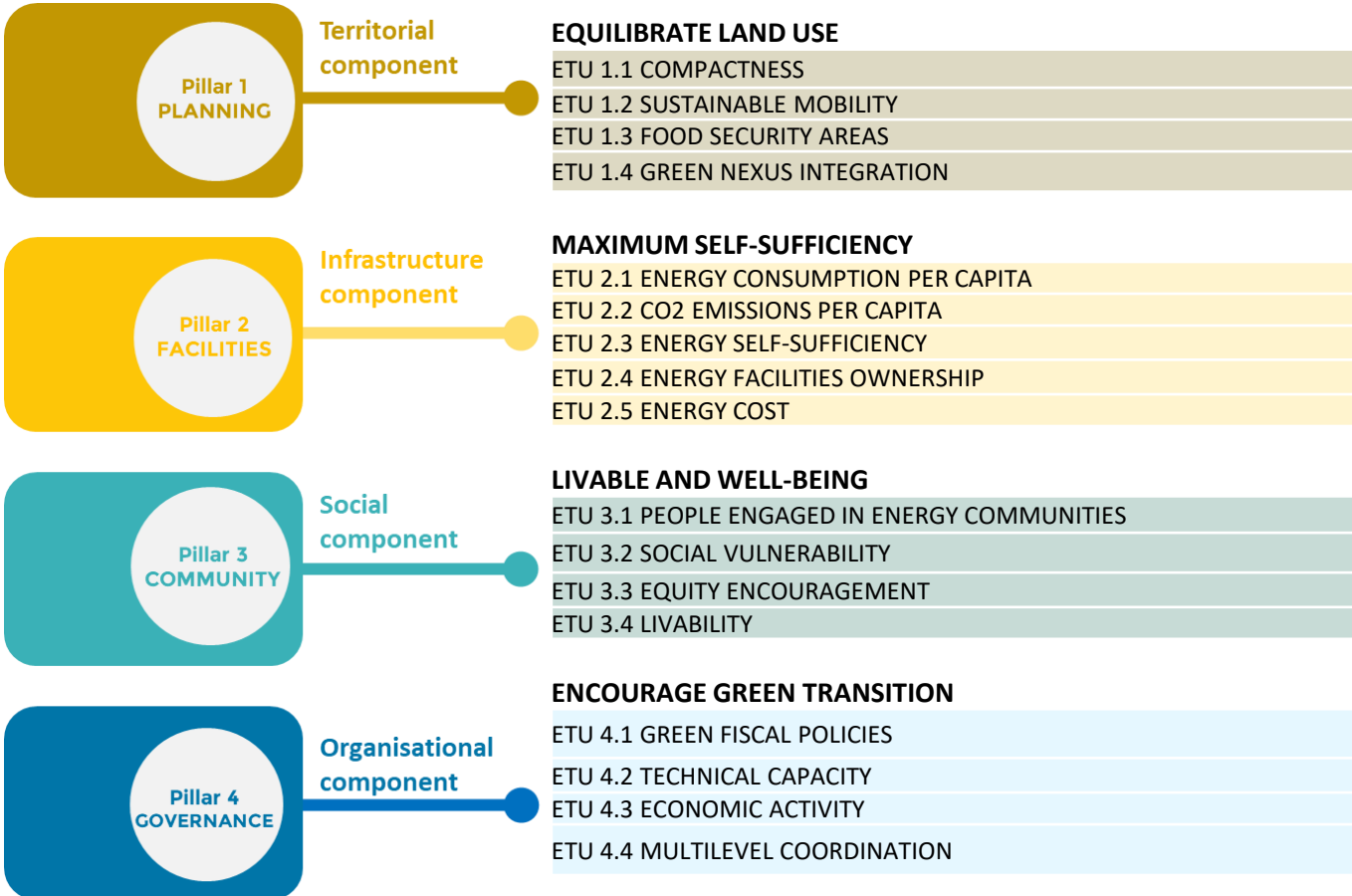
1. Oltrepò Mantovano Consortium, Lombardia (IT)
2. Unioni Montane Valli Maira e Grana, Piemonte (IT)
3. Mancomunidad Energética Los Pedroches Cordoba (SP)
4. Mancomunidad de Bocairent, Valencia (SP)
5. Ghezala (Tunisia)



Population density (Inhab./km²)



ETU Indicator System



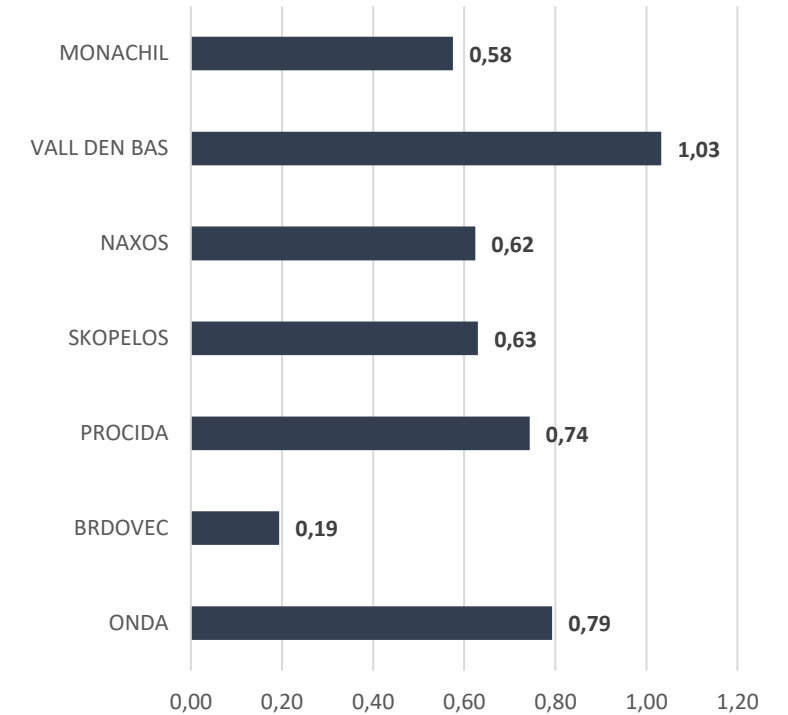
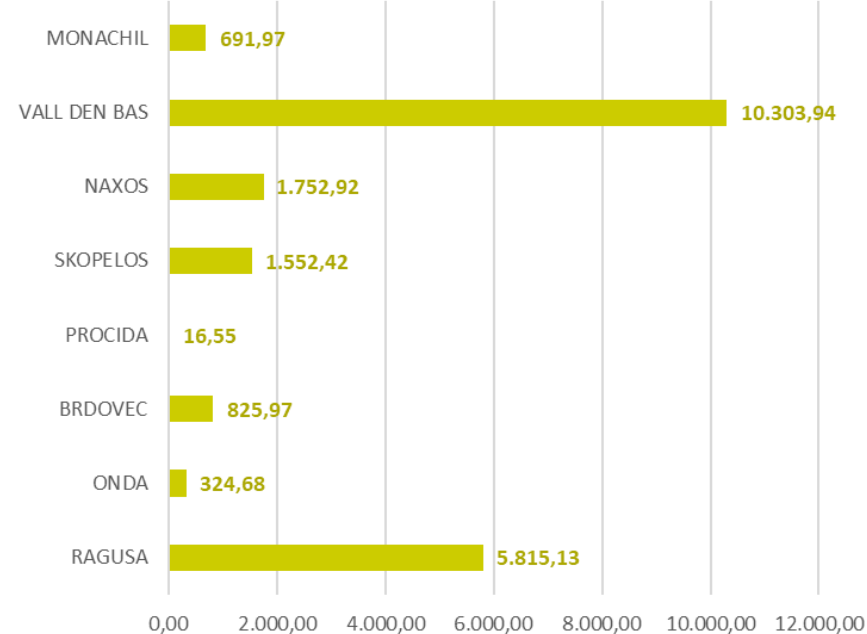
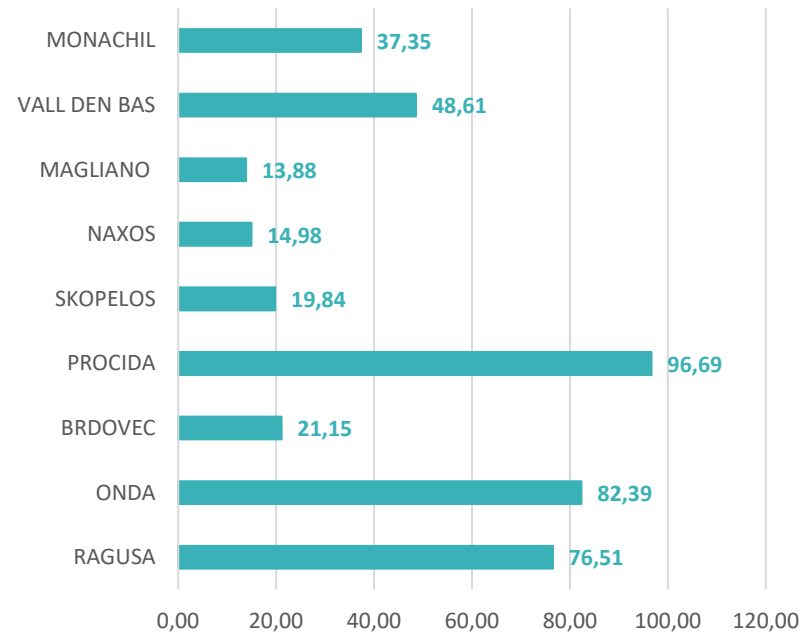
ETU Flagship Cases in numbers



Density (inhab/ha residential área)

Agriculture fields m2/inhabitant

Vehicles/inhabitant



Strategy and Scenarios

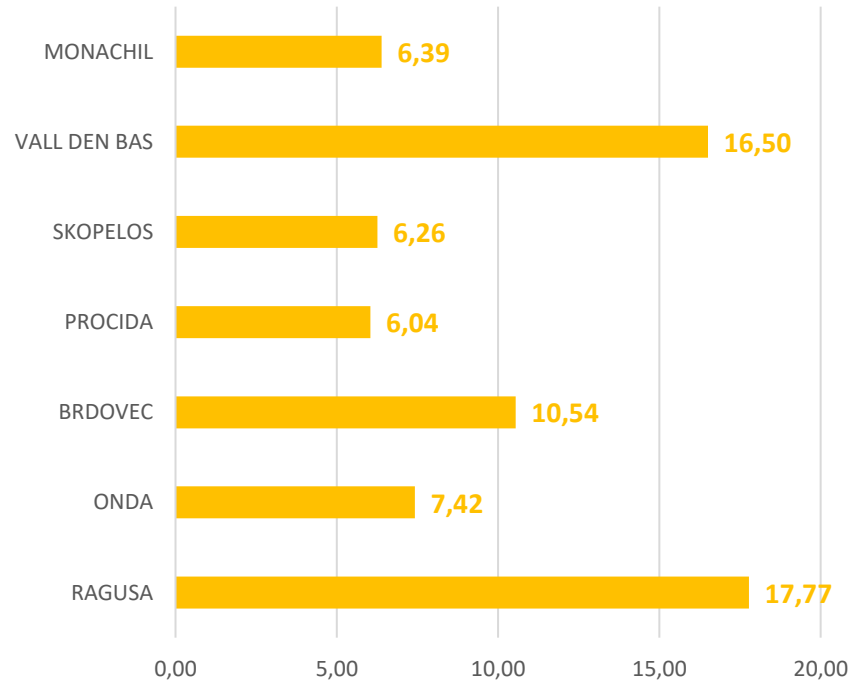


1 Short-term
Basic installations planned
Minimum emissions reductions

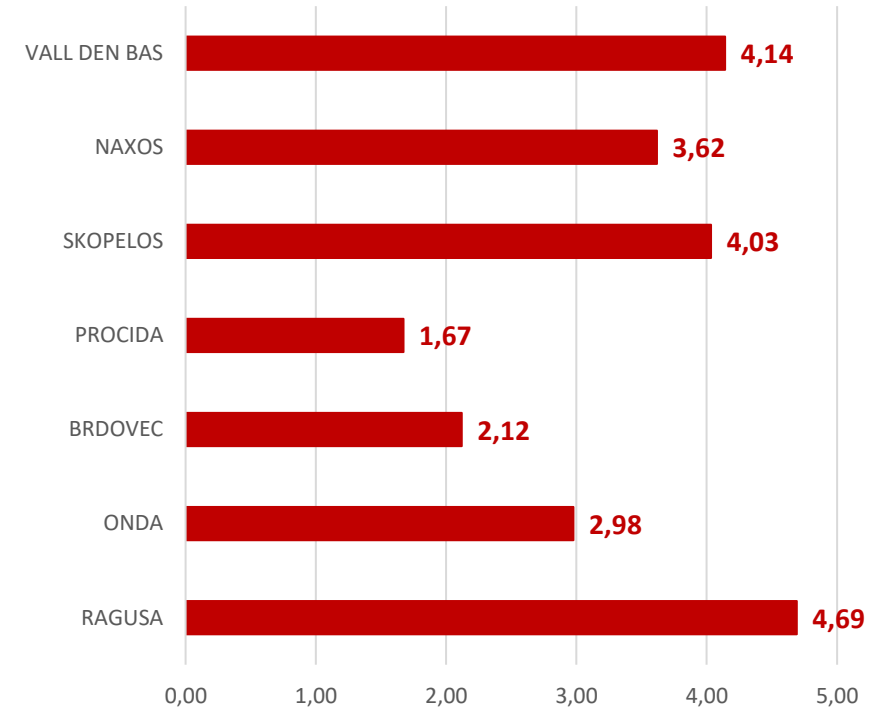
2 Mid-term
Actions to foreseen objectives by 2030

3 Long-term
Maximum actions
Actions to foreseen objectives by 2050

Energy consumption per capita
(MWh/inhab year)



Emissions per capita
(tn CO2eq /inhabitant year)





Ecological Response

- Territorial equity
- Social Innovation
- Green economy
- Cooperation
- Commitment

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

URBAN < 75.000 inhab

SECAP
Sustainable Energy and
Climate Action Plan

LOCAL ENTITY
ONDA City Council
Full technical support

Ecosystemic Transition Principles in Onda



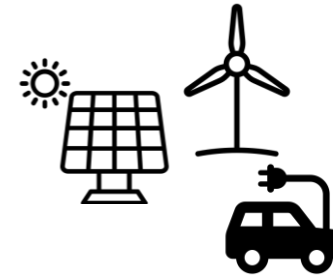
	Holistic response to climate change	Agenda 2030 in Onda SDGs. Goal 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. Climate Risk measures to Fire, Floods and Soil erosion. Limitation of CO2 emissions through SECAP
	Territorial equality	By 2030, increase inclusive and sustainable urbanization. Ratio of land consumption rate to population growth rate: 1.31 per cent (2006). Programme the actions to be taken in order to achieve the objectives set out in challenge 1, acting in the first instance on buildings and infrastructures owned by the municipality.
	Social innovation	Goal 11.1 Ensure access to adequate, safe and affordable housing and basic services for all people. Population living in households with identified housing deficiencies: 14.7% (2019) - Goal 8.6 Significantly reduce the proportion of young people who are not in employment, education and training education and training (12,13% Young people (aged 15-24) not in education, training or employment)
	Green economy	10% industrial business adopt a tax bonification by increasing RES in their industrial buildings. Goal 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including young people and people with disabilities (Unemployment rate: female 15.99 (2019); men: 12.45% (2019))
	Cooperation and commitment	Draw up by-laws and call for subsidies in order to establish a policy of demand and support and economic advantages that encourage promotion private- public efforts. Target 13.3 Improve education, awareness and human and institutional capacity for climate change mitigation, adaptation, mitigation and early warning. adaptation to climate change, mitigation and early warning Target 13.2 Incorporate climate change measures into national policies, strategies and plans

1 **Short-term**
Basic installations planned
Minimum emissions reductions

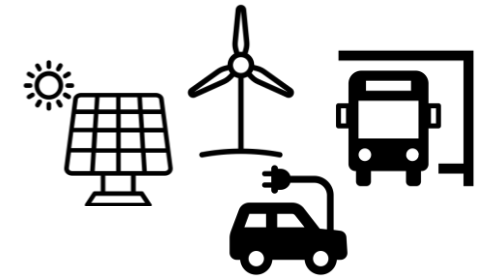
2 **Mid-term**
Actions to foreseen objectives by 2030

3 **Long-term**
Maximum actions
Actions to foreseen objectives by 2050

Baseline scenario 1:
During this scenario, the electricity consumption of all public buildings, as provided by Onda Municipality itself, is considered. No other installation/investment are analyzed.

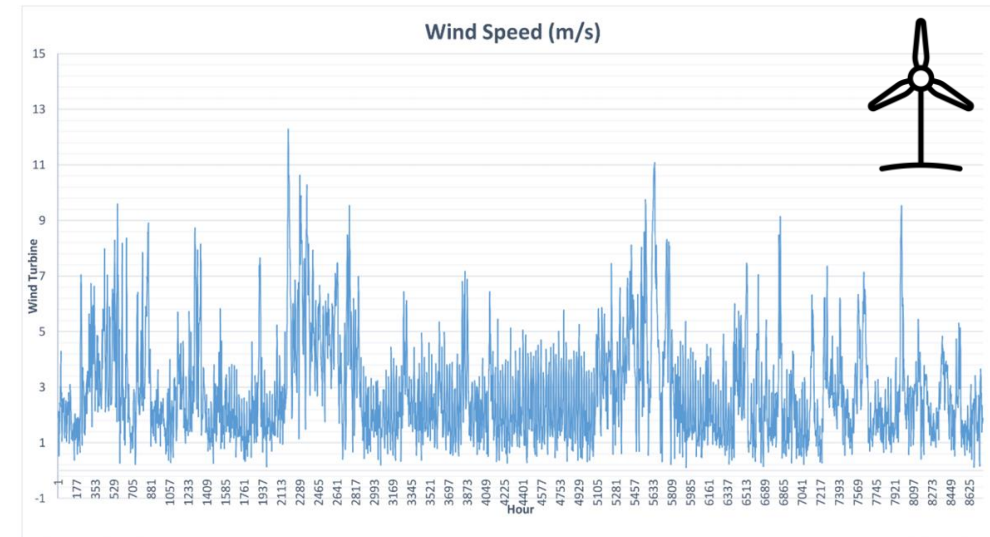
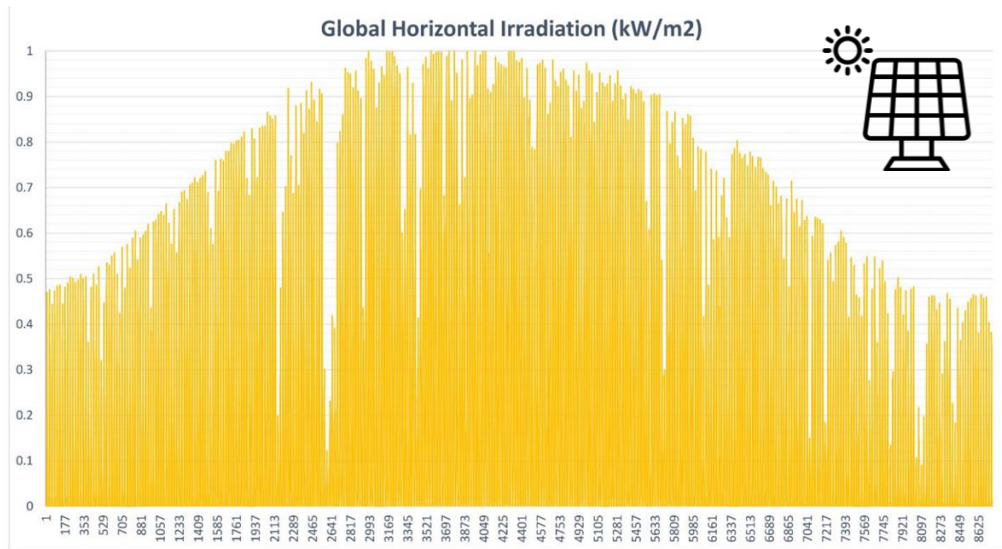
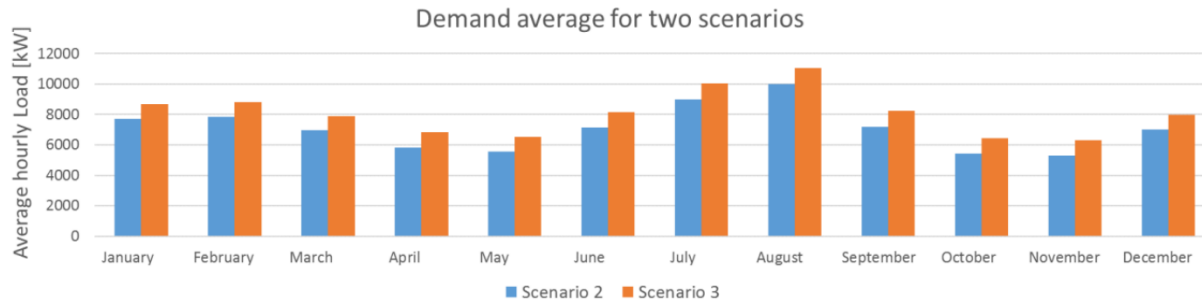


Scenario 2: Public buildings
During this scenario, 50% total emission reduction is aimed by installing appropriate size of PV and WT, as well as electrification of municipal fleet (i.e., cars and bikes).



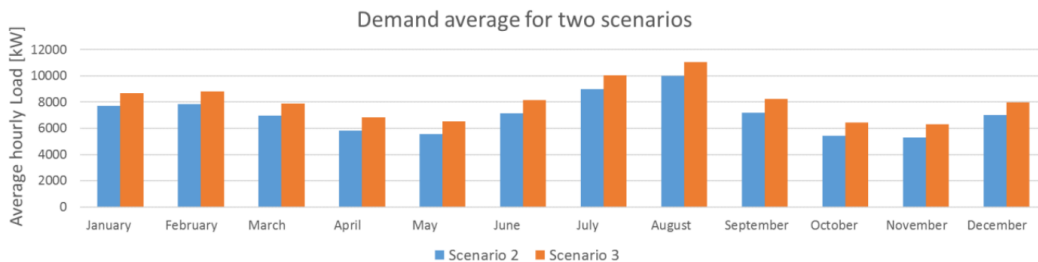
Scenario 3: Public buildings and transportation
During this scenario, 100% total emission reduction is aimed by installing appropriate size of PV and WT, as well as electrification of both municipal fleet and public transport fleet.

Results – RES Public Buildings PRISMI PLUS

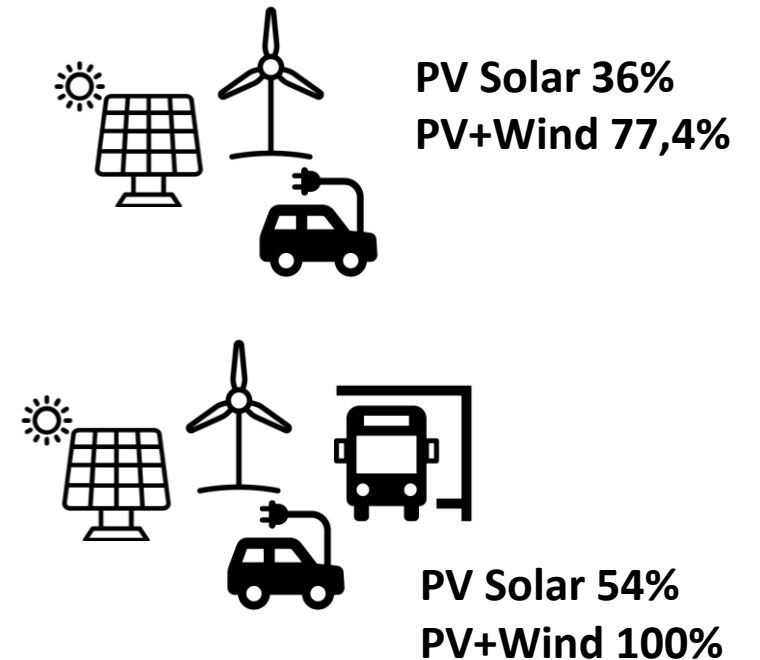


Results – RES Public Buildings PRISMI PLUS

Indicator/Data	Unit	Scenario 1	Scenario 2	Scenario 3
Total Primary Energy consumption	GWh/year	9,48	8,28	8,10
Electric energy consumption	GWh/year	5,45	5,63	5,72
local primary energy factor of electricity	-	1,74	1,47	1,42
Primary Energy Consumption for the transport sector	GWh/year	1,16	0,86	0,38
PV solar panels (max)	m2	0	11000	24000
PV solar panels (min)	m2	0	6600	14400
RE production	GWh/year	0	3,05	5,81
Emissions CO2eq	kton/year	0,336	0,185	0,026
Reduction	%		44,9	92,3
PV Production	GWh/year	0	2,03	4,43
Wind	GWh/year	0	1,02	1,38
% Self-sufficiency Public Buildings PV	%	0,0	36,1	77,4
% Self-sufficiency Public Buildings PV + Wind	%	0,0	54,2	101,6



Self-sufficiency electric consumption



Measures addressed to private buildings:

- Residential Sector (already integrated in SECAP)
- Industrial Sector in Onda

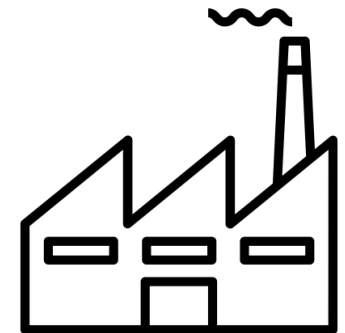
Economic activity tax (IAE):

- Reduction of the tax for the companies with relevant investment in RES (installation of PV in roofs, etc.).
- Reduction of the tax for the companies that provide sustainable mobility plans for the workers.

Real estate tax:

- Upgrade of the incentive not only for the householders with RES installations but also for the householders with 100% renewable energy supply.

338	Companies total	
34	Companies involved	
494	MWh	RES production
0,190	ton CO2 eq	CO2 eq emissions avoided





Ecological Response
Territorial equity
Social Innovation
Green economy
Cooperation
Commitment

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

RURAL < 5.000 inhab

**RENEWABLE ENERGY
COMMUNITY**

**LOCAL ENTITY
Vall d'en Bas
Municipality**



Ecosystemic Transition Principles in Vall d'en Bas

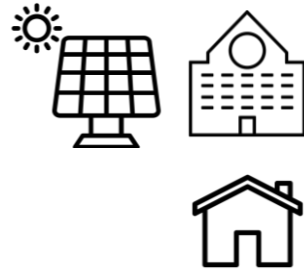


	<h2>Holistic response to climate change</h2>	<p>Vall d'en Bas has a high landscape value and vulnerability to climate change due a high touristic pressure. For this reason, is essential to create a basis for responding to the new problems that are arising as a result of the climate crisis, especially the reduction of CO2 emissions. The energy transition is key in this point and the creation of an energy community would be a good motivating example for our population, as it would be a good example for the future, a good promoter of renewable energies.</p>
	<h2>Territorial equality</h2>	<p>The project considers the territorial structure of the municipality. It consists of small villages separated from each other, which is an ideal situation for the creation of small energy communities based on photovoltaic solar energy. Due to the characteristics of the territory, it corresponds to the most usable renewable energy source. It is an agricultural valley with a high solar incidence and a high potential value of roofs. The REC can provide the possibility to make a strategic planning of the local renewable energy sources in Vall d'en Bas, as a starting point for resilient territorial planning.</p>
	<h2>Social innovation</h2>	<p>As a rural territory Vall d'en Bas face the challenge of revitalising the municipality and its social structure. The idea of creating an energy community comes from some demands received from the population, very involved in the energy transition that has already been promoted by the City Council, deeply committed to the environment. A crowdfunding campaign has been worked through the ETU Initiative to encourage and accelerate the implementation of renewable energy communities in the municipality, starting in one of the public schools.</p>
	<h2>Green economy</h2>	<p>As an agricultural and livestock farming area, one of the challenges Vall d'en Bas must face is economic revitalisation. In this sense, the municipality already have projects underway to promote the Km0 products and services of our municipality, as a means of adding value to the local products. The municipality counts with many farms, which could become suitable bases for the installation of solar photovoltaic panels. This would increase the added value of the products produced. Vall d'en Bas bets to revalue products and drive a change in the way they are produced towards a green economy.</p>
	<h2>Cooperation and commitment</h2>	<p>Draw up by-laws and call for subsidies in order to establish a policy of demand and support and economic advantages that encourage promotion private- public efforts. Vall d'en Bas counts with a strong commitment with Agenda 2030 and is in close coordination with Deputy of Girona developing several energy transition initiatives such as SECAP and Renewable Energy Communities promoted by local authorities.</p>

1

Short-term

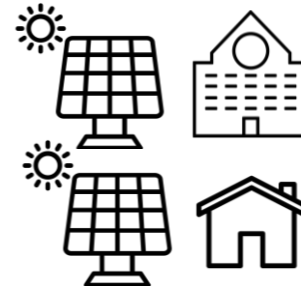
Public buildings in Olletes & St Privat



2

Mid-term

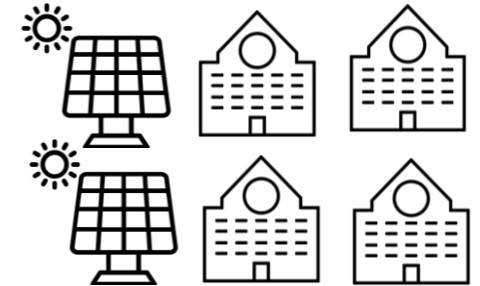
Public Buildings + Houses Olletes and St Privat



3

Long-term

PV in all Public Buildings in Vall d'en Bas



Scenario 1: Public Facilities Olletes & St Privat

Electricity consumption of public buildings and the private houses of Sant Privat and Les Olletes is considered. PV in rooftop surface of the public buildings

Scenario 2: Public Facilities and Houses Olletes i St Privat

The electricity consumption along with the rooftop surface of both the public buildings and the private houses of Sant Privat and Les Olletes is considered.

Scenario 3: Public buildings Vall d'en Bas

During this scenario, the electricity consumption of all public buildings along with their corresponding rooftop surface is considered.

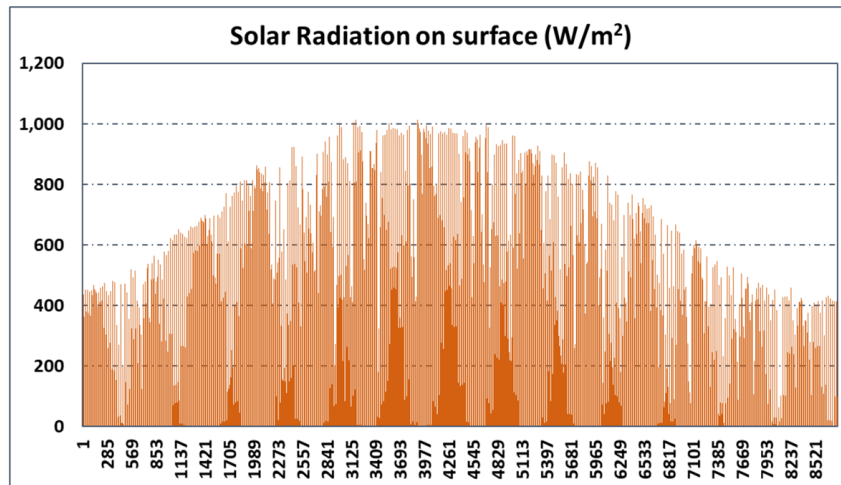


Figure 10 Solar Radiation on surface of La Vall d'en Bas local municipality

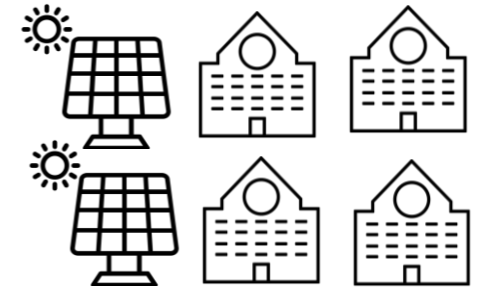


Figure 11 presents indicatively for scenario 3 the PV systems' hourly output power time-series.

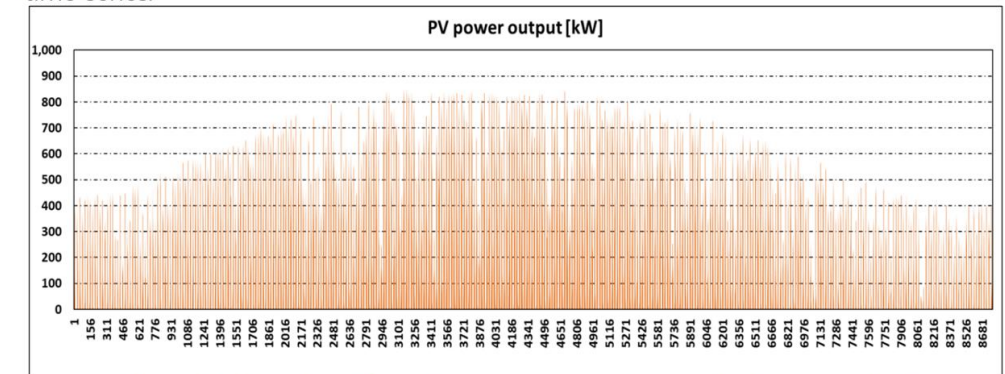


Figure 11 PV systems' hourly output power time-series for scenario 3

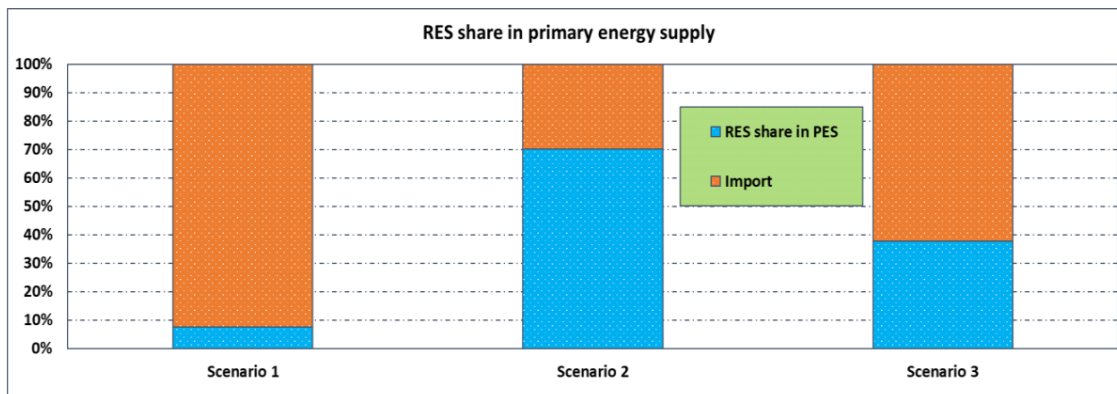
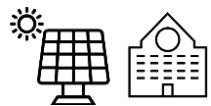


Figure 13 RES share in primary energy supply

Results – REC Scenarios - PRISMI PLUS

Energy facilities pillar Technology component		municipality current situation	REC COBAS	Public facilities municipality	assumptions & recommendations neutrality at municipal level
Indicator	Unit	SC1	SC2.1	SC2.2	SC3
Population	inhabitants	3.093	444	3093	3.093
Houses	number	1.458	145	1458	1.458
Public buildings	number	24	10	24	24
Energy consumption/inhabitant	MWh/inhab/year	16,50	16,50	16,50	11,20
Energy electricity consumption/inhabitant	MWh/inhab/year	10,61	1,2	6,40	5,30
Renewable energy production/inhabitant	MWh/inhab/year	0,01	14,26	0,53	5,30
tn CO2 EMISSIONS per capita	Tn/year/inhab	4,14	3,82	4,00	2,10
% Local RES generation	% electric consumption	0,05	12,81	8,23	100,00



SC1 Public Facilities
Olletes i St Privat
0,05 % electricity (RE)

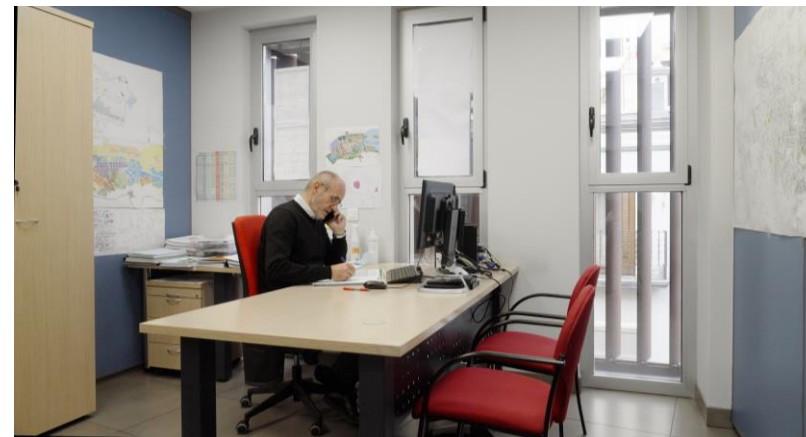


**SC2 Public facilities and
houses Olletes i St Privat**
12,8% electricity (RE)



SC3 Public Facilities
Vall d'en Bas
8,23 % electricity (RE)

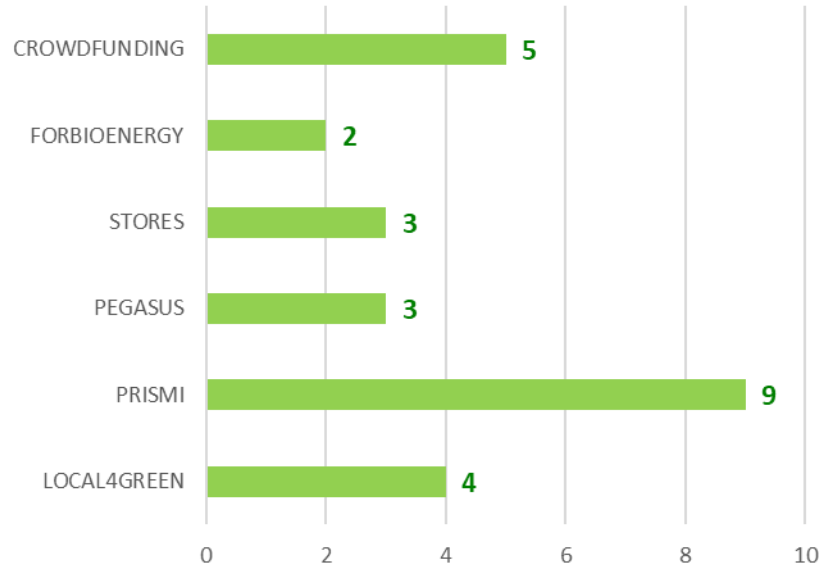




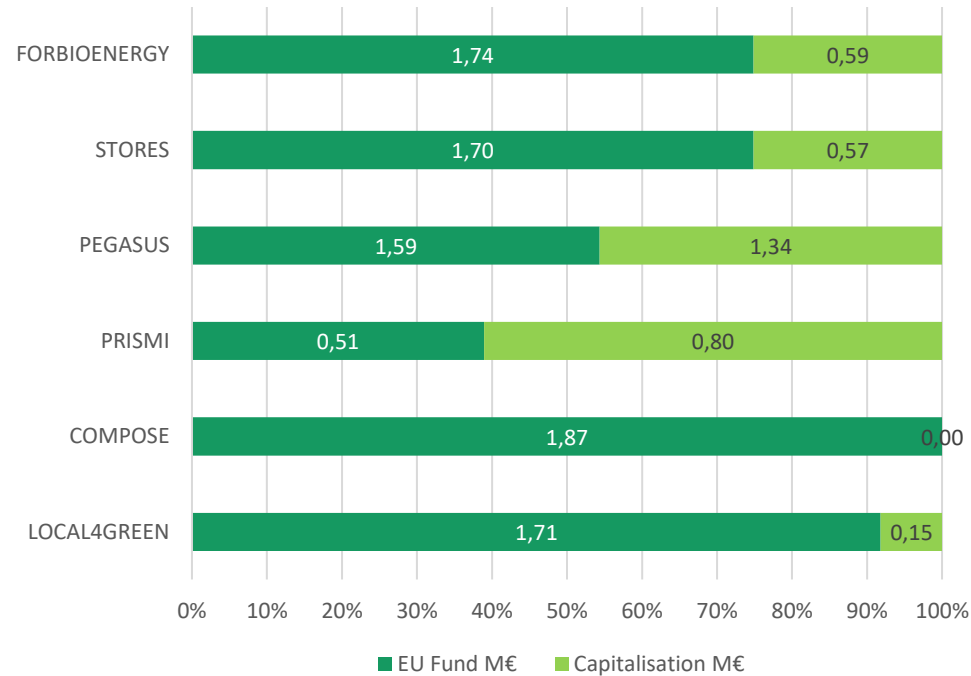
Transferring and Mainstreaming



Replicability



ETU Initiative Capitalisation impact



Interreg MED RE Community

13,3 M€

11,72 M€ EU Funds

1,60 M€ Co-funding

3,7 M€ eq Capitalised

(27,8 %)

ETU Initiative signatories

10,4 M€ eq Capitalised

(74,8 %)

Join the Initiative!

Knowledge transfer among EU projects, local entities, public authorities and experts.

1

Capacity Building

Accessing to ETU toolkit & training sessions

2

Strength networking

Identifying funding opportunities

3

Flag ETU Principles

Promoting your roadmap through an ecosystemic transition approach



The Ecosystemic Transition Unit (ETU)

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





Project co-financed by the European
Regional Development Fund

Thank you for your attention

cynthia.echave@euromed-economists.org



REVOLVE



www.renewable-energies.interreg-med.eu
<https://etuinitiative.eu/>





Together we'll create a resilient future.

www.renewable-energies.interreg-med.eu
<https://etuinitiative.eu/>

