Energy transition

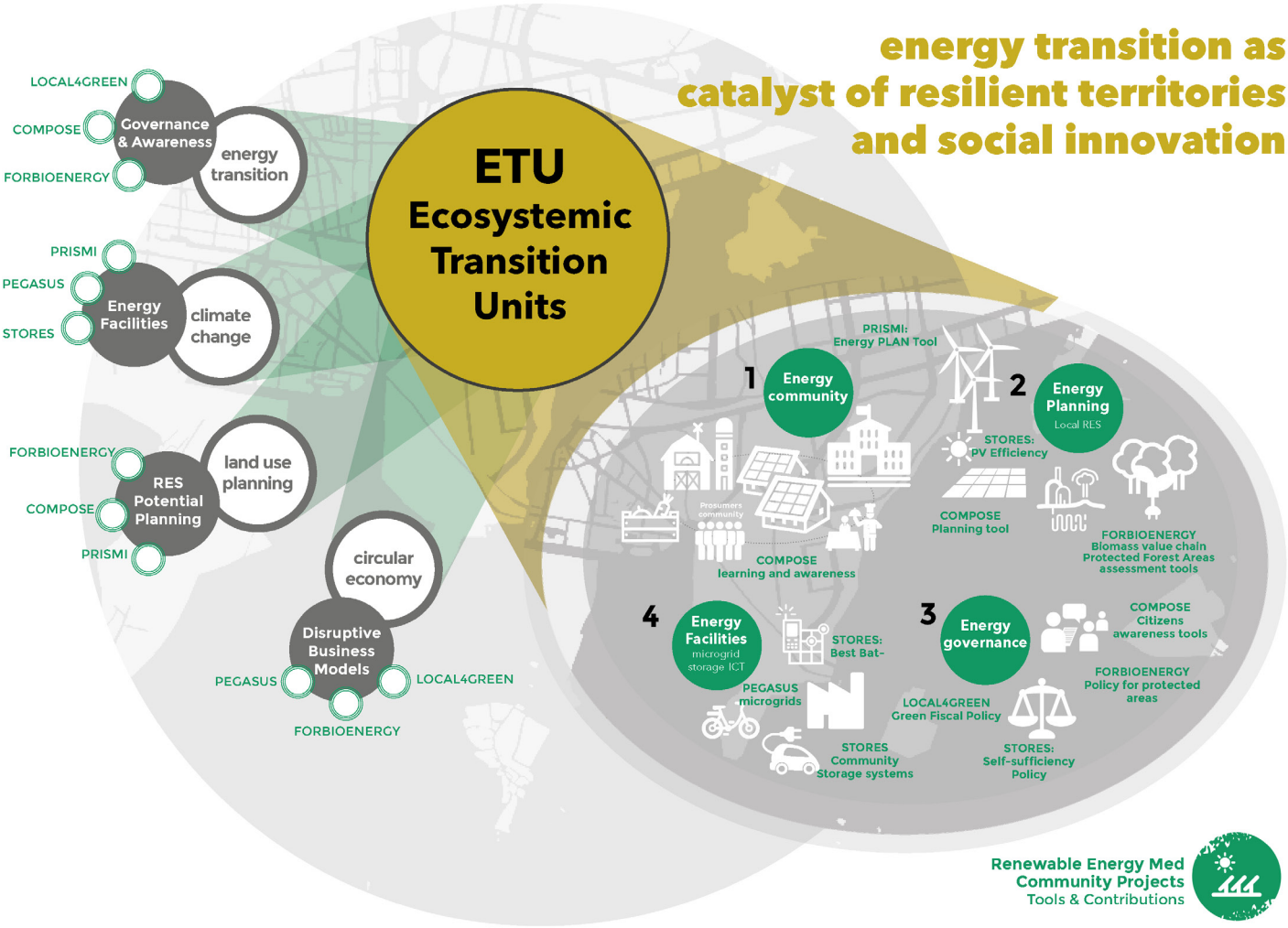
Ecosystemic Transition Unit

Renewable Energy Community developed a common approach based on the several contributions of the Modular Projects within the RES Community to energy transition, climate change adaptation & mitigation, land use planning and green economy.

The resulting merging approach is synthesized in a policy recommendation target to give an alternative roadmap to National regulatory framework to the application of the clean-energy package at Regional and Local level.

The Interreg MED Renewable Energy Community proposes the **Ecosystemic Transition Unit (ETU),** a multilevel governance model for a clean-energy transition for Rural and Islands areas in the Mediterranean based on social innovation.

The aim is to drive a capitalization strategy through ETU's implementation in Mediterranean Area in order to recognize and revitalize rural and islands areas as potential resilient territories.



Renewable Energy Med Community Projects
Tools & Contributions

Interreg Mediterranean
RENEWABLE ENERGY

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"Crafting the MED renewable energy ecosystem through innovative planning, management and governance tools, encouraging bottom-up strategies to achieve a low carbon economy"

The ETU should ensure a set of basic components that will allow them to obtain the application of green fiscal policies and attract investment in order to accelerate their energy self-sufficiency, job creation and social development. The components are: energy community; energy planning; energy governance and energy facilities.

ETU principles

1 Empowerment
Engouraging a fair energy transition from a bottom-up approach. Ensure capacity building as a key driven force of decision making process

2 Resilient Planning
Integrating renewable energy resources in territorial planning in order to ensure the land use required for RES potential production

3 Green revitalization
Multilevel coordination and key stakeholders engagement for a green local economy as an added value of territories

4 Clean-energy solutions
Optimization of energy infraestructure in order to attract investment & encourage innovative business models

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ETU Factsheet 1

Empowerment

Social component of ecosystemic transition

The Interreg MED Renewable Energy Community proposes the **Ecosystemic Transition Unit (ETU)**, a multilevel governance model for a clean-energy transition for Rural and Islands areas in the Mediterranean based on social innovation.

The **ETU Factsheets** present the contributions of the Modular Projects within the RES Community to trace the roadmap through four main ETU components:

1) Energy Communities - social component
2) Energy Planning - territorial component
3) Energy Governance - legal component
4) Energy Facilities - technological component

OVERALL SCOPE

Energy transition needs leadership, empowerment, awareness raising campaigns and training plans for communities and municipalities at different levels (e.g. local and regional) and across multiple sectors. Social innovation applied in energy transition should encourage active involvement of citizens in identifying the potential and gaps in terms of vulnerability to energy poverty and fair access to clean-energy solutions.

The desired goal is a widespread set of committed communities. Awareness raising, information and training campaigns will have to be implemented to inform citizens about possibilities to implement the energy transition in their territories. In addition to awareness, the social innovation aspect should be taken into consideration as a guideline; to identify people's needs and recognize their limitations when it comes to the strategies suggested.

STRATEGIC OBJECTIVES

Establish the framework for "renewable energy communities" in order to establish their size, composition and type of organization. The **ETU energy communities** aim to be managed and controlled by members which are located in proximity to the ETU.

POLICIES TO ADDRESS

- Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity

- Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources

As these Directives are implemented in the Member States, there is an opportunity to embed the ecosystemic approach and to seek to put in place the governance arrangements needed for ETUs.

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"Engouraging a fair energy transition from a bottom-up approach. Ensure capacity building as a key driven force of decision making process"

ETU
Energy Communities

Energy communities represent the social component of the ETU model, the aim is to establish organizational schemes that enables their creation and the tools for a sustainable maintenance on time. The organization of the community must allow for active participation of citizens in decision making, in order to guide the measures effectively according to their reality, and to drive the process with maximum acceptance at each step.

The ETU should propose participatory approaches for civil society and stakeholders, giving inhabitants the possibility to shape an ETU in agreement with their vision and necessities. The participatory approach of the ETUs can be similar to the urban planning participation process, where inhabitants have the opportunity to discuss and decide together the future development of their community.

ETU TOOLBOX

COMPOSE Sustainable Energy Planning Tool
PEGASUS Microgrids Business Model

INCIDENCE ON SDGs

1 No Poverty
3 Good health and well being
5 Gender Equality
7 Affordable Clean Energy
11 Sustainable cities and communities
12 Responsible consumption & production
13 Climate Action

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ETU Factsheet 2

Resilient planning

Territorial component of ecosystemic transition

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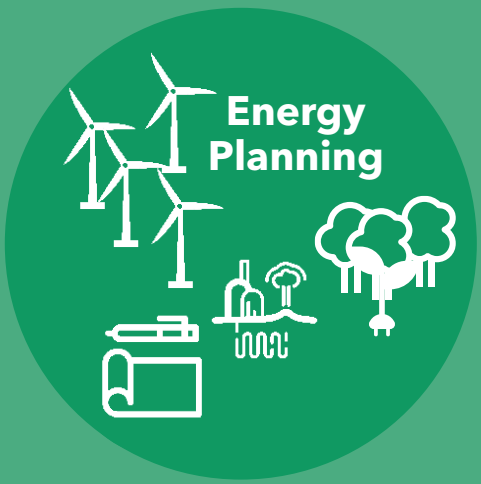

OVERALL SCOPE

Mediterranean territories need to encourage resilience strategies in order to improve capacity to adaptat to climate change. This is a matter of awareness and anticipation of hazards, through forward planning.

Territorial planning allows thinking within physical systems, but must also induce reductions of emissions to atmosphere through sustainable mobility, energy efficiency and also responsible economy and lifestyles. It is essential to establish an ecosystemic vision of urban planning and management, which allows for an initial assessment of the energy needs of a territory and of the territorial distribution, but that also integrates holistically with other resources considerations between territories.

Aspects with an impact on climate change, such as waste management, energy efficiency and mobility, should be taken into account in this initial assessment, in order to build an integrated project.

STRATEGIC OBJECTIVES

Establish the framework for estimation of the renewable energy potential sources in a territory. The **ETU energy planning** aims to set the criteria for land use configuration for local RES production and the projection of future scenarios according to energy efficiency strategies.

POLICIES TO ADDRESS

- Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources

- There are clear opportunities at municipal level to link the ETU to existing commitments under the Covenant of Majors for Climate and Energy and Sustainable Energy and Climate Action Plans (SECAPs).

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"Integrating renewable energy resources in territorial planning in order to ensure the land use required for RES potential production"

INCIDENCE ON SDGs

3 Good health and well being
7 Affordable Clean Energy
11 Sustainable cities and communities
12 Responsible consumption & production
13 Climate Action
15 Life of Land

ETU
Energy Planning

Energy Planning represents the territorial component of the ETU model. The aim is to give support to Sustainable Energy Climate and Energy Plans (SECAPs) at local level, adding the ETU toolbox to their development. SECAPs are planning tools, but do not function as a governance mechanism. In this way ETUs are introducing a new element in the development of the Covenant of Mayors at the local level. ETUs can act as a governance model to integrate energy plans with social, political, economical and territorial needs and establish the implementation of just/fair energy transition strategies. This enables a wider integrated approach covering many more sectors than SECAPs do currently, as well as enabling cooperation between urban and rural communities. There are multiple benefits for cities and municipalities from the development of local action plans for sustainable energy incorporating the ETU model:

- *Commitment to sustainable energy development based on the principles of environmental protection, energy efficiency and renewable energy sources;*
- *Setting the groundwork for sustainable development;*
- *Launching new financial mechanisms for the implementation of energy efficiency measures and the use of renewable energy sources;*
- *Ensuring long-term security in energy supply;*
- *Increasing the quality of life of citizens (increase air quality, provide comfort, reduce traffic congestion and accidents).*

ETU TOOLBOX
COMPOSE Sustainable Energy Planning Tool
PRISMI Wind calculator + Energy Plan Kit
FORBIOENERGY Biomass by forestry
StoRES Storage system dimensioning

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ETU Factsheet 3

Green revitalization

Governance component of ecosystemic transition

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3) Energy Governance - legal component
4) Energy Facilities - technological component

OVERALL SCOPE

Most of the challenges faced by rural and island areas in Mediterranean Regions require a boosted economic revitalization process that enhances these communities' role as productive territories, but also as social innovation opportunities for resilient management of resources and communities. For example, the expected impacts of climate change mean that it will be necessary to link policy aspects together; for example, agriculture, forestry and climate adaptation have to work hand in hand, ensuring future crops, the survival of forests, humid areas and helping to preserve water resources.

Energy transition is a good opportunity to catalyze this revitalization process, integrating the green economy as part of the actions to be achieved. Green added value territories should bring new job creation possibilities for rural lifestyles, establishing new synergies between the urban and rural worlds. Innovation should help to achieve this pathway. There are several sectors linked to agriculture and green manufacturing that can be integrated into the green revitalization.

STRATEGIC OBJECTIVES

Establish the legal framework for the ecosystemic transition of a territory, having energy as a starting point. The **ETU energy governance** aims to is to identify the strategic economic sectors that can be linked to the ecosystemic transition and set the organizational criteria to make possible the cross sectorial synergies.

POLICIES TO ADDRESS

- EU strategy on adaptation to climate change: https://bit.ly/2sp98WV

- Example approaches include Oil Free Zones: https://bit.ly/34nWkhz

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"Multilevel coordination and engagement for a green local economy as an added value of territories"

ETU
Energy Governance

The ETU should have a regulatory framework and provide a form of agreement between the parties; both between the various public parties involved (mainly municipalities), and between the public and private parties (Private Public Partnership). Such an agreement should be based on objectives and support should be provided in part based on the achievement of objectives in terms of energy efficiency and renewable energy production. The agreement should provide a general framework for the energy transition and should be long-term nature (ideally at least 6 years plus). Funding should be provided for the team that will animate the transition on behalf of the territory. The support should be regular and reliable. A certification or label could also be part of the overall framework.

Two kinds of coordination of ETUs are required:

- *Vertical coordination: Regions, municipalities and submunicipal level*
- *Horizontal, transversal coordination: the ETU will need technical assistance and expertise on different topics, in some cases external.*

It might be relevant to create a legal entity at the EU scale to govern the overall framework. If so, this entity should have clear objectives in terms of deployment of RES across Europe. On the EU level, it could be funded by subsidies, such as EIT funds, Horizon Europe funds, the Innovation Fund, ERDF, etc. At the local level, certain taxes could be redirected. Regions could reserve a part of their European funds for ETUs.

ETU TOOLBOX

LOCAL4GREEN Handbook for green fiscal policies
COMPOSE Sustainable Energy Planning Tool
FORBIOENERGY Biomass value chain

INCIDENCE ON SDGs

1 No poverty
2 No hunger
3 Good health and well being
5 Gender equality
7 Affordable Clean Energy
8 Decent work and economic growth
10 Reduced inequalities
11 Sustainable cities and communities
12 Responsible consumption & production
13 Climate Action
16 Peace, justice and strong institutions

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ETU Factsheet 4

Smart energy solutions

Technology component of ecosystemic transition

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3) Energy Governance - legal component
4) Energy Facilities - technological component

OVERALL SCOPE

European Commission DG Energy have noted that investment will need to grow from 2% of EU GDP invested in the energy system today to 2,8% to achieve a net-zero greenhouse gas emissions economy. This equates to up to €575 billion per year (or up to additional €290 billion per year compared to baseline). If delivered, this investment will be positive for growth and jobs, with GDP higher by up to 2% in 2050 and with important co-benefits for reducing energy imports and improvements in public health and other sectors.

Public funding alone will not be sufficient to deliver the transformation needed to meet these net zero targets. Private finance will have to account for the bulk of investment needs. The share of private investments is highly variable across different sub-sectors. The type of financing and public intervention will also depend on the risk profile and potential for revenues from targeted investments. It is necessary to encourage coordination of the potential investment from public and private funds in order to accelerate the effective energy transition.

Energy efficiency is a key factor for energy transition feasibility, not only by the fact of enhancing energy consumption but also for optimization of the renewable energy infrastructure required.

STRATEGIC OBJETIVES

Establish the financial framework for provision of the equipment and technology solutions required to make the energy transition operational. The **ETU Energy Facilities** aim to set the criteria for a tactical financing strategy based on the optimization of energy infrastructures provision, smart solutions and collaborative participation of private and public funds.

POLICIES TO ADDRESS

- Smart Finance for Smart Buildings: https://bit.ly/2OPszzO
- Energy Performance of Building Directive (and its associated financing plans): https://bit.ly/2XVavZd

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"Optimization of energy infraestructure in order to attract investment & encourage innovative business models"

ETU
Energy Facilities

Energy Facilities represent the technology component of the ETU model.The aim is to optimize energy efficiency and encourage a feasible energy transition in terms of access to smart technology and schemes for funding. The European Commission is designing an approach under which public-funded grants should target initiatives that do not assure sufficient financial return (such as the early stages of research and development), whereas revenue-generating market-based instruments such as preferential loans and loan guarantees should cover more financially viable projects. In cases of non-financially viable projects, grants or blending of grants with other sources of financing could prove useful, as long as they yield long-run added value for the EU.

On specific technologies the ETU model offers approaches from StoRES and PEGASUS projects. The StoRES project has sought to develop an optimal policy for the effective integration of photovoltaics (PV) and energy storage systems (ESS). Currently the MED countries do not have policies that favor the installation of storage alongside PV systems. PEGASUS project, brought together public and private bodies involved in the energy sector to try to design the business model for microgrids in the future power system. The project identified schemes that were technically feasible, but also a number of barriers to their implementation, including policy and regulation for self-consumption and energy tariff and pricing issues linked to financing and investment.

ETU TOOLBOX
COMPOSE Sustainable Energy Planning Tool
StoRES Storage system dimensioning
PEGASUS Business models for microgrids

INCIDENCE ON SDGs

3 Good health and well being
7 Affordable Clean Energy
8 Decent work and economic growth
9 Industry innovation and infraestructure
11 Sustainable cities and communities
12 Responsible consumption & production
13 Climate Action
17 Partnerships for the goals

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