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PASSAGE
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# ACTION PLAN

# Straits of Otranto and Corfu

Coordinated by Province of Lecce (Italy), Region of Ionian Islands & InnoPolis (Greece) and Regional Council of Vlora (Albania)

Provincia di Lecce

Regional Council of Vlora

REGION OF IONIAN ISLANDS

Innopolis Centre for Innovation and Culture

March 2018

Faro della Palascìa,
Lighthouse of Otranto

Port of Corfu



Old Fortress of Corfu

Pashaliman, Vlora

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# INTRODUCTION

This cross-border action plan has been jointly designed by Province of Lecce (Italy), Region of Ionian Islands and InnoPolis (Greece), and Regional Council of Vlora (Albania), partners of PASSAGE project, and many stakeholders involved on each side of the Straits of Otranto and Corfu.

PASSAGE project is aiming to develop a low-carbon transition at the scale of 6 European straits and 5 maritime border regions. The first phase of the project (April 2016-March 2018) was focused on the diagnosis and the identification of levers for action. The second phase of the project (April 2018-March 2020) will be dedicated to the implementation of this action plan.

This action plan is aiming to trigger a low-carbon transition of the straits of Otranto and Corfu, based on the evidence provided by the carbon emissions' study carried out by I Care & Consult in the framework of PASSAGE project. For the first time, this study has demonstrated the cross-border share of carbon emissions generated by the activities linked to the strait. Among the emissions considered in this study are the direct emissions, occurring within above-mentioned straits' boundaries, and the indirect emissions, occurring outside of the boundaries of the strait but directly linked to the activities of the straits.

**Project**: "Public Authorities Supporting low carbon Growth in European maritime border regions– PASSAGE"

**Partners:**

- Region of Ionian Islands
- Province of Lecce
- InnoPolis

**Other** partner organisations involved:

- Regional Council of Vlora

**Countries**: Greece – Italy - Albania

**NUTS2** region: EL62 - Ιόνια Νησιά (Ionia Nisia), ITF4-Puglia

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# Carbon emissions study results

| | STRAIT OF OTRANTO | STRAIT OF CORFU |
|---|---|---|
| The straits in a nutshell | The Strait of Otranto connects the Adriatic Sea with the Ionian Sea and separates Italy from Albania. Its width from Kepi I Gjuhes, Karaburun, Albania to Punta Palascìa, east of Salento is less than 72 kilometers (45 mi). The strait of Otranto has a very strategic position and for centuries has been a key to control all traffic flow from Mediterranean to Adriatic seas. | The Strait of Corfu is located between the Albanian shores and the Greek island of Corfu. It is at the junction between the Adriatic Sea to the north and the Ionian Sea to the south. |
| The straits specificities | ○ Major transit area<br>○ The EU has called several places on the Strait of Otranto "sites of Community interest" (SIC), for their environmental importance | ○ Recent development of the port of Igoumenitsa<br>○ Importance of the other small-scale ports<br>○ Potential for LNG, short sea shipping to be assessed |
| Main findings | ○ 12.7 MtCO2e were emitted within the Strait of Otranto's boundary in 2016.<br>○ The industries in Brindisi represent the main emitter of the strait, with 88% of the emissions.<br>○ The residential and commercial activities of the strait's regions represent a large part of the emissions.<br>○ The road transport linked to the goods and passengers passing by the strait's ports (Brindisi, Durres and Vlora) is also an important emitter of the strait. | ○ 358 ktCO2e were emitted within the Strait of Corfu's boundary in 2016.<br>○ The local maritime cruise represents the main emitter of the strait, with 60% of the emissions.<br>○ The road transport linked to the goods and passengers passing by the strait's ports (Corfu, Saranda and Igoumenitsa) is also an important emitter of the strait.<br>○ The residential and commercial activities of the regions represent a large part of the emissions of the strait. |

# Policy Context

The Action Plan aims to impact the European Territorial Cooperation programme **GREECE-ITALY 2014-2020**

According to this, "In terms of the thematic concentration, ERDF programmes must allocate a certain share of their available funds for three specific TOs. These are: (TO1), s(TO3) (TO4). At least 80 % of the ERDF funds must be concentrated on these three objectives, and at least 20 % must be for the purpose of climate mitigation. Acknowledging the mounting threats posed by climate change and its impacts to coastal zones and the numerous environmental challenges faced by marine and coastal ecosystems, as well as the increasing urbanisation and heavy traffic in the Programme Area, cross-border actions in this field will be supported across all three Priority Axes. Important environmental concerns are shared throughout the Area and can create the driving force to link and enhance climate change reaction capacities. Examples of cross-border actions range from stimulating savings/reductions of energy consumption in cross-border transport, developing adaptation strategies and action plans, disaster management systems etc. As a result, the Programme contributes approximately 20% of ERDF funds or almost 21 M€ to climate change."

Relevant **investment priorities** of the GREECE-ITALY Programme:

- «6f-Promoting innovative technologies to improve environmental protection and resource efficiency in the waste sector, water sector and with regard to soil, or to reduce air pollution»;
- « 7c - Developing and improving environmentally-friendly (including low noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility».

Relevant **indicators** of the GREECE-ITALY Programme (under 6F Investment Priority):

- Number of supported cross border cooperation structures and networks in the field of environmental technologies (output indicator)
- Level of capacity of regional and local authorities and public utilities operators to integrate environmental friendly processes and technologies in their operations with special attention to the coastal and maritime zones (result indicator)

## OTHER REGIONAL POLICY INSTRUMENTS



### *Regional Operational Programmes (ROP) of Ionian Islands*

The Programme aims to boost economic development and create job opportunities in the Ionian Islands. It contributes to achieving the Europe 2020 targets for smart, sustainable and inclusive growth, also in line with the smart specialisation strategy. It should create jobs and help SMEs to become more competitive and innovation-driven. EU funding will also contribute to meeting the requirements of the Union's acquis, in particular as regards waste water treatment and the increase of solid waste recycling and increasing energy efficiency.

The OP will contribute to promoting the following key priorities related to low-carbon economy:

- "Environmental protection and sustainable development" (ERDF – 39.3% of the EU allocation): increasing energy efficiency in public and private buildings.
- "Enhancement of transport infrastructures" (ERDF – 15.55% of the EU allocation): promoting sustainable transport and removing bottlenecks in key network infrastructures.

Among its expected impacts, regarding climate change, is the year reduction in $CO^2$ 234 tones equivalent.

***Regional Operational Programmes (ROP) of Puglia***

The programme, amounting to over €7 billion provided from the resources of the European Regional Development Fund and the European Social Fund (ERDF and ESF), aims to boost economic growth and enhance social investment in line with the Europe 2020 targets for smart, sustainable and inclusive growth.

The OP will contribute to promoting the following key priorities related to low-carbon economy:

- Shift towards a low-carbon economy promoting energy efficiency and renewable energy, smart grid and renewable energy use in public buildings and promoting strategies for sustainable multimodal urban mobility > €198 million (7.10% ERDF)
- Climate change adaptation, risk prevention and management > €163 million (5.86% ERDF)
- Preserve and protect the environment and promote resource efficiency (waste and water sectors), restore biodiversity and soil and promote ecosystem services, improve the urban environment, regenerate and decontaminate brownfield sites (including conversion areas), reduce air pollution and promote noise-reduction measures. Conserve, protect and promote natural and cultural heritage > € 571 million (20.48% ERDF)
- Promote sustainable transport connecting secondary and tertiary nodes to TEN-T infrastructure, including multimodal nodes, developing and improve environmentally-friendly low-carbon transport systems and high quality and interoperable railway system > € 231 million (8.29% ERDF)

Among its expected impacts, regarding climate change, have been included the following:

- reduce the GHG emissions from 38.546 to 33.535 (tonnes of CO 2 eq.);
- decrease of 12 000 000 kWh/year the annual primary energy consumption of public buildings.

***Other Programmes (regional, cross-border bilateral or multilateral)***

**ADRION Transnational Cooperation Programe**

**GREECE-ALBANIA Territorial Cooperation Programme**

**IPA CBC INTERREG Programme, ITALY–MONTENEGRO - ALBANIA**

**Regional Strategic Plan 2010-2020, Vlora Region**

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# Acknowledgment

The partners of PASSAGE project located on each side of the straits of Otranto and Corfu would like to thank all stakeholders who have participated to the project and contributed to the carbon emissions' study and the action plan:


## GREECE

- Managing Authority CBC GREECE-ITALY
- Ministry of Environment & Energy of Greece, Climate Change Dept.
- Municipality of Corfu
- Municipality of Paxos
- Port of Corfu
- Technical Chamber of Greece - Corfu branch
- Economic Chamber of Greece - Regional Dept. of Ionian Islands
- Green Fund of Greece
- Hellenic Shortsea Shipowners Association
- Zero Energy Buildings
- Hellenic Agricultural Organization DEMETER
- Electra Energy Cooperative
- Sifnos Island Energy Cooperative

## ITALY

- Region of Puglia
- Euro-Mediterranean Centre on Climate Change (CMCC)
- University of Salento
- City of Lecce
- Chamber of Commerce of Lecce

## ALBANIA

- AULEDA, Local Economic Development Agency, Vlora
- Regional Administration of Protected Areas in Vlora
- University of Vlora
- Port Authority of Vlora
- Port Authority of Saranda
- Port Authority of Himara

# ACTIONS

Considering all the above, the following actions have been identified[1]:

**ACTION 1**

Given that cross-border cooperation in climate mitigation and adaptation is necessary, it is high time to develop an energetic system coherent with the main local and socio-economic variables. A local Government system supporting CO2 reduction will be established. The actions to be implemented are the following:

**1.1 Assembly of Mayors will work to launch initiatives to reduce CO2**

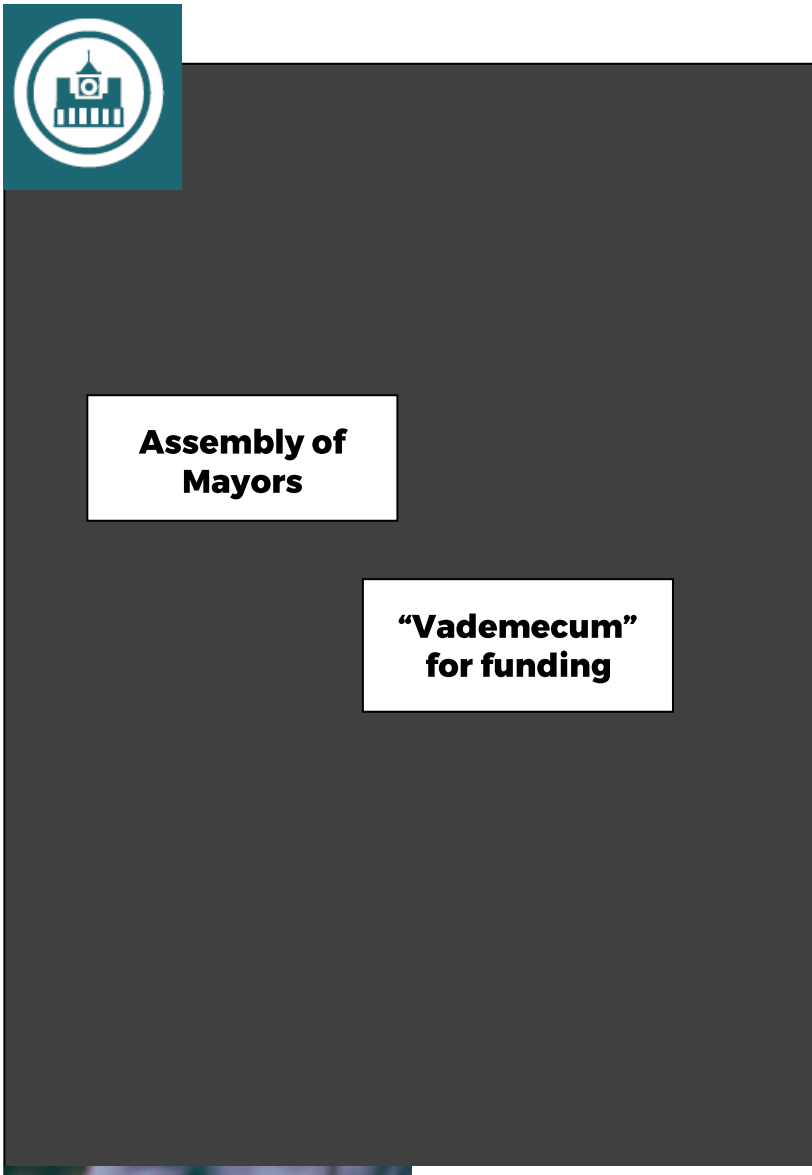
**1.2 Creation of a "Vademecum" for funding**

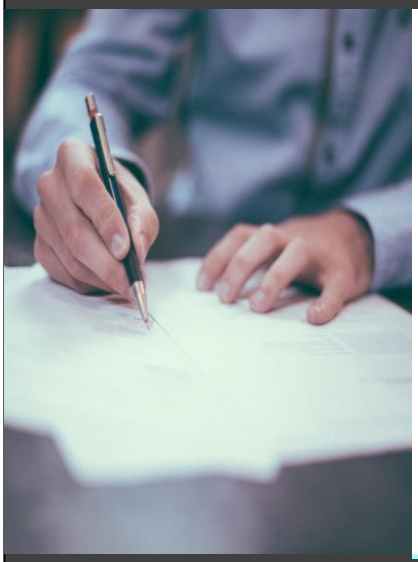
Budget:

The financing of the various structural or infrastructural interventions foreseen for the achievement of the result will be possible thanks to the ERDF Funds, foreseen in the measures of the POR Puglia

Time frame:

Action 1 will be developed during the Phase 2 of PASSAGE project, by March 2020.




[1] For more details about the actions (time plan, funding opportunities etc.) please see the Annex of this Action Plan.

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**Energy efficiency in port buildings**

**Energy efficiency in maritime vessels**

**ACTION 2**

Energy efficiency measures are meant to reduce the amount of energy consumed while maintaining or improving the quality of services provided in the buildings. The main benefit from measures to improve energy efficiency buildings is lower energy costs. On the other side, due to the growing emphasis on environmental protection as part of Corporate Social Responsibility, shipping firms have begun to recognize the importance of greening as they service the global community in international trade. The actions to be implemented are the following:

**2.1 Energy efficiency in Otranto & Corfu straits' Ports buildings**

1st step: The state of art of public buildings: Tool for Energy Efficiency in public buildings

2nd step: The importance of Energy audits

**2.2 Green shipping – energy efficiency in maritime vessels of Otranto & Corfu straits**

Promoting Sustainable shipping drivers, Research and Innovation

Budget:

Promotion of green shipping model: 2000 €

Research and Innovation, energy efficiency index for maritime transport vessels: 5000 €

Publication of scientific research studies in international scientific magazines: 1500 €

Preparation of Green Shipping Certificate Guide: 2000 €

Preparation of Policy recommendations: 3000 €

Time frame: Action 2 will be developed during the Phase 2 of PASSAGE project, by March 2020.

**ACTION 3**

Citizens and communities on both sides of the Straits of Otranto and Corfu need to produce clean and affordable energy. Energy Communities can promote social and solidarity-based economy and innovation in the energy sector, tackling energy poverty, promoting energy sustainability and innovation, production, storage, self-consumption, distribution and supply of energy as well as improving local acceptance of RES and energy efficiency in end-use at local and regional level. Within this scope, the local communities need to be sensitized and raise their awareness regarding energy efficiency, climate change and low carbon economy. The actions to be implemented are the following:

**3.1 Energy Communities reference website for Otranto & Corfu straits**

Knowledge reference website

**3.2 Awareness raising on energy communities**

Communication plan, Promotion via Social media campaigns & electronic communication, Roadshows targeting local key stakeholders

Budget:

This action will be funded through a combination of income sources that includes own resources & fund raising through new projects and other initiatives.

Time frame:

Action 3 will be developed during the Phase 2 of PASSAGE project, by March 2020.

**Reference website for Energy communities**

**Awareness raising**

**Approved by:**

**Region of Ionian Islands**

Date:

Signature:

**Province of Lecce**

Date:

Signature:



**InnoPolis**

Date:

Signature:

**Endorsed by:**

**Regional Council of Vlora**

Date:

Signature:

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# ANNEX

## ACTION 1: LOCAL GOVERNMENT SUPPORTING C02 REDUCTION
(driven by PROVINCE OF LECCE)

**The background**

The Assembly of Mayors will work to launch initiatives to reduce CO2 in the reference territories, for example:

- Increase energy saving and production in public buildings and structures;
- Guarantee the availability and the optimization of the renewable energy sources in the area;
- Energy efficiency in public lighting;
- Improve sustainable local mobility inside and among the municipalities through electric vehicles, van, car and bike sharing to satisfy at the same time different necessities such as everyday home-to-work trips and leisure time trips considering also the strong impact tourism has on this area;
- Reduce Co2 emissions through energy efficiency buildings and public services and organize the mobility as defined by Kyoto Protocol;
- Foster public-private partnership in the area covered by municipalities for CO2 reduction

**Actions**

- It will be organised a Regional round table, attended by the competent Regional offices interested in CO2 reduction (Energy, Environment, Programming);
- It will be organised a Local round table attended by local stakehoders, Mayors, etc.;
- Creation of a "Vademecum" in the productive sectors, containing a series of useful information for obtaining Regional funding and the rules of good conduct to be held in the various productive sectors, in order to reduce the impact of CO2 on the environment.

**Players involved**

- Region of Ionian Islands, Regional Council of Vlora and Apulia Region
- Local governments / municipalities
- Local stakeholders

**TIMEFRAME**

2018-2020

**COSTS** (if relevant)
Communication and dissemination costs
The financing of the various structural or infrastructural interventions foreseen for the achievement of the result will be possible thanks to the ERDF Funds, foreseen in the measures of the POR Puglia.

## ACTION 2a: ENERGY EFFICIENCY CERTIFICATE FOR THE PORT BUILDINGS
(driven by REGION OF IONIAN ISLANDS)

**Objective and background**

Energy efficiency ("EE") is at the corner stone of the European energy policy and one of the main targets of the Europe 2020 Strategy for smart, sustainable and inclusive growth adopted by the European Council in June 2010. This includes the objective for a 20% reduction in primary energy consumption by 2020. As energy related emissions account for almost 80% of total EU green house gas ("GHG") emissions, the efficient use of energy can make an important contribution to achieving a low-carbon economy and combating climate change.

Buildings account for approximately 40% off inal energy consumption. Investing in EE measures in buildings can yield substantial energy savings, while supporting economic growth, sustainable development and creating jobs. Greater use of energy-efficient appliances and technologies, combined with renewable energy, are cost effective ways of enhancing the security of energy supply.

Despite substantial progress towards meeting the 20% reduction target, are cent European Commission ("EC") study shows that, if no addition all measures are taken, the EU will meet only half of its target. In 2011, the European Commission adopted a new EE Plan, and a proposal for a new EE Directive is currently under negotiation. The latter will require public authorities to refurbish at least 3% of their building stock by floor area each year[2].

**Improving energy efficiency in buildings**

About one-third of global energy is consumed in residential, public, and commercial buildings (collectively referred to as buildings), where it is used for space heating, cooling, ventilating, lighting, cooking, water heating, refrigerating, and operating electric and mechanical devices. Global energy use in buildings is expected to grow as cities in developing countries continue to modernize and per capita income levels continue to increase.

Because of their high energy consumption, residential, public, and commercial buildings also offer unparalleled opportunities for energy savings. According to the International Energy Agency, buildings account for some 41% of global energy savings potential by 2035, compared with the industrial sector (24%) and the transport sector (21%)[3].

There are three primary ways in which energy efficiency can be improved in residential, public, and commercial buildings:

1. Through improved design and construction techniques that reduce heating, cooling,

[2] Guidance on Energy Efficiency in Public Buildings, European PPP Expertise Centre (EPEC)
[3]Improving Energy Efficiency in Buildings, Energy Efficient Cities, Mayoral Guidance Note#3, Knowledge series 019/14, Energy Sector Management Assistance Programme (ESMAP)

ventilating, and lighting loads.

2. Through building upgrades and the replacement of energy-using equipment.

3. By actively managing energy use.

Today is well known that infrastructure projects including smart renewable solutions enhance the economic development of an area creating new jobs and improving the standard of life for people. The target of a 20% share of renewable energy in the gross final energy consumption in 2020 will be achieved through the combination of measures for energy efficiency as well as for the enhanced penetration of RES technologies in electricity production, heat supply and transport. The contribution of RES to the national energy balance in 2008 was approximately 7.8% of gross final energy consumption and around 16.3%, of primary energy production. Global energy consumption is progressively rising and only radical changes in energy policy, energy consumption and energy distribution patterns will enable societies to face the so-called energy transition (from a solid-fuels to a clean-fuels based economy).

The 2014-2020 ROP of the Region of Ionian Islands (Priority Axis 2-) provides for the funding of Action 4c.1.1: "Utilization of RES and Energy Saving Systems in Public Buildings and Public Infrastructures & Networks", in order to save energy resources and reducing energy consumption in public infrastructure.

Energy savings can be achieved by energy shielding of building nutshell and by upgrading their equipment, combined with the installation of "smart systems" to reduce energy consumption and use of mixed-scale RES systems.



When designing energy upgrading actions in public buildings, etc. infrastructure, criteria should be set for energy consumption and building characteristics (eg building use, operational profile, system age, total area, energy efficiency class etc.) in order to give priority to buildings with high energy consumption and whose upgrading results in greater energy savings (based on program indicators).

On 2010, Greece with PD72/2010 and D5825/2010 created the Energy Efficiency Regulation of Buildings.

The energy efficiency of a building is the extent to which the energy consumption per square meter of floor area of the building, measures up to established energy consumption benchmarks for that particular type of building under defined climatic conditions.

Benchmarks are applied mainly to:

- heating,
- cooling,
- air-conditioning,
- ventilation,
- lighting,
- office or other electrical equipment, and
- Electricity consumption for external lighting.

The main benefit from measures to improve energy efficiency buildings is lower energy costs. Energy efficiency measures are meant to reduce the amount of energy consumed while maintaining or

improving the quality of services provided in the building.

Among the benefits likely to arise from energy efficiency investments in buildings are:

- Reduced energy use for space heating and/or cooling and water heating;
- Reduced electricity use for lighting, office machinery and domestic type appliances;
- Lower maintenance requirements;
- Improved comfort;
- Enhanced property value

Taking under consideration that there is no similar legal framework on Italian and Albanian legislation we are going to use the Greek one as a common methodology approach to measure the energy consumption of port buildings in Vlora, Corfu and Brindisi. The result will help us on unification of data collected.

The study and the proposal on installation of green energy technologies will contribute to propose measures for the energy upgrade of the buildings.

**1. Action (please list and describe the actions to be implemented)**

- **Energy efficiency certificate & measures for the port buildings in Vlora, Corfu, Brindisi**

**1.1 The state of art of public buildings: the importance of Energy audits**

How is It possible to detect the “energy state of art” of a building? The tool/procedure through which we can get a “picture” of the building describing its gaps ,problems, strengths and weaknesses is known as energy audit.

Energy audit of a building is a systematic procedure which aims to evaluate the building’s existing energy consumption, to identify the potential energy savings and to report the findings. It is an important tool which can be used to implement energy efficiency measures and achieve energy conservation in the building sector to get her with extension of the electromechanical equipment life span.

Energy audits help owners determine how and where a building is losing energy. They evaluate the efficiency of a building's heating, cooling and electrical systems. Audits force owners to become aware of problems they didn't know existed. Furthermore, the energy audit can be considered as the most important tool for the energy certificate of buildings, within the application of the Energy Performance of Buildings Directive (EPBD).

Without such initial energy assessment of the building it makes no sense considering relevant energy efficiency measures for it. It is essential, when starting an energy efficiency project on a building, to search for qualified and independence assistance and advice for the energy audit.

**Tool for Energy Efficiency in public buildings**

To determine the current status of the buildings of the ports (Vlora, Corfu and Brindisi), the data of different technical parameters and sizes will take into account the following parameters as defined in Article 5 of KENAK and relative T.O.T.E.E. 20701-1/2010.

- Building category/type.

- The existing and desired indoor environment conditions (temperature, humidity, ventilation, etc.) and the operating characteristics of the building (timetable, internal gains, etc.).
- Climatic data of surround area (temperature, relative and absolute humidity, solar radiation).
- The geometry of the structural elements of the building shell (shape and form of the building, surfaces, shading etc.), orientation, characteristics of internal components (e.g. internal walls) and others.
- The thermal characteristics of the elements of the building envelope, such as: thermal transmittance, thermal mass, absorption of solar radiation, transmittance to solar radiation etc.
- The technical characteristics of space heating installation, such as: the type of thermal power plant, efficiency, losses in the hot water distribution network, the type of terminal units, etc.
- The technical characteristics of the cooling system, including: the type of cooling power plants, efficiency, losses in the distribution network, the type of terminal units etc.
- The technical characteristics of hot water installation, such as the type of hot water production plant, efficiency, losses of hot water distribution network, storage system etc.
- The technical characteristics of the lighting installation.



For the assessment of the current situation a tool will be created to measure the energy efficiency of the buildings on its current state and after the proposed interventions.

Initially the user will have to answer some questions about: Lighting, heating, cooling and ventilation, electrical equipment and water use for the buildings that the renovations will be proposed.

Afterwards, the user has to fill all the necessary data, regarding building, system, electricity and fuel consumption data, some of them are in a drop down predefined list, while others need to be filled with the actual data.

- **Promote the methodology and results as a model to be adopted by the Otranto strait regions and to be recommended for all public buildings**

After the assessment of the current situation a common methodology on interventions will be created. The guide of “Energy efficiency certificate for public buildings” will need to adopted from the Otrando straits regions as a proposed methodology on energy efficiency interventions.

**Players involved**

- Corfu Port Authority
- Igoumenitsa Port Authority
- Port Authority of Vlora
- Port Authority of Brindisi

- Enviromental Observer
- Technical Chamber of Greece – Corfu branch
- Universities / Research & Development Centres
- Certified Energy Auditors

**Timeframe**

| | |
|---|---|
| Apr. 2018 - Nov. 2018 | Elaboration of study about energy audits of the port buildings in Vlora, Corfu and Brindisi – State of art |
| Oct. 2018 - Mar. 2019 (6th sem. of project) | Evaluation of data collected / Proposed measures |
| Apr. 2019 - Sep. 2019 (7th sem. of project) | Preparation of the guide of "Energy efficiency certificate for public buildings" |
| Oct. 2019 - Mar. 2020 (8th sem. of project) | Promotion of the "Energy efficiency certificate for public buildings" |

**Costs (if relevant)**



**Funding sources (if relevant):**

1. World Investment Bank (Energy efficiency programme)
2. INTERREG Greece - Albania 2014-2020
3. ROP "Ionian Islands" 2014-2020
4. Own funds

## ACTION 2b: ENERGY EFFICIENCY ON MARITIME TRANSPORT VESSELS - GREEN SHIPPING

(driven by REGION OF VLORA & AULEDA – LOCAL ECONOMIC DEVELOPMENT AGENCY, VLORE)

### Overview

International trade has grown significantly following rapid increases in global sourcing activities and dispersed production sites. On the other hand, carbon dioxide emissions by the shipping industry are estimated to increase significantly as international trade continues to flourish and prosper. As shipping firms play an imperative role in facilitating global cargo flow, the sustainable development of shipping operations has attracted increasing attention from different stakeholders, including shippers, governments, and the public. Many shipping firms are looking for ways to enhance the environmental sustainability of their operations. As seaborne trade has grown significantly in the past decades, there have been increasing concerns about the environmental impacts caused by shipping activities.

To address these concerns, a growing number of shipping firms have begun to adopt green operations to achieve environmental sustainability. Green operations in the shipping industry are environmentally sustainable ways to perform shipping activities. In addition, a shipping firm operates in a transport chain where various operators (e.g., ocean carriers, freight agents, land transport service providers, warehouse operators, and barge operators) in the shipping community are closely linked, in which the environmental performance of each operator affects the environmental sustainability of the shipping chain.

Due to the imperative role of shipping in facilitating global cargo flow, the sustainable development of shipping operations has become a concern to different groups of stakeholders. After identifying improvements to environmental management within the shipping industry as one of the key issues, the World Wildlife Fund (WWF) has introduced sustainable shipping initiatives which are “innovative schemes that encourage shipping firms to go beyond standard compliance of environmental behaviour and become exemplary in their approach to shipping operations and the environment.”

The continuing growth in international trade and the increasing environmental concerns of shipping activities suggest that shipping firms need to adopt GSPs to improve their environmental performance. The issue of performance in the shipping industry has received increasing research and managerial interest. Environmental protection activities are being amalgamated in business operations. One of the key drivers that compel shipping firms to adopt GSPs is performance which has both economic and environmental connotations. Potential gains from implementing green or environmentally sustainable operations include cost reductions in energy consumption and waste treatment. Examples of environmental performance include increases in energy saving and resource recycle rates. Implementation of green operations also encourages shipping firms to put forth effort in committing to the environment so as to satisfy customer expectations for protecting the environment.

As a result, environmental performance may be improved through the adoption of green operations. Sustainable shipping imitative Exceeds standard compliance Excellence in shipping operations and environmental Sustainable shipping initiative Adopt.

Potential gains from implementing green or environmentally sustainable operations include:

- cost reductions in energy consumption.
- waste treatment.
- BEST practices of environmental performance include increases in energy saving and resource recycle rates.

## Legal Contest

**Legal contest for green shipping initiative is an international one since all the maritime vessels operate according to IMO and MARPOL standards and rules. No national, regional low-s or normative acts can replace the international ones.**

The history of green practices and the literature on environmental management highlight the importance of regulations in environmental protection. Regulations serve as a systematic guideline to direct firms in the implementation of various environmentally responsible practices that range from proper solid waste disposal to Institutional process

Factors that drive institutional process Basis of GSP Adoption 23 reduction in gas emissions. For example, there are international laws, such as the European Community Directives on Waste Electrical and Electronic Equipment (WEEE) which encourage manufacturers to collect and recycle products, and Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) which ensures that the industry adheres to determining the hazards and relaying the information to consumers.



I. In line with these regulations, the Environmental Protection Agency (EPA) in the USA proposed regulations to reduce emissions from ships in 2009. While legislative measures are essential for environmental protection, the enforcement of these regulations is crucial to achieving the goals for environmental protection. From the regulatory perspective, the International Maritime Organization (IMO) International Convention for the Prevention of Pollution from Ships is one of the most important conventions that regulate and prevent marine pollution by ships. It has been modified by the Protocol of 1978 related thereto (MARPOL 73/78), which covers accidental and operational oil pollution, as well as pollution by chemicals, goods in packaged form, and sewage, garbage, and air pollution.

The IMO also holds secretariat responsibilities for the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LDC), 1972, generally known as the London Convention, which has been updated by the 1996 Protocol.

Prior research has argued that loose regulatory enforcement is found to be insufficient in driving the environmental actions of firms. By failing to appreciate the dire consequences of the prosecution of heavy polluters, shipping firms are less keen to comply with environmental regulations. Alternatively, shipping firms will find it in their best interests to focus on environmental protection when they are mandated by regulations to undertake related actions.

Norms on Environmental Protection It is commonly seen that industries establish their own norms of practice in support of their own sustainable development. Many industrial associations, e.g., the Marine Environmental Protection Committee (MEPC), often lead the development and promotion of good practices for environmental protection and provide assistance (e.g., sharing best practices) to their members to guide their environmental efforts.

In recognizing the imperative environmental degradation caused by shipping activities, the MEPC has

recently considered proposals on reducing the carbon footprint of the shipping industry with particular focus on the recycling of end-of-life ships and reducing the levels of harmful emissions.

**Lessons learnt from best experiences PASSAGE project**

> The FinEst fixed link project of tunnel between Helsinki and Tallinn was at the heart of first day exchanges; **the project of railway tunnel could contribute to a huge reduction of C02 emissions linked to strait-crossing of goods and passengers**. It has been demonstrated that emissions of CO2 through the tunnel (61 kg CO2 emissions per unit)

**ACTIONS**

**2.1 Promoting Sustainable shipping drivers.**
**2.1.1** Open seminars with students and companies that operate in maritime transport discussing about:

- Shipping and international regulation compliance.
- CRS & marketing of maritime transport companies
- Economic benefit and environmental protection.

**2.1.2** Promotion of SGP model (green shipping) through media and social media channels.
**2.1.3** Create an info- Package for the green shipping promotion.

**2.2 Research and Innovation**
**2.2.1.** Energy efficiency index calculation for the maritime transport vessels based on the data from the other partners of Otranto straight.
2.2.2. Preparation of green shipping certificate guide based on the best world practices.
2.2.3 Promotion of green shipping guide to the maritime operators in Otranto straight
2.2.4 Publication of research studies in the international scientific Conferences and magazines.

**2.3 Policy recommendation**
2.3.1 Desk analyse of interpretation of energy efficiency index study
2.3.2 Focus groups with regional stakeholders
2.3.3 Presenting the policy recommendations by International Conference “Green Shipping and SGP model”

## Players involved:

**National level:**

- Ministry of transport and infrastructure
- National Maritime administrate
- Centre for maritime traffic monitoring (QNOD)
- Agency for Marine Protected Areas (AKZM)
- National Agency for Environment
- Environment Inspectorate

**Regional & level:**

- Regional Council of Vlora

- Prefecture of Vlora
- Municipalities of Vlore, Himare, Sarande and Konispol.
- Agency for Development 4, Vlora Region
- University “Ismail Qemali” Vlore
- University “Aleksander Mojsiu” Dures
- Auleda- Local Economic Development Agency
- Fishery associations
- Chamber of Commerce of Vlora Region
- CSO-s operating in maritime sector

**TIMEFRAME:**

| | |
|---|---|
| Apr. 2018 - Nov. 2018 | Promoting sustainable shipping drivers (open seminars, promotion of SGP models through different media fonts, info package to be distributed) |
| Oct. 2018 - Mar. 2019 (6th sem. of project) | Research and innovation ( energy efficiency index for maritime transport vessels) |
| Apr. 2019 - Sep. 2019 (7th sem. of project) | Preparation and promotion of green shipping certification guide. |
| Oct. 2019 - Mar. 2020 (8th sem. of project) | Publication in scientific newspapers<br>Policy recommendations preparation, focus groups. |

**COSTS**

1. Promotion of green shipping model - 2000 Euro
2. Research and Innovation, energy efficiency index for maritime transport vessels – 5000 Euro
3. Publication of scientific research studies in international scientific magazines – 1500 Euro
4. Preparation of Green Shipping Certificate Guide – 2000 Euro
5. Preparation of Policy recommendations – 3000 Euro

**FUNDING SOURCES**

INTERREG Albania- GREECE Program
ADRION Program – SHIPMENT project
Regional Council Sources
Erasmus + Program.

## ACTION 3: ENERGY COMMUNITIES INFO PACK & AWARENESS RAISING
(driven by INNOPOLIS: CENTRE FOR INNOVATION AND CULTURE)

### Overview

Energy Communities is an integral part of the implementation plan that describes the actions we will take over the next years to fight climate change: to reduce greenhouse gas pollution and help move us to a prosperous low carbon economy. The establishment of energy communities will utilize the tremendous economic opportunities that exist in the straits as the world seeks to mitigate and adapt to climate change. Furthermore, it will ensure that businesses, innovators and researchers are well positioned to develop the clean technologies and low-carbon solutions that will ensure competitiveness, maintain existing jobs and create new ones. Clean-Tech solutions can save more money by investing in initiatives that reduce greenhouse gas pollution, such as home energy retrofits, electric vehicle incentives, transit, and social housing retrofit. Fighting climate change means transforming the way we live, move and work. We already have the technology we need to make that transition, and energy communities can give such as dynamic motion. Through this action plan, we will showcase the opportunities for the establishment of energy communities that will may protect and transition existing jobs and in addition create new ones. Energy communities can help households and businesses established in straits to adopt low- and net zero carbon energy solutions in homes, vehicles and workplaces. This action plans foresees to give a strong kickstart to mobilize communities into fighting climate change over the long term. With the highly skilled workforce of both Greece and Italy, the abundance of natural resources, the diverse economy, and the mobilization of citizens, regions in straits can deliver next generation of clean technology solutions via the energy communities that will help their citizens to mitigate, and adapt, to climate change.



### *The RESCoop model*

The energy transition to a decentralised energy system based on savings and the production of clean energy from renewable energy sources is a prerequisite not only for the protection of the environment, to tackle climate change and achieve energy security but also to ensure access to affordable energy for all citizens. An energy revolution from the bottom-up is already in progress in Europe. At its core is the movement of community energy, expressed through initiatives of active citizens, energy cooperatives and energy communities. A common point of reference among them is the desire to claim collectively more control in relation to energy, to take on extra roles other than that of the consumer (e.g. to become producers, suppliers, distributors, investors, co-owners etc) and to try a different model, embracing fully or at least to a certain degree, the 7 global cooperative principles.

Nowadays in Europe, there is a variety of community energy projects which together constitute an interesting, dynamic mosaic. Focusing on energy cooperatives, for example, we see different legal forms, variety in terms of type of memberships, activities in many areas (mainly production and supply of energy and less distribution), different financial models etc. In recent years although social and solidarity economy is flourishing in Greece, community energy is still in its infancy, despite the positive steps that we see in some regions. At the same time, the establishment of a new

institutional framework for energy communities is under development.
REScoop is short for renewable energy cooperative, and refers to a business model where citizens jointly own and participate in renewable energy or energy efficiency projects. We also refer to REScoops as community power or community energy initiatives. https://www.youtube.com/watch?time_continue=59&v=wwg3K_Km5ac
REScoops do not necessarily have the legal statute of a cooperative, but rather distinguish themselves by the way they do business. They typically respect 7 principles that have been duly outlined by the International Cooperative Alliance:

1. Voluntary and Open Membership
2. Democratic Member Control
3. Economic Participation through Direct Ownership
4. Autonomy and Independence
5. Education, Training and Information
6. Cooperation among Cooperatives
7. Concern for Community

All citizens are eligible to join a REScoop. After purchasing a cooperative share and becoming a member or co-owner of local RES and EE projects, members share in the profits and often are given the opportunity to buy the electricity at a fair price. In addition, Members can actively participate in the cooperative: they can decide in what and where the REScoop should invest, and are consulted when setting the energy price.



REScoops are not the same as financial cooperatives (FINcoops). The latter also issue shares to finance renewable energy projects, but unlike REScoops, the members of a FINcoop do not own the projects themselves. Projects are typically owned by a private company that receives a subordinated loan from the FINcoop. As a result, FINcoop members are exposed to a considerable financial risk. As a federation, we support the model with direct citizen participation because we believe that it fosters social acceptance for renewable energy.

### *Greek Law on Energy Communities*

On 7 June 2017 the Greek Ministry of Environment and Energy launched a public consultation on the draft Law on Energy Communities. Finally, the law was signed and published on 23 January 2018.
While the European Commission's proposal distinguishes between local energy communities and renewable energy communities and applies different requirements to each, this law proposes only one type of community, which in its general and specific scope of operations, encompasses both types of EU community.

More precisely, the law defines “energy communities” as civil law partnerships with the exclusive aim of:

- promoting the social economy;
- encouraging solidarity and innovation in energy;
- responding to energy needs;
- promoting energy sustainability in the production, storage, self-consumption, distribution and supply of energy; and

- increasing energy efficiency in final consumption on the local and regional level.

Energy communities must engage in one of the following activities:

- the production, storage, self-consumption or sale of electricity or heating or cooling from renewable energy sources or high-efficiency co-generated heat and power (CHP);
- the management of raw material for the production of electricity or heating or cooling from biomass, bio-waste or biofuel;
- the procurement for energy communities of appliances and installations with increased energy efficiency, as well as electric vehicles and vehicles that use natural gas, biofuel or liquefied gas for energy;
- the distribution of electricity or heating or cooling on a local level;
- the supply of electricity and natural gas on a local level;
- the management of final electricity consumption;
- the development and the management of fueling stations for electric vehicles, CNG, liquefied natural gas, liquefied gas or biofuel, as well as management of their transport on the local level; or
- the management of desalination of water through RES.

While the EU draft directives do not require energy communities to be non-profit organisations, the draft law generally requires energy communities to be non-profit organisations, with the exception of RES energy communities which may either be small and medium-sized enterprises or non-profit organisations. That said, they are entitled to distribute profit if they have at least 15 members, 50% of which are individuals.



According to the law, individuals, public and private law legal entities and local authorities (municipalities) of the seat of an energy community or its plant may be members of the energy community. The minimum number of members is as follows:

- five public or private law legal entities or individuals;
- three local authorities; or
- three members, if at least two are local authorities.

At least 75% of the members should be legally connected to the place of the energy community's seat (e.g., a member should have real estate, residence or citizenship within the territory).

Under the EU proposal, RES energy communities may not have installed more than 18 megawatts of renewable capacity for electricity, heating and cooling and transport as a yearly average in the previous five years. The law envisages no capacity limitation for RES produced by energy communities.

The law provides financial incentives for energy communities, including:

- a guaranteed tax rate for five years;
- exemption, under certain conditions, from paying part of the RES tax payable to local authorities;
- exemption from paying the annual tax for maintaining RES and high-efficiency CHP licences;

- priority in processing applications for connection to the grid and approval of the environmental conditions for RES and high-efficiency CHP production units;
- a 50% reduction the guarantee payment; and
- a 10% reduction in the minimum capital required to obtain an energy supply licence.

The following incentives may be introduced with respective ministerial decisions:

- an exemption from auctions on RES feed-in-premiums or participation under special regime and conditions; and
- a reduced in the fees of the provider of last resort.

## Lessons learnt

In Greece, there is an effort for the establishment of *Energy Co-operative in Sifnos* Island http://sifnosislandcoop.gr/en/energyautonomy/index.html while hybrid efforts are starting in different areas in Greece, So far a very specialized competence centre / reference point is not established in Greece while the Center for Renewable Sources & Saving (www.cres.gr) is always the National Reference point.
Another relevant initiative in Greece is the *Energy Cooperative Body of Karditsa*, aiming to organize: the production, management, processing and distribution of biomass and biofuels; the production and distribution of energy that can result from any form of RES exploitation.



## 3.1. Establish an ICT platform to act as a Knowledge reference point for Energy Communities support

A Knowledge reference point for the support of energy communities will act as one stop point of reference regarding all issues for the establishment of energy communities. By providing publicly all required information via an ICT platform, the knowledge reference point can act as a digital space for the exchange of valuable information, best practices, expertise and the finally the facilitation of collaboration.

**Featuring best practices, EU projects & Initiatives in energy communities and their model of operation**

This specific sub-action is planned to utilize existing knowledged EU-funded projects and other initiatives both at EU & global level. The identified best practices can be capitalized and their outcomes can be consolidated. More especially, a report will be prepared will showcase the most important initiatives and how their results can be transferred and utilized at local level in Greece & Italy.

**Identification of Legal & Financial framework for the establishment of energy communities in cross-border area**

*Legal & Financial framework*

In order to motivate citizens and other legal entities to create Energy communities a pre-study should have been made to map down the legal & financial framework in order to provide extend information for their establishment both in Italy & Greece. The national energy efficiency plans will be analysed in order to identify the market opportunities based on the mixture of Renewable Energy Sources (RES) for the two countries. Additionally, EU directives for Energy Efficiency will be analysed (namely 27/2012/EC, 2009/28/EC, 2009/72/EC), regarding the national targets for energy savings. Latest updates regarding new legislative framework for energy exchange and virtual net metering that already exist in Greece will be also analysed. The objectives of this analysis are:

A. The understanding of the opportunities from the Energy market opening for everyone and especially home producers
B. The ability for synergies among local communities, businesses & authorities for energy production.
C. The win-win benefits from the market penetration of RES & local acceptance.
D. The democratic model for participation in decision making (e.g. 1 member - 1 vote)
E. The fruitful conditions for regional development
F. The strengthening of innovation
G. The tackling of energy poverty
H. The energy saving

Any criteria for locality of the members of the energy community will be examined in order to identify the geographical limitations for participants. In addition, any special provisions for Energy Communities of small islands.
Different analyses will be conducted regarding the legal framework of various energy production activities like:

A. Production, storage, self-consumption or sale of electric or thermal or cooling energy from RES and HECHP stations
B. Production, distribution and supply of thermal or cooling energy
C. Supply of Electricity or Gas to Final Customers
D. Managing raw material to produce energy from biomass or bioliquids or biogas
E. Supply for members of energy products, electric vehicles and alternative fuel vehicles.
F. Development of alternative fuels (vehicle charging) and alternative fuel vehicles
G. Installation of water desalination units using RES
H. Provision of energy services.

Regarding the financial framework, all issues will be examined regarding the tax rates, the stabilization (in regards to years) and possible financial provisions for small islands, possibilities of the new legal entities of energy communities to participate in national & international project, minimum capital for supply licenses. In addition, all issues regarding production licenses will be examined, along with their costs. Financial tools that can support the energy communities will be examined both from national funds and from ESIF. At last any national contact points that act as a helpdesk for the energy communities' establishment will be mentioned.

**Create info-packs regarding the establishment of an energy community**

A short guideline digital handbook (info pack) will be prepared in Italian, Greek & English language that will include all key information that derived from the analyses of legal & financial framework

and the feasibility study, in order to attract the initial interest of potential energy community members & founders. The info pack will have dual role: to provide information in well-understood manner in brief; to increase the site visits to the developed Knowledge Reference point ICT platform.

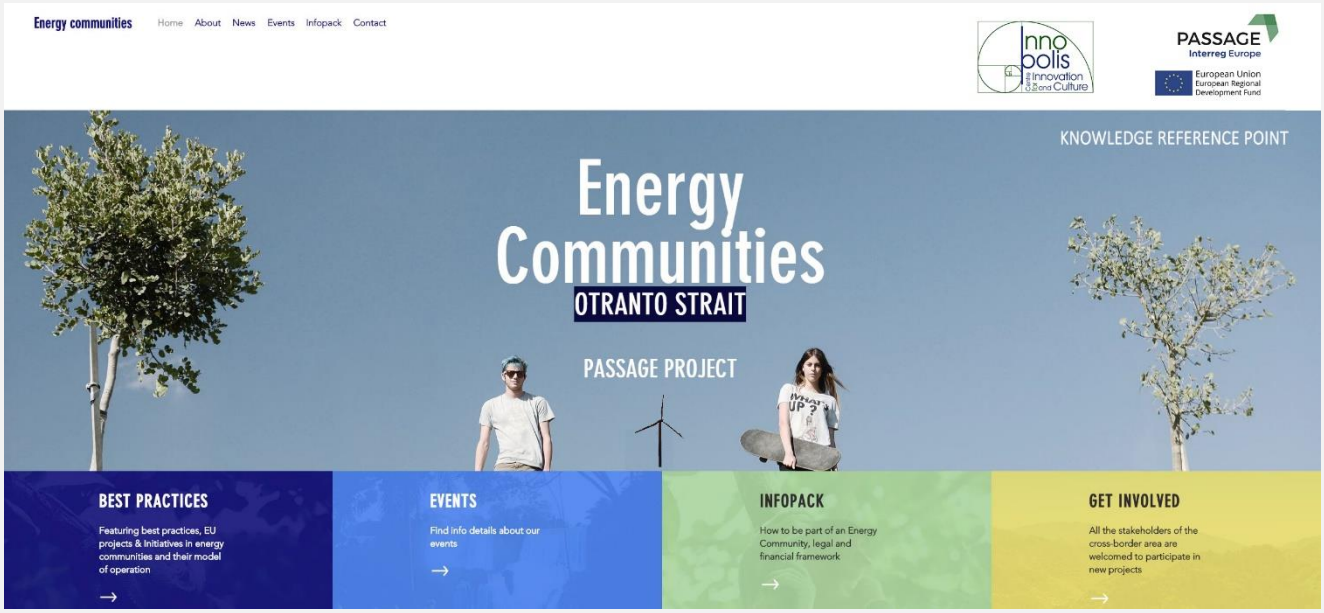
**Creation of a stakeholders web - service with personal profile capabilities and integration in the platform**

This sub-action foresees to the utilization of the specific sub-set of local stakeholders in Greece & Italy, that are particularly interested in energy communities and have been already identified in previous PASSAGE meetings. The web - service will foresees to facilitate the communication level between the identified stakeholders and new interested parties. The web - service will be integrated within Knowledge Reference point ICT platform. Each stakeholder will have personal profiling capabilities and communication details.
The sections to be included in the profile are: name and address of organisation, legal representative, main contact person, his/her telephone number, mobile number, email address, Skype name, description, and website.
Partners from (InnoPolis & Region of Ionian Islands) and Italy (Province of Lecce) will share the work equally in passing information within the platform after the web service is finished and will invite other interested stakeholder to join at local level. All stakeholders' details will follow a unified format and will be collected via a standardized format.

**Elaboration of proposals for EU & national funding programmes - Partner Search**

In order to attract technical expertise (legal, engineering, economic) for the establishment of energy communities/cooperatives close monitoring of all EU and other relevant calls for funding will be identified and partners and experts from the cross-border area will be able to form consortia and submit proposals.

**Sample screenshots:**






**Menu**


**Sections**

## 3.2. Awareness Campaigns for the creation of Energy Communities

**Communication Plan & Strategy for the promotion of energy Communities**

Communication is a key component in the successful promotion of the energy communities. Aim is to aware local communities, regarding energy cooperatives.

Capitalization

In next level, lessons learned from Interreg Europe past projects regarding communication strategy along with European Commission guides for successful communication will be studied in order to produce a concrete and reliable communication strategy. Additionally, common EU communication guidelines will be followed in great detail in order to be non-discriminatory and accessible for all.

Strategy

The communication plan will set the overall communication strategy that will be followed from each participating stakeholder in the promotion of energy communities' creation & establishment. The communication plan will clearly define certain goals regarding the impact in the specified target audience. Those goals will follow a specific time-plan. Additionally, it is expected that certain actions shall be taken for receiving feedback and engaging target groups into dialogue.



Foster Synergies

The communication strategy will give a greater focus in fostering synergies with other existing initiatives at local, regional, national & international level to ensure complementarity and avoid duplication with other EU programmes and initiatives regarding energy co-operatives. Moreover, it will pay more attention into the involvement of key stakeholders in the dissemination of information.

Good Governance

The Communication planning ensure the good management by the following means: A) Through the preparation of a communication plan and strategy B) The involvement of selected consortium partner in communication activities. C) The continuation of the awareness for the establishment of energy communities after the end of the project with own sources. D) The involvement of professional communicators as external experts Communication leader of this sub-activity (InnoPolis) to prepare pixel-perfect designs E) The creation of a feedback loop with involved stakeholders partner countries (Greece & Italy) for the amplification of project outcomes mainstreaming them to national-regional level. F) Ensuring transparency at all stages of project implementation via Knowledge Reference point ICT Platform.

Targeted Communication

Specific communication actions will target at specific audience. Each audience will have a distinct communication strategy using targeted messages, means and language as it will be defined in the activity of preparation of the communication plan and strategy. The different ways of communication and relevant mechanisms will be used in such way, to amplify and multiply the

message in various communication channels.

Management

The partners from Greece (InnoPolis and Region of Ionian Islands) and from Italy (Province of Lecce) will monitor and evaluate the progress and the quality of results to meet the demands of the planned actions. Partners will conduct an assessment of the measures used and will suggest recommendations for modifications if needed.

**Promotion via Social Media Campaigns & Electronic Communication**

In accordance to the modern trends that are utilised in day-to-day networking operations, dissemination can be assured also through social networks (Facebook, LinkedIn & Twitter). The profile(s) are expected to be updated with news and the benefits for the establishment of energy cooperatives and with relevant articles & material from the Knowledge Reference point ICT platform, ensuring & promoting its usage. Specific campaigns will be created in accordance with action's communication plan and strategy. Partners from Greece (InnoPolis & Region of Ionian Islands) and Italy (Province of Lecce) will be responsible for the creation of material.

**Roadshows targeting local key stakeholders (local government, chambers, professional associations, NGOs)**

A series of meetings will be organized in Greece (from InnoPolis & Region of Ionian Islands) and in Italy (from Province of Lecce) in order to attract the interest of potential stakeholder to participate and/or establish energy communities. In the meetings the objectives and the business opportunities in the energy production field will be presented. Local meetings will be conducted in native languages and the relative info-packs will be given. InnoPolis will perform a quality assessment report and will write a report regarding the outcomes & the concrete results of the round table discussions.



## PLAYERS

*Players involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)*

This action plan has been built on collaboration. Project partner from Greece (InnoPolis, as an expression of civil society, & Region of Ionian Islands, as the regional policy maker) and Italy (Province of Lecce) will work with people, businesses, industries, municipalities, environmental organizations and other partners to build a greener, more prosperous future.
Especially for Greece, the main players will be the civil society from the straits of the Otranto and Corfu and from the adjoining regions that would wish to receive the experience of establishing an energy cooperative. Others are expected to join on the way, e.g. Private Sector such as ESCOs, Academic institutions, especially Energy and Finance departments, International partners possibly Investment Houses and Energy companies with expertise in energy generation, creating economies of scale and transferring best practices.

Key stakeholders of this action will be the following:

- Managing Authority CBC GREECE-ITALY
- City of Corfu
- City of Paxi
- Port of Corfu
- Port of Igoumenitsa
- Technical Chamber of Greece - Corfu branch
- Chamber of Corfu
- Economic Chamber of Greece – Regional Dept. of Ionian Islands
- Zero Energy Buildings ESCO
- Ecosun - energy saving solutions
- other

## TIMEFRAME

| | |
|---|---|
| Apr. 2018 - Sep. 2018<br>(5th sem. of project) | Identification of legal & financial framework<br>Funding opportunities<br>Needs analysis |
| Oct. 2018 - Mar. 2019<br>(6th sem. of project) | Cross-border Energy Communities Reference point<br>(web development, content upload) |
| Apr. 2019 - Sep. 2019<br>(7th sem. of project) | Communication - dissemination<br>Awareness Campaigns (Roadshows in cross-border area) |
| Oct. 2019 - Mar. 2020<br>(8th sem. of project) | Monitoring of activities<br>Update of content |

## FUNDING SOURCE

Own funds
Bidding

Interreg Europe

European Union | European Regional Development

*Sharing solutions for better regional policies*

Provincia di Lecce

Regional Council of Vlora

REGION OF IONIAN ISLANDS

Innobolis Centre for Innovation and Culture