

Promoting best practices to support energy efficiency and renewable energy in European islands and remote regions



HELLENIC REPUBLIC  
REGION of EPIRUS

## **ACTION PLAN OF THE EPIRUS REGION**

<<Ioannina, 10.07.2021>>

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## EXECUTIVE SUMMARY

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### Project abstract

Maximising energy savings and reaching high energy efficiency levels are crucial challenges currently faced by the EU. Remote regions, as those partners in the RESOR project, are characterised by a higher dependence on fossil fuels and general less efficient energy choices and behaviours among citizens and even more among businesses, for whom investment in renewables or energy efficiency are often not a priority or financially feasible. RESOR was thus born as a response to the need for supporting businesses in the adoption of more sustainable energy behaviours and practices. The focus chosen by partners targets remote territories, which on one hand represent less favoured areas of Europe but which, on the other, are often well placed to employ innovative solutions and attract energy investments.

The aim of the project is to support energy efficiency and renewable energy use in businesses of the secondary and tertiary sector of the partner regions by improving current regional policies. The project activities will envisage an interregional learning process involving staff from public authorities and representatives of relevant stakeholder groups. This learning process will result in the identification of best practices for the improvement of regional policy instruments supporting energy efficiency and RES use and in the draft of Action Plans to be implemented in each partner region.

Product duration will be 54 months and the total budget will be 1.772.662 €.

### Region of Epirus

The Region of Epirus occupies the northwestern part of the country, being an Entrance - Exit Gateway to the Balkans and Western Europe. The Region of Epirus includes 4 Regional Units, while it has a total area of 9,203 sq.km, which covers 6.9% of the total area of the country.

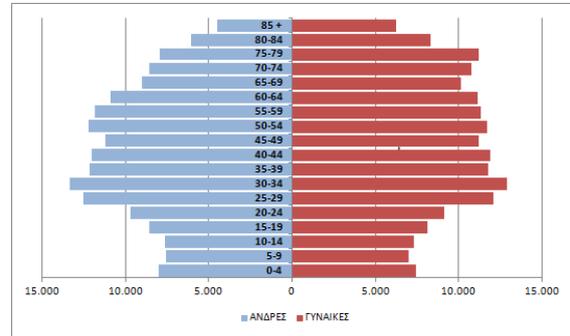
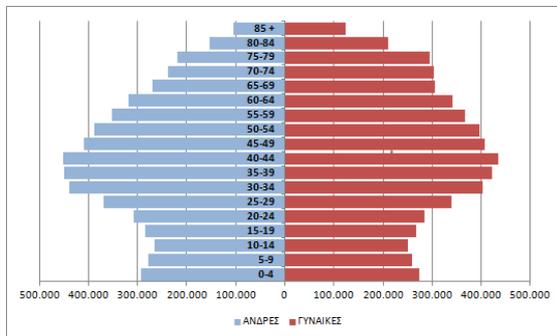
The main demographic trend of the Region is the population shrinkage and ageing of the population. According to the latest official population census (ELSTAT, 2011), the permanent population amounts to 336,650 people and constitutes about 3.1% of the country's population. During the period 2001-2011, the Region of Epirus presented a significant decrease of the permanent population by 4.4%, while the corresponding decrease at the national level amounted to approximately 1.1%.

Based on the above population data, the Region of Epirus shows a significantly lower population density than that of the country. In particular, the population density of the Epirus Region is estimated at approximately 36.58 people per sq.km, while the country's population density is estimated at approximately 81.96 people per sq.km.

This performance ranks Region of Epirus in one of the most sparsely populated Regions in the country. The age structure of the population of the Region shows many similarities with the structure in the whole country, which means that like the country as a whole, the Region of Epirus faces the problem of population aging, as reflected in the relevant age pyramid of the Region of Epirus in relation to the corresponding country.

Table 1. Left - Pyramid of ages of the whole country

Right - Pyramid of ages of Region of Epirus



According to the main demographic indicators, the demographic situation of Region of Epirus is significantly worse than that of the country. In particular, the calculation of the ageing index for the Region of Epirus shows that in the year 2012 there were 184.2 elderly people per 100 children, while for the country this ratio amounts to 137.

This indicator is significantly higher for women (respectively 214.8 older women in 100 girls compared to 155.7 older men in 100 boys). The problem of aging population has a direct impact on the dependency index of the Region, which indicates that in the same year, 100 working people accounted for 56.5 people classified as economically dependent (elderly and children), compared to 51.7 people at the level of country.

The Region of Epirus used to be one of the most remote and isolated regions of Greece. However, thanks to the construction of infrastructure projects, i.e. the Egnatia and Ionian Highways, the Region came out of such isolation and is taking progressive steps towards development in all sectors. One of the most important challenges the Region of Epirus has to deal with is the promotion of energy efficiency and the use of RES, as well as the reduction of carbon dioxide emissions. Indeed, Epirus is making a great effort in promoting RES. According to the revised Renewable Energy Directive (Directive (EU) 2018/2001) and the national legislation (L. 1630B/2010 and 3851A/2010), the Region of Epirus intends to contribute to EU targets, as regards the annual CO<sub>2</sub> emissions reductions, i.e. 3.631 tons. The reference year is 2012 and the target is to be reached by 2023. The calculation of this target was made by the General Secretariat of the Ministry of Energy based on the methodology on the annual report for climate change to the UN (ANNUAL INVENTORY SUBMISSION UNDER THE CONVENTION AND THE KYOTO PROTOCOL FOR GREEN HOUSE AND OTHER GASES).

## PART I – GENERAL INFORMATION

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### 1. What is the state of play of the issue addressed by this policy instrument in the territory? Why is this particular issue of relevance to the territory and what needs to be improved in the territorial situation?

Epirus is one of the most isolated regions in Europe and energy consumption accounts for a big portion of the budgeted expenses, mainly for Public use buildings and resources. Conventional fuels are largely used and the winter period is always characterized by a seasonal peak of energy use due to adverse climatic conditions. The reduction of energy use and the exploitation of the potential of Renewable Energy Sources constitute two major issues for the region. Indeed, one of the key aims of the operational programme is to contribute to sustainable growth by developing sustainable public transport and by supporting energy efficiency in public/private infrastructures. Public buildings have been the key target of thematic objective 4, whereas a specific focus on energy efficiency and RES in companies is missing. For this reason, the partner considers important to provide more tailored support to businesses to provide with new and more sustainable competencies and increase their competitiveness.

### 2. Description of the main features of the policy instrument (e.g. objective, characteristics, priority or measure concerned) and the reason(s) why it should be improved?

The policy instrument addressed by the partner is the ERDF Operational Programme of Epirus 2014-2020. The thematic objective specifically is TO4 'Promoting energy efficiency and production and use of renewable energy'. Epirus's Operational Programme under TO4 aims to promote energy efficiency and use of renewable resources, especially in public infrastructures and housing including social housing (IP4c) and low-carbon strategies for the region, including urban areas (IP4e). The main causes for the implementation of the relative objective are:

- the contribution in the national objectives in regard with the reduction of the energy consumption and the use of RES
- the existence of high energy efficiency potential in the building sector (most of the building mark low in the energy efficiency)
- compliance with the European Rules (in Building Energy Efficiency & in efficiency in the use of energy)
- harsh climate conditions due to the mountainous terrain of the Region, that results in high energy demand in conventional fuel, with season peaks during winter
- contribution to the Smart Specialization (RIS) of the Region
- Response to the priority of the Partnership Agreement for Cohesion Policy 2014-2020 for the "Protection of the Environment-transition to a friendly to the environment economy"

Currently, the TO4 does not include any focus targeting energy efficiency and use of renewable resources in businesses specifically. The Region of Epirus, who is the managing authority of the Operational Programme, considers important to promote changes in energy efficiency and use of renewable resources also in companies operating in the industrial system and in the service sector. Improvements are thus needed to include energy efficiency standards and prove that businesses' energy investments in energy efficiency result in significant energy savings, economic opportunities and cultural value.

### 3. What has happened so far in phase 1?

Four study visits were held so far (Canary island, Madeira, Cyprus and Epirus), while the meeting in Reunion did not take place due to restrictions imposed by Covid-19. During these meetings, visits were made to secondary and tertiary sector units (hotels, agricultural and industrial infrastructures). The ideas we gained were important for the formation of the action plan of the Region of Epirus.

Firstly, at Canary Island (see the photos below) we visited an agricultural farm which used the sea water, desalinated it and with it watered the fruits and vegetables of the unit. A small amount of electricity used to transform salty water into a drinkable one, produced by wind turbines.



Our second study visit, where at a hotel at the southernmost site of the island. This hotel used solar water heaters, mounted on the rooftop of the building which heated the water of the pools at an ideal swimming temperature.



Finally, the third study visit was at a laundry store. This infrastructure cleans the sheets and towels from big hotel complexes, by used a small percentage of electricity from nearly 400 PV panels mounted on the rooftop of the building.

The second study visit was at Madeira Island. There, we visited Galomar Hotel, Madeira's first self-sustainable hotel, with 542 PV panels and 77 thermal solar heaters, 2 electric charging stations and solar energy powered elevators.



Our next, and final study visit, was at a biomass factory, which is going to create a biomass market in Madeira that contributes for the reduction of fossil fuels consumption. Its mission is the installation of the first biomass plant with drying and calibration processes that increases the calorific value making the product more competitive. The substitution of fossil fuels for pellets reduces energy costs by 30 to 45% for the final user.



The third study visit was at Cyprus Island. There, we visited FOSS – Research Centre for Sustainable Energy (University of Nicosia), a centre of excellence in energy that act as a structure where world-standard R&D work can be performed.



Our final visit there, was at Cyprus Garlsberg Brewery, which uses State of the Art-Brewing Technology and Energy Efficiency Measures.



In parallel with the study visits, two regional meetings were held with the stakeholders, in which they were informed about the study visits and the exchanged views on the possibilities of energy interventions and energy efficiency in the secondary and tertiary sector. The first regional meeting were held at Ioannina on the 18<sup>th</sup> March of 2019 with 9 stakeholders from:



- Technical Chamber of Greece
- Private construction companies
- PV installers
- Bioenergy companies
- Managing Authority
- Municipalities
- Project managers
- Region of Epirus staff

The second regional meeting were held at Ioannina on the 24<sup>th</sup> June of 2019 with 15 stakeholders from:



- Technical Chamber of Greece

- Director of Environment & Spatial planning
- Local construction companies
- National construction company
- PV expert
- Forester
- Bioenergy company
- Managing Authority of Epirus
- National Electric company
- Project manager of Municipal Solid Waste Plant
- Center of Renewable Energy Sources (CAPE)
- Region of Epirus staff

The two events include main experiences, viewpoints and suggestions of stakeholders on existing regional measures, projects, initiatives on energy efficiency and use of renewable energy, their effectiveness and impact, main specific needs and constraints identified by stakeholders for the promotion of energy efficiency and use of renewables in companies in the region, best practices / examples proposed directly by stakeholders, if any, views / suggestions on the measures / policies / good practices identified in other regions, specific relevant comments made by representatives of the different types of stakeholders involved on the regional analysis and finally, facilitation techniques used, if applicable (ex: brainstorming, role playing, storytelling, etc).

**Project:** *RESOR - Promoting best practices to support energy efficiency and renewable energy in European islands and remote regions*  
(<https://www.interregeurope.eu/resor/>)

**Partner organisation:** *Region of Epirus*

**Country:** *Greece*

**NUTS2 region:** *EL 54*

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## PART II - POLICY CONTEXT

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**The Action Plan aims to impact:**

- Investment for Growth and Jobs programme
- European Territorial Cooperation programme
- Other regional development policy instrument

**Name of the policy instrument addressed:**

Regional Operational Programme of Epirus 2021 - 2027

***Objectives, contents and implementation status of:***

***- ROP of Epirus 2021-2027,***

***-ROP of Epirus 2014-2020***

***-& the competences of Region of Epirus in the topics of RESOR***

-The Regional Programme of Epirus 2021-2027, is under consultation right now. The EU Commission has tabled a proposal for the ERDF Fund Regulation that is still pending to be approved. However, we can derive from the Regulation Proposal, the main policies that promote our project's aim.

The Policy Objective 2 "A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate change mitigation and adaptation risk prevention and management, and sustainable urban mobility", includes 2 (two) relative specific objectives:

- (i) Promoting energy efficiency and reducing greenhouse gas emissions
- (ii) Promoting renewable energy in accordance with Renewable Energy Directive (EU) 2018/2001[1], including the sustainability criteria set out therein

-Region of Epirus, under the Regional Operational Programme 2014-2020, and in particular the Priority Axis 2: Protection of the Environment and sustainable growth, Thematic Objective 4: Support of the transition toward a low CO2 emissions economy in all sectors, defined the appropriate activities for promoting energy efficiency. However, the activities target on the public building and housing sector. In regard with the implementation of activities in the energy efficiency of SMEs, during 2018, the relative Call 74/2018: Boosting SMEs with investments in technological upgrade and energy efficiency, was launched, under the Priority Axis 1 "Boosting of regional competitiveness with the development of innovation", Thematic Objective 3 "Improvement of the competitiveness of SMEs", Investment Priority 3c "Boosting

of creating and upgrading skills for the development of products and services”, and Special Target 3.3.1. “Improvement of the technological level of the SMEs of the Region”.

The proposed interventions, under the call, included:

-Inclusion of automation systems and technological upgrade for the production of modernized quality products and services

-Investments in the application of new standardization systems in products and services, adapted to the market demand.

**-Investments in energy efficiency systems.**

**-Inclusion of “green” infrastructure for the reduction of the environmental footprint of the SMEs.**

The submitted investment plans of the SMEs, provided us with useful panorama of data, in regard with the prioritization, attraction and familiarization of the interventions in energy efficiency by the SMEs:

The energy efficiency interventions sorted with a decreasing trend:

- Thermal solar panels
- Insulation Interventions in the building shell
- Double glazing and upgraded window frames
- HVAC technology
- Net metering (RES)- photovoltaic panels
- Use of LED lighting

## PART III -PRACTICE IDENTIFIED

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Among the RESOR activities is the collection of different good practices per participating country in order to disseminate them actively to the rest of the European Union regions and facilitate their replication.

All of them are reported through the learning platform enabled by the Interreg Europe programme. Each good practice has a significant impact in local economy. As Region of Epirus, we identified the practice from Madeira partners, and it is the “Hotel Galomar”, Madeira ‘s first energy self-sustainable Hotel.

The key point is with what kind of interventions we reach the sub-goal of energy efficiency under the context of self-sustainability in the tertiary business (e.g. hotel), and the costs that these interventions involve.

Although we recognized the full spectrum of the sustainability interventions, that include

- Water management
- Recycled and recycable materials
- Use of innovative technology  
& social code of conduct,

, our main focus was in regard with the required energy efficiency interventions.

## PART IV - DETAILS OF THE ACTIONS ENVISAGED

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**Region of Epirus**, in the context of the aforementioned tools, and in association with the Local Support Group (LSG) acknowledged the possibilities for action, in the dissemination of awareness in regard with energy efficiency, for the local businesses. In particular, the action plan includes:

- Capitalization in the results of Call 74/2018: “Boosting SMEs with investments in technological upgrade and energy efficiency” of ROP 2014-2020
- Organising a community of stakeholders (local hotel associations, representing also most remote areas), municipalities, in order to promote the benefits of energy efficiency systems.
- Promotion of the economic, environmental and social benefits from the use of RES in energy efficiency.
- Informing stakeholders of the recent technologies & equipment in regard with energy efficiency with dissemination events and campaigns targeted to the promotion of energy efficiency.

The objective of Action is to boost the awareness of local stakeholders, in regard with solutions that are offered by the energy efficiency market and experts. The result is the reevaluation of business investment in energy efficiency, prioritizing the reduce of the environmental footprint of their businesses.

## ACTION 1. Promotion activities in regard with new technologies & systems in energy efficiency in the tertiary sector (& especially in the tourist industry)

<b>Background</b>	The respective action is inspired by the presentation of the case of “Hotel Galomar” in Madeira, named the first energy self-sustainable Hotel in the island. We took in consideration the use of RES in their energy efficiency systems (542 photovoltaic & 77 thermal solar panels), together with the 2 charging stations (for electric cars) and the solar energy powered elevators. Moreover, it is impressive the use of new technologies and equipment for the optimization of energy savings.
<b>Description</b>	<p><b>Organisation of the activities of the Action 1, in order to improve the policy instrument. The aim is to inform the stakeholders with the benefits of new technologies &amp; systems in the energy efficiency:</b></p> <ul style="list-style-type: none"> <li>• Capitalization in the results of Call 74/2018: “Boosting SMEs with investments in technological upgrade and energy efficiency” of ROP 2014-2020</li> <li>• Organising community of stakeholders (local hotels mostly from remote areas), municipalities, in order to promote the benefits of energy efficiency systems</li> <li>• Promotion of the economic, environmental and social benefits from the use of RES in energy efficiency.</li> <li>• Inform of recent technologies &amp; equipment in regard with energy efficiency with dissemination events and campaigns targeted to the promotion of energy efficiency</li> </ul> <p>The action is a process that facilitates the transfer of energy efficiency cases/examples from experts to hotel owners, and provides them with results in reducing their energy costs. The ending result is to provide beneficiaries with appropriate cost-benefit solutions, adjusted to the region’s climate, and according to their needs and capacities.</p>
<b>Players involved</b>	<p>Stakeholders &amp; distribution of roles:</p> <p>Region of Epirus: Owner of the action (planning and implementation body of policies, undertaker of the coordination of the action)</p> <p>Managing Authority of the Operational Programme for the Region of Epirus: Funding &amp; programming body of the policy tool (specialization of the action)</p> <p>Municipalities: support in the dissemination of the action plan activities</p> <p>Regional hotel associations &amp; tourism businesses: final beneficiaries of the action plan activities</p>
<b>Timeframe</b>	2021-2024
<b>Costs</b>	<p><i>Expenditure:</i></p> <ul style="list-style-type: none"> <li>-Information &amp; publicity (social media): 500 €</li> <li>-Webinar speakers &amp; experts: 2.000 €</li> <li>-Coordination services &amp; organization of webinars: 500 €</li> </ul>

<b>Funding sources</b>	<i>Regional Programme 2021-2027</i>
<b>Expected results</b>	<i>Number of enterprises informed: Output: 50 (list of participants in the webinars)</i>

### Timeframe

The overall timeframe of the action amounts to 15 months: During the first five months of implementation the activities, activities in regard with the organization of the community will take place, prioritizing the receive of feedback in regard with the state of play in energy consumption by the beneficiaries.

During the next 6 months, the dissemination campaign will be launched with 4 total webinars, which experts will present energy efficiency cases, adjusted to the beneficiaries of the action plan.

In the last 2 months, a questionnaire will be filled in from the participants in the webinars, evaluating the webinars and its influence in the decision making of the beneficiaries.

Activities	Implementation of Action Plan		
	1 <sup>st</sup> -5 <sup>th</sup> month	6 <sup>th</sup> -12 <sup>th</sup> month	13 <sup>th</sup> - 15 <sup>th</sup> month
1.Community building & Record of business needs			
2.Launch/coordination of webinars			
3.Draft of questionnaires & assessment of Action Plan acceptance & application			

## PART IV – MONITORING

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The following quantitative indicators of outputs are proposed for monitoring the implementation of the action.

<i>Indicator</i>	<i>Type</i>	<i>Action</i>	<i>Target</i>
Number of enterprises that are informed	Output	Participants in the webinar	50

The monitoring period of the action (2<sup>nd</sup> phase) of the RESOR project, for Region of Epirus, is from 01.08.2021 till 30.11.2022. During the monitoring period, the implementation of the action and the achievement of the target will be assessed every six months. At the same time, the achievement of the objectives will be recorder in the reports to the Joint Secretariat of the Interreg Europe Programme.

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*Date:*

*Signature:*

*Stamp of the organisation (if available):*