



Promoting energy sustainability in the small communities in Albania (Alterenergy Project)

Albania National Agency of Natural Resources

Status of Energy efficiency in Albania

Problems:

High energy intensity due to inefficient generation and transmission processes, old buildings, not end-use energy efficiently consumption;

Not implementation in place of the EE law;
Institutional and capacity building to be performs;

Very limited number of energy auditors;

Energy prices are low and cross-subsidized, while non-payment is a significant issue.

• Current Legislation

- Energy efficiency” law; (2005)
- “Energetic building” code; (2002)
- “Energy conservation in buildings” law; No. 8937, dated 12.09.2002
- Law No.10113, date on 09.04.2009, “On the indication by labeling and standard product information of the consumption of energy and other resources by household appliances”;

• Status of Law of Energy Efficiency in Albania

- Albania - Draft of the Law on Energy Efficiency and Law Energy Efficiency Building Performance will replace the existing Law on Energy Efficiency (Law No.9379, Official Bulletin No 39, Date of publication: 6th June 2005) which has not been properly implemented. This law transposition of Directive 2006/32/EC on energy end use efficiency and energy services.
- Albania Government has approved National Action Plan of Energy Efficiency, September 2011

Energy Efficiency Strategy

Target 9% 2018, 20 % 2020

Ensuring the normal market operation in the field of energy, including the price formation according to competition criteria and to environment protection costs and benefits.

Promotion of financing solutions for the initiatives related to energy efficiency and savings.

Education and creation of the awareness of the general public and energy users about the necessity and benefits of reducing inefficient and non-economic energy consumption.

Promotion of the private initiative and the development of cost-effective energy efficiency and conservation services.

Co-operation with other countries in the field of energy efficiency and compliance with the country commitment and obligations under any international treaty or conventions of which Albania is a party.

Energy Efficiency policies and measures

Year 2015

Legal and regulatory frameworks. Albania will approve Energy Efficiency Laws

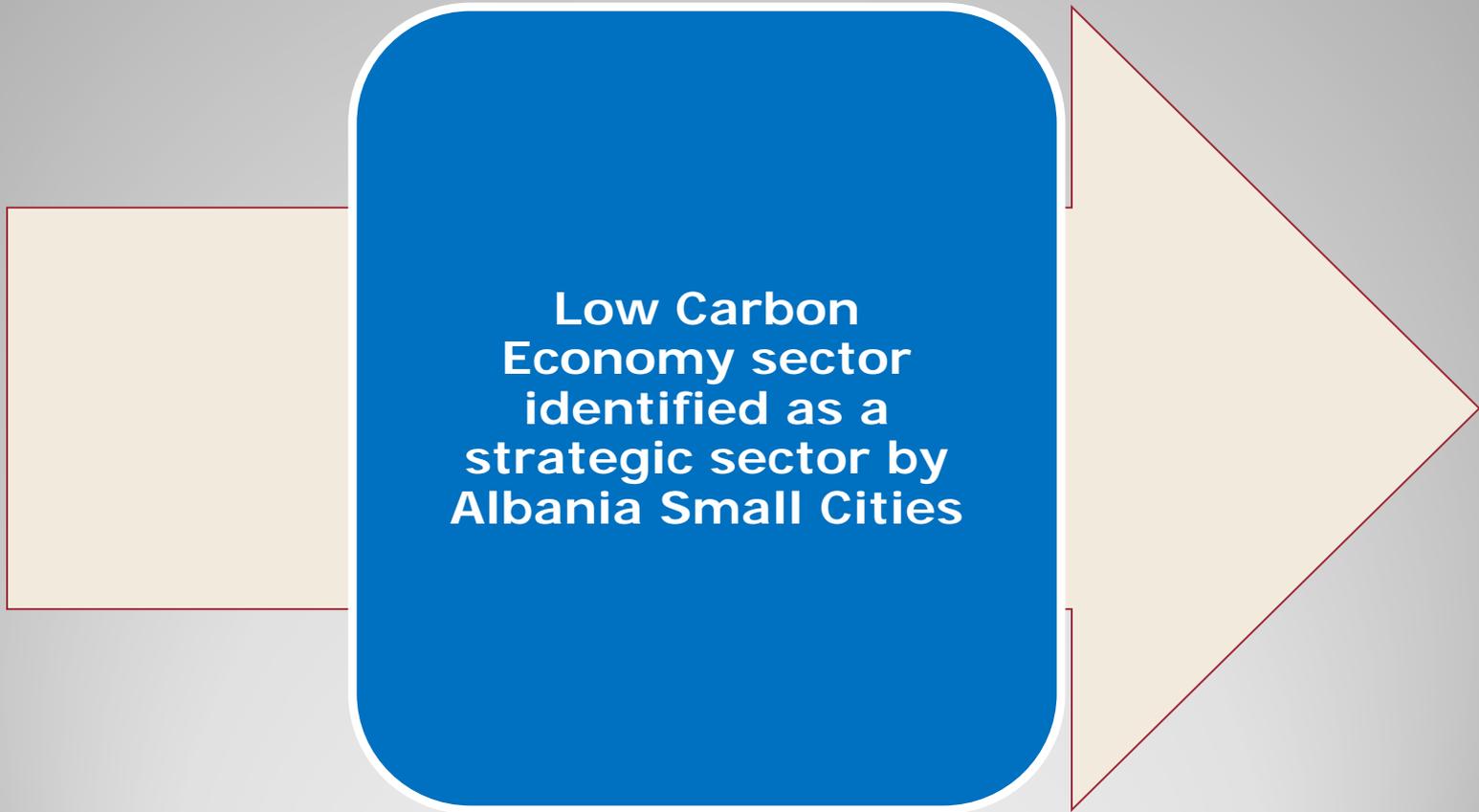
Incentives of all kinds. Preparation secondary legislation

Modern building codes and EE standards for appliances and equipment.

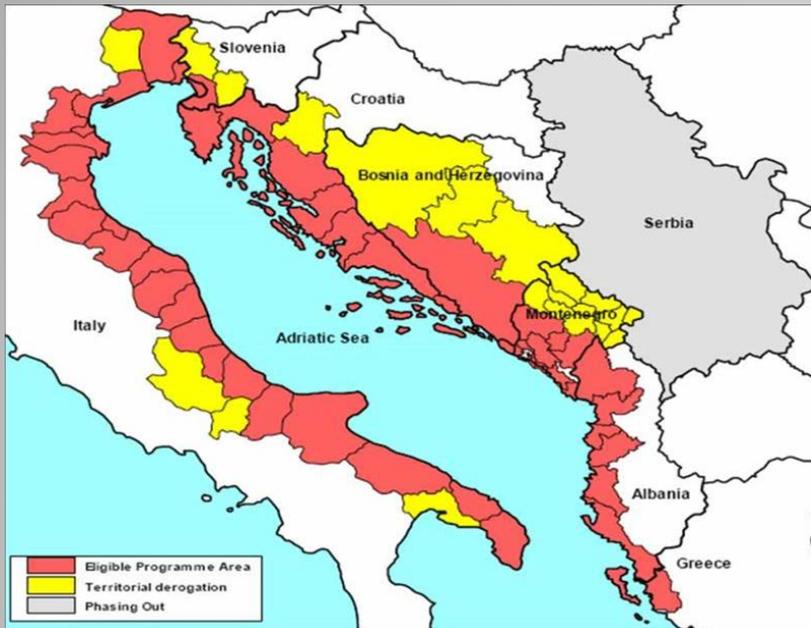
Programs for EE Rehabilitation of Residential Buildings , Programs include building envelope improvements that achieve 30-35 percent reductions in energy use, and apartment-level demand-side improvements .

Energy efficiency funds. EE funds could provide subsidies for implementing EE investments, shortening the payback periods, and help provide access to below-market rate financing where necessary.

**ALTERENERGY PROJECT
BIRTH PROCESS AND
METHODOLOGY**



PROJECT PARTNERSHIP AND TARGET AREA



Adriatic relevance:

A wide partnership covering the whole IPA Adriatic eligible area: **8 Countries, 18 project partners**

Political commitment:

A strong partnership made up by **public administrations and agencies** with specific competences in energy planning

Technical competence:

Planned involvement in project activities of **energy agencies** and/or other **technical bodies**

THE GENERAL AIMS OF THE ALTERENERGY STRATEGIC PROJECT



General Objective:

to contribute towards the European objectives for **2020** by promoting the development of an **Adriatic community** which would be **sustainable** from an energy point of view thanks to a wider use of **renewable energy sources** (RES) and of **energy saving interventions** (RUE)



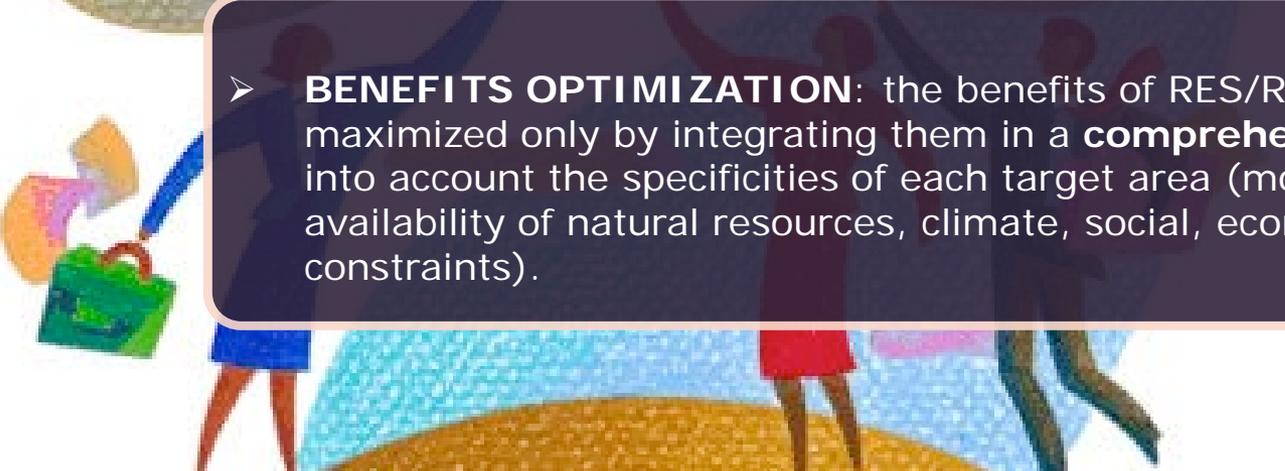
Specific Objective:

to develop replicable models for the **sustainable management** of energy resources in **small Adriatic communities**, improving their capacity **to plan and manage integrated actions** dealing with energy saving and energy production from renewable sources, through a **participated**

of pilot interventions

WHY “SUSTAINABLE MANAGEMENT OF ENERGY ”?

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- **PUBLIC GOVERNANCE:** the transition to a more “sustainable” model of energy use/production is a **complex process** that cannot be left alone to the market.
 - The diffusion of RES/RUE solutions faces economical and social **barriers** that need to be addressed by proper public policies and plans.
 - RES plants are inherently distributed in space and have their own **impact on the environment and the landscape** that must be minimized through careful management of their entire life cycle.
 - The **social acceptance of RES** plants is not guaranteed and often specific groups of interest rise opposition to RES (e.g. farmers, environmental associations, citizens).

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- **BENEFITS OPTIMIZATION:** the benefits of RES/RUE solutions can be maximized only by integrating them in a **comprehensive planning** that takes into account the specificities of each target area (models of energy consumption, availability of natural resources, climate, social, economic and regulatory constraints).

WHY “LOCAL COMMUNITIES”?

- **HIGH DEVELOPMENT POTENTIAL:** RES and RUE technologies and solutions **impact on many sectors** of community life and administration: housing, transports, public lighting and services, farming, industry, territorial planning..

- **LOW GOVERNANCE CAPACITY:** Private interests and availability of public incentives often create a “**pressure**” that local communities are not prepared/equipped to manage.
 - Lack of **knowledge** about energy consumption and availability of energy resources in the communal territory.
 - Lack of **awareness** about RES/RUE potential benefits and related adoption constraints.
 - Lack of energy planning **competences** in local administrations.



WHY “SMALL”?

RELEVANCE:

small communities - in the form of small cities well integrated into their natural surroundings - represent one of the **most diffused modalities of human settlements** in the Adriatic area, hosting an important percentage of the total population.

FEASIBILITY:

sustainable models of integrated energy production and use are **easier to implement in small communities**, given their tighter connection with the surrounding natural resources (e.g. woods and water flows) and the higher relevance of agricultural activities, with their availability of biomasses.

PARTICIPATION:

the relatively low population of typical small Adriatic communities (less than 10.000 inhabitants) creates **better conditions for involving the local population in a participated process of energy use/production paradigm shift: from unaware dependence on fossil fuels and waste of resources to a conscious approach to energy sustainability through RES and RUE.**

ALTERENERGY expected results



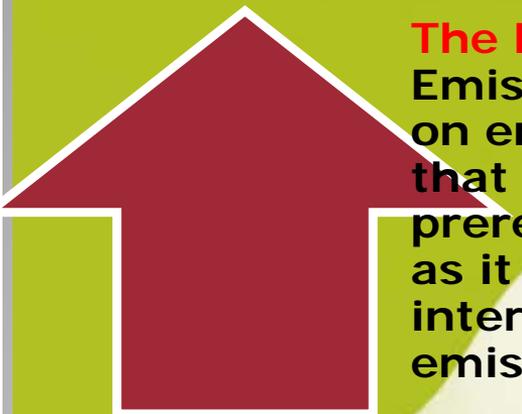
Sharing of **integrated sustainable energy management models**, suitable for the small communities of the Adriatic area

Improved capacity of local communities to plan, implement and manage energy saving and distributed energy production projects/actions

Improved awareness of citizens and economic stakeholders (SMEs, professionals) of the opportunities and benefits related to energy efficiency and energy mix changeover and **diffusion of project results** on a wide European scale

Availability of **reference case studies/best practices** concerning integrated energy sustainability planning and technological solutions integration in selected communities of the Adriatic area (**feasibility studies, pilot interventions**)

THE ENERGY ASSESSMENTS



The Energy Balance, including the Baseline Emission Inventory, provides information on energy requirements and CO₂ emissions that characterize the municipal area. It is a prerequisite for the development of a SEAP, as it allows to identify the most appropriate interventions to adopt in order to reduce emissions.



Benefits to the Municipalities:

Precise monitoring and a better understanding of the factors influencing CO₂ emissions; inputs to defining the environmental and energy policies of the City; the maintenance and consolidation of specific skills needed for inventories

Making things happen (Pilot project in Albania)

Pilot Projects and demonstrative actions selection and realization

This task involves **2 Albania Region**, who will implement realizations we have contributed to establish good practices to be shared in the whole Albania area

This task involves pilot projects, aiming at exploring further funding opportunities for the projects identified in the feasibility studies

A joint assessment of the pilot projects and demonstrative actions is key for the capitalization of the Alterenergy experience and its diffusion towards a broader audience

Project selection

Albania selected 2 Region with the main criteria as follows :

short implementation time:

low implementation risks: all technical, administrative, financial and legal aspects should be completely under control

high visibility and impact: the project should impact multiple dimensions of the community life and should concretely contribute to reduce CO₂ emissions

high potential for replication: the implemented action should contribute to solve problems that are common in the Adriatic small communities.

Description of the investment

This Project has designed with an effort to make a basic understanding on how climate change has impacts in livelihood and to the sustain able development. An attempt has been made to portray importance of energy linkages with climate change adaptation process. It has also attempted to advocate that energy acts as a cross cutting tools to address the vulnerabilities on livelihood, health and environment. Furthermore, development and promotion of Energy efficiency and renewable energy can be found more crucial, when we analyze how and in what way it can contribute in upgrading physical quality of rural population and for sustainable development.

Location Area



Description of Project

Cost of Investment 1.672 Million Euro

Number of public building : 10 Elementary Schools

Project intervention:

Phase no. 1: Energy Efficiency Measures at the building envelope

- Installation of external thermal insulation and roof insulation at the building and also floor thermal insulation (together with the thermal insulation of the floor).
- Supply and installation of new PVC double-glass windows and doors
- Providing supporting energy efficiency measures (which have no direct impact in energy efficiency, but they are necessary to guarantee lifespan of energy efficiency), like: reconstruction of the toilet and internal walls, repairing internal doors, placement of inside doors and painting of all walls.

phase no 2: Heating, solar, and lighting systems

- Supply, installation, commissioning, testing and regular maintenance of a new complete wood/pellets stoves and solar hot water system with a hot water tank for the supply of sanitary hot water
- Supply, installation, commissioning and testing of flat-plate glazed solar collector system at the rooftop of the building, with a hot water tank connected to the sanitary hot water supply system (heated by the boiler).
- Supply, installation, operation of a new energy efficient lighting system to all spaces of the building and also replacement of electrical system of the building

Project Impact

- Energy Saving in thermal insulation: 50%;
- Energy Saving in window 45 %;
- Energy saving in lighting 80 %;
- Increasing flux of lighting 70 %;
- Solar panel for hot water reduce electricity consumption 60 %
- Pay-back of Investment 8 years
- IRR: 11.3%
- Energy consumption before introducing EE measures is 220 kWh/m² year and after including all EE measures is 102 kWh/m².

The environmental benefits of the foreseen energy efficiency measures to be introduced into this school are numerous and include:

- reduction in air pollution
- reduction of GHG emissions equal to 32000 kg per each schools
- use of environmentally friendly materials as replacements for the existing ones (such as window

- Before
(Elementary School) Intervention
- After



(Elementary School)

- Before



- After



(Elementary School)

- After



(Elementary School)

- After



- Before

(Elementary School)



- After



- Before

(Elementary School)

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- Before

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- After



(Elementary School)

- After



Thank you

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