

# ZEROCO2

Interreg Europe

ZEROCO2 aims at implementing near zero CO2 emission buildings due to energy use and improving regional energy policies with regard to environmental sustainability and mitigation of climate change risks.

[www.interregeurope.eu/zeroco2](http://www.interregeurope.eu/zeroco2)

An interregional cooperation project for improving low-carbon economy policies

#### Project Partners

European Institute for Innovation (DE)  
Mediterranean Agronomic Institute of Chania (EL)  
Thermopolis Ltd. (FI)  
A.VI.TE.M – Agency For Sustainable Mediterranean Cities and Territories (FR)  
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Local Councils' Association (MT)  
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**Local Energy Agency Spodnje Podravje (SI)**





# Promotion of near zero CO2 emission buildings due to energy use

## ACTION PLAN

**Molise Region –**

Regional Operational Programme ERDF-ESF Molise 2014 - 2020



## TABLE OF CONTENT

1.	INTRODUCTION .....	4
2.	REGIONAL ANALYSIS.....	5
2.1	Presentation of the Molise Region .....	5
2.2	Potential of using RES in Molise Region .....	8
2.3	Policies already promoting use of RES and EE: .....	9
2	MARKET NEEDS REPORT - TOWARDS ZERO CO <sub>2</sub> EMISSION BUILDINGS.....	10
3.1	Introduction.....	10
3.2	Current Funding Opportunities .....	10
3.3	Policy background .....	12
3.4	EU and national regulation framework .....	12
3.5	Regional regulatory framework.....	15
3.6	Current Local and Regional Investment Projects .....	17
3.7	Policy/Funding Compatibility .....	22
3.7.1	Market needs.....	26
4	POLICY CONTEXT (summary of the action plan, full document is available in Italian language) ..	28
4.1	ACTION 1 .....	28
4.2	ACTION 2 .....	29
4.3	ACTION 3 .....	31
4.4	ACTION 4 .....	32

## 1. INTRODUCTION

The aim of the project is to improve regional energy policies with regard to environmental sustainability and mitigation of climate change risk, with a special focus on greening the building sector through enhancement of various eco-friendly energy sources and technologies, stressing its importance as an incubator for new markets in the field of energy, technologies, services and business models.

The project represents and implements NEAR ZERO CO<sub>2</sub> EMISSION BUILDINGS DUE TO ENERGY USE in policies addressed at the same level as had been done for NEAR ZERO ENERGY BUILDINGS, which means that the buildings do not produce CO<sub>2</sub> emissions due their use. EU, national and regional policies do not define near zero CO<sub>2</sub> buildings due to energy use.

## 2. REGIONAL ANALYSIS

### 2.1 Presentation of the Molise Region

<b>Name of the region</b>	Molise
<b>Country</b>	Italy
<b>Area</b>	4.438 km <sup>2</sup>
<b>Population</b>	
--- <b>Number</b>	312.027
--- <b>Density</b>	70,31 inhabitants/km <sup>2</sup>

Molise is a region of southern Italy, predominantly mountainous and without plains. Molise is the 19th (penultimate) Italian region by size, bordered by: Abruzzo Region to the North, Lazio Region to the West, Campania Region to the South and Apulia Region to the Southeast; the Region has its Northeast coastline on the Adriatic Sea but for a short stretch, only 35 km of coastline.

Although the Molise is a small region, it has different climates on its surface. In the West, 100% of the Molise territory is mountainous and the climate above 800 meters on the sea level, is a temperate cold typical mountain climate that makes the summers warm and bearable and the winters rigid and snowy.

In the east part of Molise, the climate is different, there is a Mediterranean climate with hot temperate summers and fresh winters. The overwhelming majority of the Municipalities of Molise fall into the climatic zones 'D' and 'E' with very few climates in the climatic zones 'C' and 'F'.

The final energy consumption trend in Molise in the period 2000-2013 marks a decline of about 98 ktep, which is a contraction of 14.9% compared to gross final consumption registered in the year 2000.

The overall trend shows a clear discontinuity starting in 2005, when the historical peak of consumption (749 ktep) recorded a sharp decline, due to the economic crisis. The minimum period of time was touched in 2013 (-25.8% compared to 2005) reaching 556 ktep.

## **Solar energy**

Up to 31 December 2013 In Molise, there were 3,235 photovoltaic plants operating for a total gross power of 174.6 MW.

The 68% of Molise plants are installed on the ground, 27% are installed on buildings, 3% are installed on greenhouses or shelter and 2% are installed on other types of structural supports.

Photovoltaic installations represent, overall, 7.5% of the power installed in Molise and in 2013 they recorded a gross total output of 216.8 GWh.

The percentage distribution of photovoltaic plants per business area is as follows: 14% agriculture; 67% industry; 11% tertiary; 8% domestic.

## **Biomass**

In the Molise Region the primary used resources are largely internal; in 2013 they amounted to 478 ktep of 700 ktep, corresponding to 68.3% of the total. Among the renewable primary resources, bioenergy covers a share of 54.3% (119 ktep of 219 ktep totals).

These resources, for 81 ktep, are represented by thermal energy derived from biomass and for 38 ktep from other forms of bioenergy. Biomass is widely used in domestic heating.

## **Wind power**

In Molise, up to 31 December 2013, wind power plants were operating for a total gross power of 369.5 MW. These plants, in 2013, produced 683.3 GWh.

## **Hydro energy**

In Molise, up to 31 December 2013, hydroelectric plants were operating for a total gross power of 87.2 MW. These plants, in 2013, produced 271.1 GWh.



## 2.2 Potential of using RES in Molise Region

From the preliminary studies for the implementation of the Regional Environmental Energy Plan emerge the following potentialities:

			Energy saving (Ktep/year)	Source production Renewable (Ktep / year)
<b>1</b>	Tax deductions and energy efficiency in the civil sector	hypothesis 1	1,5	0,18
		hypothesis 2	3,18	0,24
		hypothesis 3	4,14	1,8
		hypothesis 4	9,96	3
<b>2</b>	Energy efficiency titles	Civil and industrial	52,5	0
<b>3</b>	SUSTAINABLE ENERGY ACTION PLAN	Tertiary	5,6	0,89
		Residential	14,97	6,38
		Industrial	3,09	0,39
		Transportation	11,7	0
<b>4</b>	Bioenergy	Woody biomass (Replacements)	1	-1
		Woody biomass (new installations)	0	10,1
		Bioliquids	0	0,62
		Biogas	0	0,62
<b>5</b>	Hydroelectric		0	6
<b>6</b>	Wind energy		0	52,6
<b>7</b>	Photovoltaics		0	3,2
<b>8</b>	Industry		9	0
<b>9</b>	Transportation		16	0
<b>10</b>	Cogeneration in hospitals		1,17	0
	TOTAL		121,99	82,52



### 2.3 Policies already promoting use of RES and EE:

Name of the policy	Area that it covers (Local, regional, national)	Actions that are promoted	For which sector is it meant	Type of support (subsidy, ...)
Energy Efficiency in Production Activities	Molise Region	Energy efficiency of buildings and installations	SME	
Energy Efficiency in Public Authorities	Molise Region	Energy Efficiency of Buildings	PUBLIC ENTITIES	
Energy Efficiency in Public Authorities	Molise Region	Energy Efficiency of Public Lighting	PUBLIC ENTITIES	

## 2 MARKET NEEDS REPORT - TOWARDS ZEROCO2 EMISSION BUILDINGS

### 3.1 Introduction

This document is part of the European ZEROCO2 project. It offers the possibility of understanding the state of the art in terms of energy efficiency in the Molise regional context, as well as the opportunities and the potential to carry out energy efficiency measures on existing plants and/or buildings or to design in the most efficient way possible those of new construction. For this purpose, the following paragraphs will show the regulatory situation at the Community, National and Regional levels, describing what are the current opportunities to access to loans that incentivize the efficiency of the plants and what are the foreseen opportunities in the near future. In relation to the various types of loans, the procedures to access to finance, what conditions must be met and what are the difficulties that could be faced to meet them will be briefly described. Finally, the document concludes with a technical opinion on the actual needs of the regional energy market, on the need to allocate new funds or incentives on taxation, on the applicability of the ZEROCO2 concept to different types of buildings and how it can help to achieve the regional targets for climate-altering emissions.

### 3.2. Current Funding Opportunities

The Molise region provides a set of tools for the realization of its energy policy (PEAR) aimed at removing barriers for the coherent development of energy efficiency solutions and renewable energy sources. At present the incentives for the realization of the financed activities are:

- TEE (Titoli di Efficienza Energetica - Energy Efficiency Certificates). The mechanism encourages heating systems within the CIV-T intervention category (hot/cold production, domestic hot water production) and with the D.M. 05/09/2011 there was also the recognition of the TEEs for CAR (Cogenerazione ad Alto Rendimento - high-performance cogeneration); the D.M. 11/01/2017, instead,

updates the access conditions to the economic support, specifying that the release of the TEE is commensurate with the primary energy savings achieved for each year in which the requirements are met;

- “Conto Termico 2.0”, which finances the production of thermal energy from RES plants and the increase in energy efficiency; we are awaiting a revision of the D.M. which enhances the effectiveness of the mechanism through its simplification, the extension of the type of interventions admitted to the incentive, the adjustment of the level of the incentive;

- incentives for electric renewables;

- tax deductions (ecobonus for energy redevelopment, deductions for building renovations);

- national fund for energy efficiency, aimed at the redevelopment of buildings in public administration and residential buildings, the realization of district heating networks, the efficiency of public lighting, the reduction of energy consumption in industrial processes; a total amount of 480 million Euros will flow to the revolving fund at the national level for the 2014-2020 period;

- fund for the redevelopment of school buildings, which allocated a total amount of 350 million Euros from the former Kyoto fund for the subsidized rate financing of energy redevelopment projects for schools and universities.

The 2014-2018 European programming funds to draw on to finance sustainable energy projects are:

- Horizon 2020: around 6 billion Euros for innovation projects in the fields of energy efficiency, low carbon technologies, smart cities and communities;

- Connecting Europe Facility: about 6 billion Euros for investments in energy infrastructures (networks) with high added value;

- Cohesion funds: around 23 billion Euros for investments in energy efficiency, renewable energy sources, smart grids and urban mobility, including research and innovation in the complementary areas of Horizon 2020.

### 3.3 Policy background

The regional regulatory activity on energy strategy is part of a comprehensive framework that includes the EU directives on energy efficiency (2012/27/EC), on the development of RES, renewable energy sources (2009/28/EC), on the buildings' energy performances (2010/31/CE) and the National Energy Strategy (SEN) approved by the Ministry of Economic Development (MiSE) and the Ministry of Environment and Protection of the Territory and the Sea (MATTM) by Interministerial Decree of the November 10<sup>th</sup>, 2017.

### 3.4. EU and national regulation framework

In 2008, the European Union launched the "Climate-Energy Package 20-20-20" with the following energy and climate targets for 2020: - 20% reduction in greenhouse gas emissions compared to 1990; - increase in energy efficiency to achieve a reduction in the use of primary energy in terms of 20%;

- obtain 20% of energy from renewable sources on the total energy consumption of the European Union.

Each Member State will have to contribute to achieve this target and for each of them a specific rate has been decided, which in the case of Italy is set to 17%. On January 22<sup>nd</sup>, 2014 on a European Commission's press release was indicated the new EU strategic framework for climate and energy for 2030. The objectives are overall less demanding than required for 2020:

- reduction in greenhouse gas (GHG) of 40% compared to 1990 levels;

- renewable energy sources rate of 27%;

- improvement in energy efficiency (27%).

At Community level, a new governance will be introduced that asks Member States to define each year their respective national energy and climate plans, assessed and monitored by the European Commission with the aim of achieving a low carbon European economy by 2050, through the 80-95% reduction in greenhouse gas emissions compared to 1990. The Energy Roadmap 2050 sets a decarbonised economy as long-term target, to which all sectors must concur, the energy sector, the construction, industry, transport and agriculture within a new energy model, based on

completely different principles and methods than the current one. Only if we are able to produce zero-impact energy will we have a significant reduction in the overall level of emissions, compatible with the less catastrophic scenarios related to climate change. Among the pillars on which the new energy model envisaged by the Roadmap 2050 is based, there is still energy efficiency, the reduction of final energy consumption and the increase in the rate of energy produced from renewable sources. To achieve the results defined in particular in:

- Directive 2009/28/EC on RES (implemented by Legislative Decree 28/2011),
- Directive 2010/31/EC on the energy performance of buildings (Recasting of the EPBD directive),
- National Energy Strategy (SEN, 2017),

the actions to be carried out must be multiple and coordinated. First of all, it is necessary to complete the process of liberalization of the electricity and gas sector, promote energy efficiency and develop the use of renewable sources in a sustainable and coherent way, with the aim of consistently diversifying the mix of energy sources. In accordance with the indications of European directives and regulations and with reference to individual energy sectors (electricity, gas, renewables, etc.), various energy planning and guidance tools have been arranged:

- National Action Plan for Renewable Energies (PAN), foreseen by the Directive 2009/28/EC, is a planning document that defines the detailed indications to achieve by 2020 the objective assigned by Europe, binding for Italy, to cover gross national consumption with energy produced from renewable sources. The Italian National Action Plan, transmitted to the European Commission on July, 28th 2010, illustrates the strategy in the development of renewable energy sources and draws the main action lines for each area of intervention (Electricity, Heating-Cooling and Transport) on the overall gross energy consumption. It also contains all the measures (economic, non-economic, support and international cooperation) necessary to achieve the objectives;
- on March, 28th 2011, the Legislative Decree n.28 dated 03/03/2011 was published in the Official Gazette for the implementation of Directive 2009/28/EC on the development of renewable sources, which indicates the means and operational

mechanisms for the implementation of methodologies for the development of renewables and progress in energy efficiency;

- Ministerial Decree of March, 15th 2012 (Burden Sharing) for the definition and the qualification of the regional target concerning renewable sources and definition of the methods for managing cases of failure to achieve the objectives by the regions;

- Legislative Decree 387/2003 on the promotion of electricity produced from renewable sources in the internal electricity market;

- Ministerial Decree of September, 10th 2010 concerning the National Guidelines for the authorization of plants powered by renewable sources, where it was explicitly stated in point 1.2 that "only the regions and the autonomous provinces can place limitations and prohibitions in acts of planning type for the installation of specific types of plants powered by renewable sources" according to particular parameters, thus giving the possibility to Regions to regulate the matter in detail; the regions can identify areas or sites not suitable for the installation of plants powered by renewable sources;

- Action Plan for Energy Efficiency (PAEE), which, in implementation of Legislative Decree no.115/2008, describes the energy efficiency targets set by Italy to 2020, in particular the national consumption targets for the reduction of primary and final energy, and specifies the savings in the final energy uses expected by 2020 for each economic sector; the most recent version of the PAEE is dated 2014;

- Legislative Decree 192/2005 implementing Directive 2002/91/EC on the buildings' energy performance;

- Legislative Decree 115/2008, implementing Directive 2006/32/EC on energy end-use efficiency and energy services;

- Legislative Decree 102/2014, implementing Directive 2012/27/EC on energy efficiency;

- Legislative Decree 30/2013, implementing Directive 2009/29/EC in order to improve and extend the Community system for the exchange of greenhouse gas emission quotas.

### 3.5. Regional regulatory framework

Art. 3 of the Regional Law n.10 of April, 17th 2014 regulates the Molise region's statute in territorial and environmental matters, guaranteeing the promotion of a regional planning respectful of the rural, environmental, landscape and architectural patrimony, taking care in particular of the following aspects:

- a) application of territorial governance criteria inspired primarily by protection against seismic and hydrogeological risk and the environmentally friendly use of environmental and natural resources;
- b) enhancement of their territories and water and forest patrimony, as well as the protection of the specific features of mountain and hilly areas and biodiversity.

In addition, the region adopts protection policies of the environment from all forms of pollution.

A possible conflict, however, can arise between the interest of landscape-environmental protection and the need to have energy from renewable sources; it is true that the reduction of harmful emissions through the use of renewable energy sources is the subject of international commitments assumed by the Italian State in the Community, but it is also true that the preservation of the landscape is the subject of international commitments (such as the European Convention Landscape).

Therefore, the environmental interest can not replace and environmental interest that ensures its protection at all costs, through the development of renewable energy plants that however have a serious and irreversible landscape impact. In other words, the conflict between landscape protection and protection of the environment and health can not be resolved a priori but must be considered only after a thorough comparative assessment of all the interests involved, including costs (also environmental), the benefits that they are obtained and the economic business law. European Directive 2009/28/EC has required Member States to identify simplified authorization procedures with an appropriate administrative level. The National Guidelines (approved by Ministerial Decree 10/09/2010), while respecting the autonomy and competences of local administrations, have been issued in order to harmonize regional procedures for the authorization of electricity production plants powered by renewable energy sources. In particular, point 17 of the Guidelines specifies the methods for

identifying unsuitable areas for the installation of plants by the Regions and refers to Annex 3 of the M.D. for a further definition of the criteria to identify them. The unsuitable areas are, therefore, identified by the Regions within the planning act which defines the measures and interventions necessary to achieve the Burden Sharing objectives set in the regional distribution of the RES rate, following a specific inquiry. Legislative Decree 28/03 introduced measures to simplify and rationalize the administrative procedures for the construction of plants powered by renewable sources, both for the production of electricity and for the production of thermal energy. Also the subsection 10 of article 12 of the Legislative Decree 387/2003 includes that the Regions, in implementation of the Guidelines on the single authorization procedure, can identify areas not suitable for the installation of specific types of plants. With regard to the new initiatives in the field of renewable energy, in 2014 two Regional Council resolutions were adopted, aimed at the local development of these plants in the Molise region: - D.G.R. n.33 of February, 10th 2014 "Integrated Local Development Strategy in Molise - Territorial Planning 2007-2013: Program Agreement PAI Crater 01 and Approval Implementation Program of interventions - European Regional Development Fund 2007-2013 (FESR)"; - D.G.R. n.31 of the same day and year "Regional Operational Program (POR) FESR 2007-2013 - Update of the FESR POR 2007-2013". Another relevant measure in this regard is the D.G.R. n.19 of January, 24th 2014 on 2014-2020 Programming on "ex ante" conditionalities, to be considered as the Act of Address of the Molise region, which contains all the objectives that the Region sets itself, subdividing them by thematic areas. The regulatory framework is complete: - R.L. n.23 of October, 20th 2004, construction and management of protected natural areas;

- D.G.R. n. 889 of July, 29th 2008, implementation of the D.M. n.394 of October, 17th 2007, "Uniform minimum criteria for the definition of conservation measures related to Special Areas of Conservation (ZSC) and Special Protection Areas (ZPS)"; - D.G.R. n. 1074 of January, 26th 2009, Adoption of guidelines for the conduct of the single procedure concerning the installation of plants for the production of electricity from renewable sources in implementation of the PEAR and Regional Law n. 22 of August, 7th 2009; - R.L. n. 22 of August, 7th 2009, regulating plant installations (art.2 areas not suitable for the installation of electricity production from renewable sources plants, art.3 places where it is allowed); - R.L. n. 23 of December, 16th 2014, "Urgent measures on renewable energy matters" (art.1 areas of interest for installation); - R.L. n. 30 of



December, 11th 2009, Extraordinary regional intervention aimed at relaunching the building sector, promoting green building techniques and the use of alternative and renewable energy sources, as well as supporting social housing for the disadvantaged categories and the school building and s.m.i. (R.L. 7/2015); - R.L. n. 4 of May, 4th 2016 "Regulation related to the 2016-2018 financial measures on revenue and expenses. Modifications and additions to regional laws", which in art. 26 amended the Regional Law n. 23 of December, 16th 2014 (Urgent measures on renewable energy matters).

### 3.6. Current Local and Regional Investment Projects

The most used ongoing investments in energy efficiency and renewable energy sources, proposed at national level and implemented at regional level are 3:

#### 1. Tax deductions – Energy efficiency (Ecobonus):

The law n. 205 of 27 December 2017 has extended the tax deductions for the energy redevelopment of buildings. It's possible to benefit from the bonus:

- for expenses about interventions on individual property units incurred by December 31, 2018;
- for expenses about interventions on common parts of buildings incurred by December 31, 2021;

For the energy redevelopment interventions carried out in the individual property units, different rates of deduction are envisaged based on the intervention carried out, in order to link the economic benefit to the energy savings achievable. For the energy redevelopment interventions carried out in the common parts of the condominium buildings, the increase of the deduction rates are confirmed: 70% for interventions involving at least 25% of the building exterior and 75% for interventions aimed at improving the winter and summer energy performance that meet "average quality" of the exterior, with a maximum limit of 40,000 Euros for each housing unit.

For all the interventions, it is possible to opt for the assignment of the credit to the suppliers who have carried out the interventions or to other private subjects. The assignment of credit to credit institutions and financial intermediaries is limited to incapable subject. Among the other innovations introduced, in the eligible interventions, the installation of micro-cogeneration plants is now included and the

establishment, within the National Energy Efficiency Fund, of a section dedicated to the promotion of eco-loans through the granting of guarantees on loans granted by credit institutions to citizens for the energy requalification of buildings.

## 2. Conto termico 2.0:

Conto termico 2.0 incentives interventions to increase energy efficiency and the production of thermal energy from renewable sources for small plants. The beneficiaries are mainly the Public Administrations, but also businesses and individuals, who will have access to 900 million Euros/year funds, 200 of which will be allocated to the PA. Thanks to Conto termico 2.0 it is possible to redevelop buildings to improve their energy performance, thus reducing consumption and quickly recovering part of the costs incurred. In addition to the expansion of the access mode and of the admitted subjects (including in-house companies and inhabitants' cooperatives among the Public Administration), new energy efficiency measures are proposed. The size of the eligible plants was also revised and the direct access procedure for equipment with features already approved and certified has been simplified. The maximum limit for the supply of incentives in a single payment is 5,000 Euros and payment times are approximately 2 months. According the conditions and the procedures set out in the Interministerial Decree of February, 16th 2016, the following measures to increase energy efficiency in existing buildings, parts of existing buildings or existing buildings of any cadastral category equipped with air conditioning are incentivized:

- thermal insulation of opaque surfaces delimiting the air-conditioned volume;
- replacement of transparent closures including fixtures delimiting the air-conditioned volume;
- replacement of existing winter air-conditioning systems with winter air-conditioning systems using condensation heat generators;
- installation of not transportable shielding and/or shading systems for transparent closures with exposure from East-South-East to West;
- transformation of existing buildings into "near zero-energy buildings";
- replacement of systems for interior lighting and external appliances of existing buildings with efficient lighting systems;

- installation of management and automatic control technologies (building automation) of the thermal and electrical systems of buildings, including the installation of heat regulation and heat metering systems.

In addition, according to the conditions and the procedures defined in the same Decree, the following measures of small scale production of thermal energy from renewable sources and high efficiency systems in existing buildings, parts of existing buildings or existing real estate units of any cadastral category, equipped with air conditioning system, are incentivized:

- replacement of existing winter air-conditioning systems with winter air-conditioning systems, also combined for the production of domestic hot water, equipped with heat pumps, electric or gas, using aerothermal, geothermal or hydrothermal energy, together with the installation of heat metering systems in the case of plants with a useful thermal power of more than 200 kW;

- replacement of existing winter air-conditioning systems or heating of greenhouses and existing rural buildings with winter air-conditioning systems equipped with a biomass-powered heat generator, together with the installation of systems for heat metering in the case of plants with useful thermal power more than 200 kW;

- installation of solar thermal systems for the production of domestic hot water and/or integration of the winter air-conditioning system, also combined with solar cooling systems, for the production of thermal energy for production processes or introduction into district heating and cooling networks. In the case of solar field surfaces of more than 100 m<sup>2</sup>, the installation of heat metering systems is required;

- replacement of electric water heaters with heat pump water heaters;

- replacement of existing winter air-conditioning systems with hybrid heat pump systems.

### 3. Certificati bianchi:

Certificati Bianchi (CB), or Titoli di Efficienza Energetica (TEE - Energy Efficiency Certificates) are negotiable bonds that certify the energy savings achieved in the final uses of energy, implementing measures to increase energy efficiency. The CB system is an incentive mechanism based on a mandatory primary energy saving scheme for electricity and natural gas distributors with more than 50,000 end customers. For each

mandatory year, from 2017 to 2020, the savings targets that distributors have to achieve through the implementation of energy efficiency measures have been set. The obliged parties can fulfill the savings rate obligation in two ways:

1. realizing directly or through the companies controlled by them, the energy efficiency projects admitted to the mechanism;
2. buying the bonds from other subjects admitted to the mechanism, or other distributors, certified ESCo or public or private end users who have appointed a certified EGE.

A certificate is awarded for each OET (Oil Equivalent Tonne) of savings owing to the implementation of the energy efficiency intervention. The duration of the certificate is established equal to the entire useful life of the project, defined by the norm for each type of project from 3 to 10 years. The volunteers and the obliged subjects exchange the CBs on the market platform managed by GME or through bilateral negotiations. The results to be achieved each year are: 2017: 7.14 Million OET; 2018: 8.32 Million OET; 2019: 9.71 Million OET; 2020: 11.19 million OET. The target include the interventions associated with the issue of CB, energy from High Performance Cogeneration (CAR), the interventions that continue to generate savings even after the end of the useful life and the efficiency measures carried out under the D.M. 106 of 20/05/2015. The eligible energy efficiency projects are defined in Annex 2 of the Interministerial Decree of January, 11th 2017, and are shown below by type of intervention.

- Industrial sector:

- Installation of thermal energy production plants;
- Installation of systems for the treatment of gaseous effluents;
- Installation of hot air generators;
- Installation of components for heat recovery, if not technically possible in the ex-ante situation, also for use in district heating and/or district cooling networks;
- Installation of mechanical steam recompression systems;
- Installation of dryers;
- Installation of regenerative burners;
- Installation of electric motors;

- Installation of cooking ovens;
- Installation of melting furnaces;
- Installation of pre-heating ovens;
- Installation of high temperature radiant systems for the air-conditioning of industrial environments;
- Installation of compressed-air production plants;
- Installation of power quality systems;
- Installation of refrigeration units and heat pumps, including freezing and refrigeration systems;
- Installation or retrofit of lighting systems;
- Energy recovery in LNG regasification systems;
- Installation of non CHP trim Organic Rankine Cycle (ORC) systems, not fed by heat produced by electricity production plants.
  - Networks, services and transport sector:
    - Efficiency of existing district heating and/or cooling networks;
    - Laying district heating and/or district cooling networks;
    - Installation of boilers for district heating and / or district cooling networks;
    - Purchase of fleets of vehicles with electric traction, natural gas, LNG, LPG, hybrid or hydrogen;
    - Energy efficiency of vehicles powered by fossil fuels, including naval transport;
    - Efficiency of electricity, gas and water networks;
    - Installation of electric motors;
    - Creation of CED;
    - CED efficiency;
    - Creation of base radio and landline stations;
    - Efficiency of base radio and landline stations;
    - Installation or retrofit of public lighting systems;
    - Installation of power quality systems;
  - Civil sector:
    - Installation of boilers and hot air generators;

- Installation of refrigeration unit systems and heat pumps for air conditioning environments;
- Thermal insulation of opaque dispersing surfaces of buildings;
- Retrofit and new construction of "near zero energy buildings";
- Installation or retrofit of private lighting systems;
  - Behavioural measures:
- Adopting efficient signalling and management systems;
- Adoption of data analysis systems on the consumption of individual plants, utilities and vehicles;
- Adoption of initiatives aimed at the use of low emission vehicles.

### 3.7 Policy/Funding Compatibility

The purpose of this paragraph is to describe the conditions to be met to access the loans currently active in the Molise Region, those described in paragraph 4 above, as well as the difficulties that may be faced to access them and the access modalities. This analysis, to allow greater clarity, will be carried out separately for each type of incentive previously described.

#### 1. Tax deductions – Energy efficiency (Ecobonus):

The conditions to be met to access this type of subsidy are fundamentally bureaucratic and mainly concern the delivery of documentation. The steps necessary to benefit of the facilitation have been simplified over the years, in particular with the incoming of the decree on tax simplifications (Legislative Decree N. 175 of November, 21st 2014). The current obligations for the facilitation applicant are:

- forwarding to the Local Health Authority, competent for the territory, of the communication, with a series of information regarding the works carried out, such as the generality of the client and the executor of the works as well as location, nature and timing of the operation to be carried out;
- -execution of payments by bank or postal transfer by taxpayers who do not hold business income (cash criterion); this obligation does not exist for taxpayers holding business income (competence criterion);

- acquisition of some documents, such as the asseveration that shows that the intervention carried out complies with the technical requirement; the energy performance certificate (or qualification) that includes data about the energy efficiency of the building; the information sheet relating to the interventions carried out;
- transmission to ENEA, within 90 days from the end of the works of the copy of the energy performance certificate and the information sheet related to the interventions carried out.

## 2. Conto termico 2.0:

- Also for this type of facilitation the conditions to be met to access are mainly of a bureaucratic nature and concern the delivery of documents. Unlike the tax deduction, however, the intervention to be carried out, or has been carried out, must receive the approval of the GSE (Energy Services Manager) before being able to enjoy the financing. This means that the access procedure, but above all the waiting time, are slightly different.
- For the purposes of access to incentives, the responsible subject submits an application form to the GSE through the application form, made available by the GSE itself via the web portal "Portaltermico". The application form clearly indicates the type of intervention performed and the total eligible expenditure for the implementation of the intervention. It is signed by the responsible subject and contains information on the technical documentation as well as the economic information produced on the property and the installed components. In particular:
  - certificate of energy performance and energy diagnosis, where required pursuant to Article 15, subsection 1 of the Interministerial Decree of February, 16th 2016;
  - datasheets of the components or equipment installed, as supplied by the manufacturer, showing compliance with the technical requirements;
  - asseveration of a qualified technician who certifies the correct sizing of the heat generator and the correspondence of the intervention to the technical and performance requirements;

- invoices showing the costs incurred for the interventions involved in the incentive request and the related receipt of the bank or post transfer payments, showing the reason for payment, the tax code of the responsible subject and the tax code and the lot number VAT of the subject in whose favor the transfer is made;
- documentation attesting the obtainment of the authorization title, where envisaged;
- declaration of conformity of the plant, where required, in accordance with article 7 of the Minister of economic development Decree n. 37 of January, 22nd 2008, compiled by an installer having the professional requirements referred to in Article 15 of Legislative Decree 28/2011;
- certificate of the correct disposal of the plants replaced and disposed, where foreseen;
- certificate issued by the manufacturer certifying compliance with atmospheric emission levels, for the application of the bonus factor, in relation to the type of installation, where required.
- In case of acceptance of the reservation by the GSE, the same GSE proceeds to commit to the applicant the sum corresponding to the incentive due to be understood as a budget ceiling; in case of a negative result, the request is rejected, giving communication of the motivations to the responsible subject.
- Within 60 days of receiving the communication of the start of works, the GSE carries out the technical-administrative investigation of the documentation received and, if the conditions are met, after signing the contract-booking form (accepted online while filling out the request for access to incentives), dispenses the down payment; at the end of the works, after sending the request and carrying out all the required formalities, the balance is paid out. The installment is paid within 60 days from the signing of the contract-booking form, for an amount equal to 2/5 of the incentive for interventions for which provision is made in 5 years, or equal to 50% in the case in which the expected duration of the incentive is 2 years. At the end of the work, the GSE will issue the remaining part of the incentive in a single payment on balance within the



last day of the month following the two-month period of the contract-booking form acceptance date. The amounts relating to the balance of the incentive will be disbursed net of the fee to cover the costs incurred for carrying out the preliminary activities.

### 3. Certificati bianchi

- The documentation to be transmitted during the presentation of the projects for access to the Certificati bianchi must contain, under penalty of inadmissibility, the information listed below, rendered in substitutive form of a deed of notice pursuant to the D.P.R n. 445/2000:
- information relating to the proposing subject (name or company name, address, role and activities carried out within the project) and the owner, if different from the proposer;
- information relating to the plant, building or site where the project is carried out (address, cadastral code, activities carried out within the project, ATECO code if applicable) including information on the owner of the plant or site;
- descriptive report, accompanied by appropriate documentation, containing:
  1. detailed description of the project, with reference to the types of intervention that compose it, including the related significant design documentation;
  2. proposal to determine the consumption of baseline and additional energy savings, making clear the used criteria;
  3. assumptions made for the standardization of the energy savings achieved;
  4. description of the measurement program that is intended to be used for the evaluation of primary energy savings, including the expected savings, the description of the algorithm for calculating savings and the instrumentation used, purifying consumption, through appropriate adjustments, from any effects of factors not related to the project;
  5. measurement of energy consumption in the pre-intervention situation and the estimate post-intervention consumption;

6. indication of the costs related to the installation of measuring equipment dedicated to individual interventions;
  7. for statistical purposes, estimate of the costs strictly linked to the energy efficiency project that will incur for the realization and management of the project;
- copy of the energetic diagnosis of the site or sites involved in the intervention, if existing;
  - documentation certifying the technical characteristics of the systems and technologies that make up the energy efficiency project and the reference design;
  - declaration certifying any economic contributions of any kind already granted to the same project by State, Regional or Local public administrations as well as by the European Union or international organizations;
  - suitable documentation proving that the proposed project has not yet been carried out at the date of submission of the request;
  - in the event that the proposing subject or the project owner is a subject obliged to appoint the person responsible for the conservation and rational use of energy pursuant to art. 19 of the law n. 10 of January, 9th 1991, suitable documentation proving the successful appointment for the current year. This requirement must be respected throughout the useful life of the project and may be subject to verification during the inspection.

### 3.7.1 Market needs

Given the extension of the Region and the amount of both local and national resources, the current incentive action can be considered adequate. In fact, funds have already been allocated by the Molise Region, aimed at energy efficiency. However, only a part of these is currently on a call for tenders and therefore actually usable.

To maintain constant and effective action of improving the energy status of buildings in the area, it is necessary that all the allocated funds will be used in the short term for the implementation of energy efficiency actions. The ZEROCO2 concept, due to its structure, is suitable for implementation to all types of buildings and the idea of applying the concept in public buildings can be an advisable starting point. Starting projects that

aim to achieve the NZCO2EB target in public buildings, for example in schools, can be an excellent example of good practice for the whole community. This not only regarding the project itself, but also, and maybe above all, in relation to the users of such structures. Instructing young students to conscientious use of the energy sources and, at the same time, making them aware of the feasibility of these good practices, could develop an energy consciousness that leads to always greater application of these practices in private, exponentially increasing the benefits derived from them. From an economic point of view, this objective can be reached both with public or private funds. The current incentives described in the previous paragraphs are of great interest, for example for the ESCo, which, getting the income due to the perception of the incentive, are strongly encouraged to invest in energy efficiency, laying the foundations for strong partnerships, both public/private and private/private. One of the objectives of the ZEROCO2 concept and its implementation policy should therefore be to ensure greater visibility to the ESCo and to increase the number of users aware of these possibilities. This could increase awareness among the citizens that getting better results, approaching the concept of NZCO2EB, isn't only a positive step for the environment and doesn't just allow us to achieve the results imposed by the European Union, but it is not even particularly burdensome at the economic level. Regarding the targets to be achieved in terms of emissions, the Molise Region already uses technologies that can meet the limits imposed by Europe, but this does not mean that the application of new and more performing technologies in the ZEROCO2 concept can improve further the situation that is already abundantly below the limits imposed.

## 4 POLICY CONTEXT (summary of the action plan, full document is available in Italian language)

- 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 Program ERDF ESF Molise 2014-2020**

### 4.1 ACTION 1

#### Background

The Molise Region has obtained the result of 35% of energy production from RES, set for 2020 by Burden sharing, already in 2013. For this reason, the ambitious objective of reaching the production threshold for RES by 50% of gross final consumption was set for this date.

With this in mind - together with the desire to increase the energy efficiency of buildings (which are responsible for 40% of global energy consumption in the European Union) and to reduce their energy consumption and their greenhouse gases' emissions - on the basis of the notions of the technical-economic trend in Europe acquired through the participation in the ZEROCO2 project, the Molise Region has already budgeted in its 2017 ROP the following Action.

#### Action

Publication of calls that incentive the installation of renewable sources energy production systems for own use associated with interventions to improve energy efficiency by giving priority to the use of high-efficiency technologies. The interventions that can access this funding are therefore all those aimed at the production of energy

from renewable sources, as long as it's for self-consumption, and those for energy efficiency aimed at reducing emissions of climate-altering gases. As an example:

- Installation of photovoltaic systems, mini and micro wind plant, solar thermal;
- Installation of CHP and CCHP plants;
- Thermal insulation of buildings to reduce losses;
- Retrofit of air conditioning and lighting systems.

### **Players involved**

The players involved in the development and implementation of this Action are more than one, primarily the Molise Region as the promoter of the Action. Direct beneficiaries will be all the subjects, both public and private, who intend to perform energy efficiency measures that, adjusting and making more efficient the plants, will obtain remarkable economic savings, in all the owned structures.

### **Timeframe**

2018 - 2020

### **Costs**

€ 7.727.778,00

### **Funding sources:**

ROP ERDF-ESF 2014-2020, Axis 4, Action 4.1.1 (D.G.R. nr.153 of 11/04/2016)

## **4.2 ACTION 2**

### **Background**

Not limited at the civil sphere, but remaining in the field of energy efficiency of buildings, reduction of energy consumption and reduction of greenhouse gases' emissions, (Strictly concerning ZEROCO2 project), the Molise Region, after extensive studies resulting from participation in the project, found that a significant part of regional energy consumption, also derives from the production sector and has therefore decided to intervene in that sector as well. With this Action, in fact, the aim is to incentive the modernization of the buildings housing production cycles, or in any case premises intended for business use, as well as their electrical and thermal plants.

## Action

Incentives aimed at reducing energy consumption and climate-gas emissions of enterprises and productive areas including the installation of plants for renewable power production for self-consumption, giving priority to high-efficiency interventions. As example, the types of intervention that can be financed are the ones that:

- Include the realization of advanced systems for measuring energy consumption;
- promote efficient use of energy (high efficiency cogeneration, district heating and cooling networks)
- provide for the construction of energy production plants from RES for self-consumption;
- provide for the construction of small network infrastructures (micro-grid) to share the energy surplus.

## Players involved

The players involved in the development and implementation of this Action, in addition to the Molise Region as promoter of the Action, are:

- the companies registered in the Register of Companies at the Chamber of Commerce, Industry, Craft and Agriculture responsible for the territory, and who are in possession of VAT number;
- the freelancers, and their associations, holders of a VAT number who intend to carry out an intervention at an operational headquarters located in the Molise territory.

## Timeframe

15/02/2018 – 31/12/2019

## Costs

€ 3.177.028,00

## Funding sources:

ROP ERDF-ESF 2014-2020, Axis 4, Action 4.2.1 (D.G.R. nr. 36 of 08/02/2018)

## 4.3 ACTION 3

### **Background**

In the current context the discourse on networks and energy islands can play a key role in the city's growth towards sustainable development. In the Strategic Energy Technology (SET) Plan of the EU, emerges the need to adopt an integrated and unitary approach in the development of smart cities, where each subsystem (infrastructure, mobility, construction, social inclusion) is treated within an integrated system. The development of smart cities, together with enabling technologies such as smart grids and digital infrastructures, must become a priority of Molise energy planning. The first step that the Molise Region has planned in this direction is the following Action.

### **Action**

Implementation of intelligent energy distribution networks (smart grids) and interventions strictly concerning the complementary transmission networks, introduction of devices equipped with digital communication systems, intelligent measurement and control and monitoring as an infrastructure of the "city" and the sub-urban area

### **Players involved**

The players involved in the development and implementation of this Action are more than one, primarily the Molise Region as the promoter of the Action. Public Administrations that will derive a considerable economic benefit from the more rational management of the energy used by public loads (lighting, water purification, communications, etc.). The entire electric grid thanks to the possibility to monitor and manage all the infrastructures and especially the power flows in a much better way.

### **Timeframe**

2018 – 2020

### **Costs**

€ 2.485.992,00

### **Funding sources:**

ROP ERDF-ESF 2014-2020, Axis 4, Action 4.3.1 (D.G.R. nr. 153 of 11/04/2016)

## 4.4 ACTION 4

### **Background**

The current state of the art regarding energy efficiency in the Molise Region, as already explained in the meetings held so far during the ZEROCO2 project, can be considered satisfactory. The goal, however, is to go towards better and better results. The basis of continuous growth and the achievement of ever better results must be an increasing diffusion of information concerning the advantages obtainable from energy efficiency works on existing buildings and the construction of new buildings with near zero or zero emissions. With this objective and taking a cue from the activities carried out and proposed by the other partners in the meetings held in Chania and Lapua, training meetings were organized and held on the theme of the NZCO2EB dedicated to professionals and operators in the sector, who also obtained training credits for the participation in events. With this in mind, this Action aims at the widespread diffusion throughout the population (from SMEs, professionals, citizens) of the knowledge of the topic NZCO2EB and the benefits derived from it.

### **Action**

Organization of training and updating courses for technicians and companies operating in the installation and extraordinary maintenance of plants powered by Renewable Energy Sources (FER) and training courses for the use of new software for the management of APEs, recently purchased by the Molise Region. In addition to these training courses, clearly addressed to professionals and operators in the sector, training meetings will also be organized for "non-expert" audiences, with the aim of making people aware of the results obtainable in terms of economic savings associated with energy saving and the reduction of climate-altering gas emissions. In these meetings, organized and to be planned, the Good Practices and the Action Plan of the Molise Region will be exposed as well as those of the other partners, which have been translated into Italian and published online as foreseen by the project.

### **Players involved**

The Molise Region is, as usual, a subject involved in the development and implementation of this Action as a promoter. The maximization of the number of subjects involved is exactly the objective of this Action, we will therefore try to extend





the invitation to participate in organized events to as many people as possible, modulating the levels of in-depth analysis of the topics according to the audience to which the event is dedicated.

### **Timeframe**

This Action has already started, thanks also to the needs that come to light from the participation in the ZEROCO2 project, will take place during the whole phase 2 of the project and, if necessary, it will keep ongoing even at the end of the project

### **Costs**

Not significant and mostly concerning to the organization of events

### **Funding sources**

Regional Funds and ROP EFDR 2014-2020



Project: ZEROCO2

Partner organisation: MOLISE REGION

Country: Italy

NUTS2 region: Molise Region

**Date:**

**Signature:** \_\_\_\_\_

**Stamp of the organisation:** \_\_\_\_\_