BIO4ECO
Interreg Europe

European Union
European Regional
Development Fund

ACTION PLAN

PROJECT

BIO4ECO - sustainable regional bioenergy policies: a game changer

AGENȚIA pentru
DEZVOLTARE
REGIONALĂ
CENTRU

Content

1. Introduction

1.1.General description of the project

BIO4ECO –" Sustainable regional bioenergy policies: a game changer" is a project started in April 2016 and is continuing until September 2020. It is coordinated by Catalonia Forestry Sciences Centru in Spain and implemented by a consortium of 10 organizations from 8 European countries. The Romanian partner responsible for the implementation of the BIO4ECO project in Romania is the Regional Development Agency Centru (RDA Centru).

BIO4ECO is funded by the European Commission's interregional cooperation program - INTERREG EUROPE under Priority Axis 3 - Low-carbon Economy.

The overall objective of the project is to improve the design and implementation process of regional and national policies in the context of the transition to a low carbon economy, the use of renewable energy, the increase of energy efficiency of buildings and the use of forestry and agricultural biomass.

In Romania, the policy instrument aimed to be improved by the implementation of the BIO4ECO project is Priority Axis 3 / Investment Priority 3.1 - 2014-2020 Regional Operational Program - "Supporting energy efficiency, smart energy management and the use of energy from renewable sources in public infrastructures, including in public buildings, and in the housing sector".

In order to achieve this goal, the BIO4ECO project included an intensive interregional and local learning process by organizing international thematic workshops & study visits and regional stakeholder meetings. The purpose of the learning process was to achieve an **optimal integration of the lessons learned** in the regional action plans proposed for improving the policy instruments addressed by each project partner.

Topics addressed during the working sessions:

- The role of forests in regional and national strategies and programs for low carbon and bio-economy;
- Current experiences of integrated solutions for bioenergy policies and strategies;
- The energy-food-water link within land use: possible balance for the transition to the low- carbon economy;
- Social acceptance of bioenergy policies;
- Prioritisation of bioenergy production at different geographic levels.

Main expected results of the BIO4ECO project:

- Increasing the share of renewable energy in the global energy mix;
- Addressing bioenergy and bio-economy in planning and decision-making documents;
- Creating the basis for future integrated strategies and programs for regional bio-economy and for a carbon-free economy;
- Improving the policy tools addressed by partner organizations.

1.2. Description of the INTERREG EUROPE Programme

INTERREG EUROPE aims at improving the implementation of regional development policies and programmes, mainly those pursuing investment for growth and jobs and, where appropriate, of European territorial cooperation, by promoting the exchange of experience and learning new policies by regional stakeholders.

Funded by the European Regional Development Fund (ERDF), INTERREG EUROPE supports local and regional governments in Europe to develop better policies by creating opportunities for learning through

exchange of experience, sharing best practices leading to an integrated and sustainable impact in the regions. The program was designed so as learning processes about the way public policies work enable regional and local public authorities, together with other regional actors, to realize their own potential by capitalizing on their strengths, finding solutions to improve their own regional policies.

Actions developed with financial support of INTERREG EUROPE must fall into one of the following four priority axes:

1. Research and innovation
2. SME competitiveness
3. Low-carbon economy
4. Environment and resource efficiency

1.3. European, National and Regional Strategic framework: the energy efficiency and renewable energy policies

The growing energy demand, the continuous price rise, and the impact of the energy sector on the environment, underpin the need to strengthen the EU's energy policies, in terms of increasing energy efficiency (EE) and the use of renewable energy sources (RES), while continuing efforts tackling climate change.

At European level the energy initiatives have set high targets. In October 2014, the European Council established the EU's climate and energy policy for 2030, setting the target to reduce greenhouse gas emissions with at least 40% by 2030. In 2015, the Commission introduced the reform of the EU's trading scheme for emissions certificates to ensure that the energy sector meets the emission reduction target. Thus, in 2015, green energy has attracted global investment of over €300 billion.

The Paris Agreement confirmed EU ambitions on climate change mitigation, the implementation of the 2030 climate and energy policy framework becoming a long-term priority. In 2016, the Commission put forward proposals to accelerate the transition toward a low-carbon economy in other key sectors of the European economy.

Also, in 2016, the European Commission presented a new set of proposals for the transition to clean, consumer-oriented energy. The Clean Energy for All Europeans Package has legislative proposals addressing energy efficiency, renewable energy, and design of the electricity market, security of supply and governance rules for the Energy Union. The package includes actions to accelerate innovation in the field of clean energy and renovation of buildings, measures to encourage public and private investment and to promote the industrial competitiveness of the EU. The package also contains proposals to combat climate change and reduce the EU's dependence on fossil fuel imports. With the Clean Energy for All Europeans Package, the EU aims to reduce its CO_2 emissions with at least 40% by 2030, willing to demonstrate that the transition to clean energy is the main growth sector in the future.

In January 2018, the new amendments to the **Clean Energy for All Europeans Package** were under debated by the European Parliament on the 3 areas of interest (Renewable Energy, Energy Efficiency, Control Mechanisms) with the following results among others:

- By 2030, the EU should increase energy efficiency by 35%;
- Renewable energy sources should account for 35% of gross final energy consumption;
- Support schemes for RES from biomass should be reassessed and designed to encourage sustainable use of biomass. For energy generation, priority should be given to waste and wood waste burning.

At national level, Romania's Energy Strategy for the period 2007-2020 states that "*The overall objective of the strategy for the energy sector is to meet the energy needs both at present and in the medium and long term, at a low price, appropriate to a modern economy market and a civilized standard of living, under conditions of quality and food safety, respecting the principles of sustainable development.*" At the same time, the provisions of GD no. 1/2017 Annex 2 - The Governance Program 2017-2020 specifies that "*Energy efficiency should be treated as a "country program" which is to be implemented taking into account the*

reduction of the annual peak consumption, the national energy consumption as well as other national and international regulations."

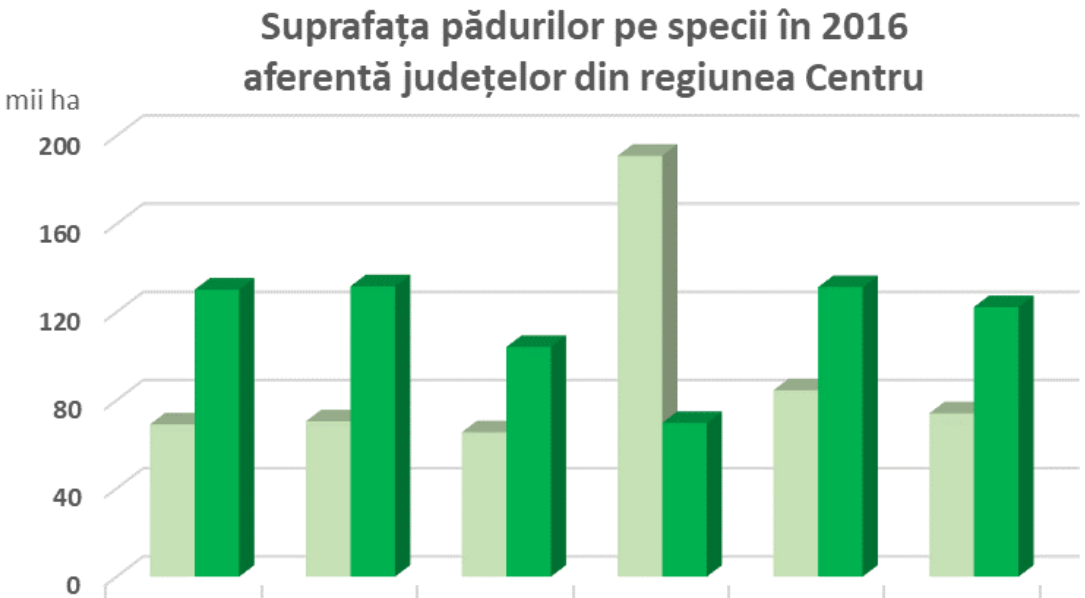
At regional level, the Regional Development Agency Centru elaborated the **Regional Development Plan for the Centru Region 2014-2020,** the main planning and programming document at regional level containing Centru's region development strategy for 2014-2020. Within this document, RDA Centru included the following RES objective "*Balanced development of the Centru Region by stimulating economic growth based on knowledge, environmental protection and sustainable use of natural resources as well as strengthening social cohesion*". In the framework of the Strategic Development Area "3*. Environmental protection, Increase of energy efficiency, boosting the use of alternative energy sources",* RDA Centru has set as strategic objectives: environmental protection, development of technical infrastructure, preservation of biodiversity, **mitigation of climate change** and natural risk prevention, use of renewable energy sources, as well as **improvement of energy efficiency in the public**, **household and economic sector at the level of the Centru Region.** Through Priority 3.3 "*Reducing climate change and preventing natural hazards*", RDA Centru supports local authorities in developing their own strategies to tackle climate change at local level and in elaborating and implementing strategies and action plans on adaptation to the effects of climate change, thus contributing to reduce vulnerability to the effects of climate change. The measures to achieve these objectives are to increase safety by preventing and mitigating natural hazards, in particular by creating and developing the appropriate infrastructure to prevent them and to mitigate the effects of climate change by implementing specific policies and actions. Through Priority 3.4 "*Increasing the use of alternative energy sources*", RDA Centru focuses on two major directions: on one hand the production and increase of renewable energy by promoting the potential of alternative energy sources and on the other hand the use of renewable energy sources by supporting investments in alternative energy solutions for public institutions, the private sector and individuals. At the level of the Centru Region, the greatest potential of renewable energy sources is represented by biomass, however it is still underexploited, due to the fact that its capitalization and use involve very expensive investments in technology. Thus, at present in the Centru Region there are quite few projects that have as their main objective the use of biomass as alternative energy source.

2. Local renewable energy sources in Centru Region. Regional Context

2.1. Description of the regional context regarding the use of local renewable energy sources

Current systems for the promotion of renewable energy production in Romania focus especially on promoting / sustaining the production of electricity, especially through large-scale projects; the support for the production of thermal energy was neglected, especially for heating, although, it has a significant share in the total final energy consumption.

The biomass energy potential is an important one at Centru Region level, which can be achieved through the sustainable exploitation of the forest fund of over 1.2 million hectares, which represent the largest part (19.43%) of the forestry fund of Romania. In 2015, a timber exploitation volume of 3.9 million cubic meters was reported in the Centru Region.



	Alba	Brașov	Covasna	Harghita	Mureș	Sibiu
Rășinoase	69,1	70,5	65,5	190,9	84,6	74,1
Foioase	130,2	131,7	104,2	69,7	131,3	122,3

Solar energy is also one of the main available renewable source with a higher average potential in the central part of the Centru Region (Transylvania Plateau) of up to 1.5 MW / m2, year.

The most important institutions or the representative ones in the Centru Region, having key roles in the development, implementation and monitoring RES&EE policies and projects are:

- The Regional Development Agency Centru
- County Councils in the Centru Region
- The Forestry Directorates belonging to the Romsilva National Forestry Registry
- Power distribution company - SDEE Transylvania South - explicitly covering the territory of the Regional Development Centru
- The National Electricity Transport Company Transelectrica
- The National Gas Transportation Company - at regional level
- Hidroelectrica - Hidroelectrica Sebeş Branch
- The Romanian Waters Administration through Water Management Organizations
- The National Environmental Protection Agency through the county agencies
- Local Energy and Sustainable Energy Development Agencies in the Centru Region

2.2. The role of the Regional Development Agency Centru in supporting renewable energy policies and projects

At regional level, RDA Centru developed a Regional Strategy for the use of renewable energy, followed by an Action Plan for Biomass and Bioenergy. These initiatives were followed by a series of interregional projects that aimed at supporting local authorities in developing Sustainable Energy Action Plans (through ENESCOM project – funded under The Intelligent Energy Europe Programme) or supporting new local businesses using biomass as source of energy (through the PROMOBIO project , funded under The Intelligent Energy Europe project). Also, through debates and participation at international seminars / conferences, RDA Centru supported local authorities in the Centru Region to design and implement strategies effectively for smart urban development, energy efficiency, including the use of RES. Through the ENESCOM project, the RDA Centru has supported local authorities in the Centru region to sign the Convenant of Mayors. There are currently 23 signatories of the Convention and several Sustainable Energy Action Plans (pending / approved 11): Aiud, Alba Iulia, Avrig, Brasov, Cugir, Fagaras, Ighiu, Miercurea Ciuc, Pianu, Sfântu Gheorghe, Sibiu, Sighişoara, Sântimbru, Teiuş, Tirgu Mures, Zlatna. The PROMOBIO - Promotion of Regional Bioenergy Initiatives project, funded by the European Commission, was aimed at supporting regional bioenergy initiatives to facilitate the development of new business projects in this area in three selected regions of Poland, Romania and Slovakia. In the first stage of the project, RDA Centru carried out an analysis of the bioenergy potential in the Centru region and an inventory of existing programs and facilities to stimulate the production of energy from biomass. At the same time, examples of good practice regarding the use of biomass, specific to each region, were identified and collected. In the second phase of the project an action plan was developed to increase the use of biomass in our region. In addition, several pilot projects benefited from support and training in the preparation and development of their biomass development initiatives for energy generation.

Energy produced form biomass

At Centru Development Region level, wood biomass is one of the most important natural resources. The potential of using biomass as a source of renewable energy is closely linked to the technological capacity existing in the territory for sustainable exploitation, transport and use.

The main types of biomass encountered in the Centru region are:

• Firewood - currently used in almost all heating systems in rural areas in the Centru Region in localities not connected to natural gas networks;
• Energy crops (e.g. energy willow) or waste from other agricultural crops: at the Centru Region level there are systems that use biomass from energy crops for low/medium capacity and high capacity heating (eg. the centralized district heating in Miercurea Ciuc)
• Animal waste - from animal farms with biogas production potential - used mostly in the Centru region as natural fertilizers for agricultural crops with low energy use;

Biomass resulting from wastewater treatment - produced locally at the treatment plants in the region, this type of biomass can be used locally for biogas production and then for heating or electricity.

In the Centru Region there are companies that use wood biomass to obtain wood materials for construction and interior design. Some of the wood residues resulting from the technological processing of the raw material are used in heating systems and even co- generation systems (heat + electricity), and there is also an important potential in the region for the development of pellet industry / wood briquettes.

Biofuels based on wood from forests include: wood chips of various types, logs, pellets, briquettes, roots, wood charcoal, wood gas and fast-growing tree species used for energy purposes, such as the willow tree. Subsidiary products of the wood industry (residual waste and industrial wood waste such as black lye, bark, sawdust, processing waste and recycled wood) have a high energy potential and are used in the production of heat and electricity, especially in the integrated wood industry. The use of secondary products and recycled wood for energy purposes could reach 30-50% of the use of raw wood.

The volume of wood that can be harvested in the forests is the one foreseen by the forestry arrangements. The volume of wood that can be harvested annually (the annual possibility) is calculated by reference to the total volume of wood intended to be harvested at the number of years of validity of the arrangement. According to the provisions of art. 59 of the Law no. 46/2008 - Forestry Code, compliance with this volume is mandatory and can only be exceeded if in the previous years the whole possibility has not been harvested or if accidental products (dry trees, snow or wind attack, insects attacked etc.) appear that must be harvested. If the volume of trees strongly affected by natural disasters is higher than the annual possibility, this can be exceeded only with the approval of the central public authority responsible for forestry (forestry directions).

Evolution of forest area by forest species (thousands of hectares) In the counties of the development region Centru during 1990 -2016				
Year	**1990**	**2000**	**2010**	**2016**
Alba County (total)	203,6	203,3	201,7	199,3
Softwood	69,3	68,9	73,6	69,1
Hardwood	134,3	134,5	128,1	130,2
Brașov County (total)	187,7	187,3	201,5	202,2
Softwood	65,7	64,9	69,9	70,5
Hardwood	122	122,5	131,6	131,7
Covasna County (total)	160	158	165,5	169,7
Softwood	64,8	60,4	65,3	65,5
Hardwood	95,2	97,6	100,2	104,2
Harghita County (total)	228	225,5	257,2	260,6
Softwood	169,3	166,4	193,6	190,9
Hardwood	58,7	59	63,6	69,7
Mureș County (total)	206,3	205,6	216,3	215,9
Softwood	79,7	77,6	82	84,6
Hardwood	126,6	128	134,3	131,3
Sibiu County (total)	184,1	184,3	193,7	196,4
Softwood	69,7	68,2	73,6	74,1
Hardwood	114,5	116,1	120,1	122,3
Aggregated Total	**1.169,7**	**1.164**	**1.235,9**	**1.244,1**
Total Softwood	518,5	506,4	558	554,7
Total Hardwood	651,3	657,7	677,9	689,4
Source: National Institute of Statistics				

Current systems for the promotion of renewable energy production in Romania mainly focus on promoting / sustaining the production of electricity, especially through large-scale projects; thermal energy has been neglected not having been given the proper support, especially for heating, although it has a significant share in total final energy consumption.

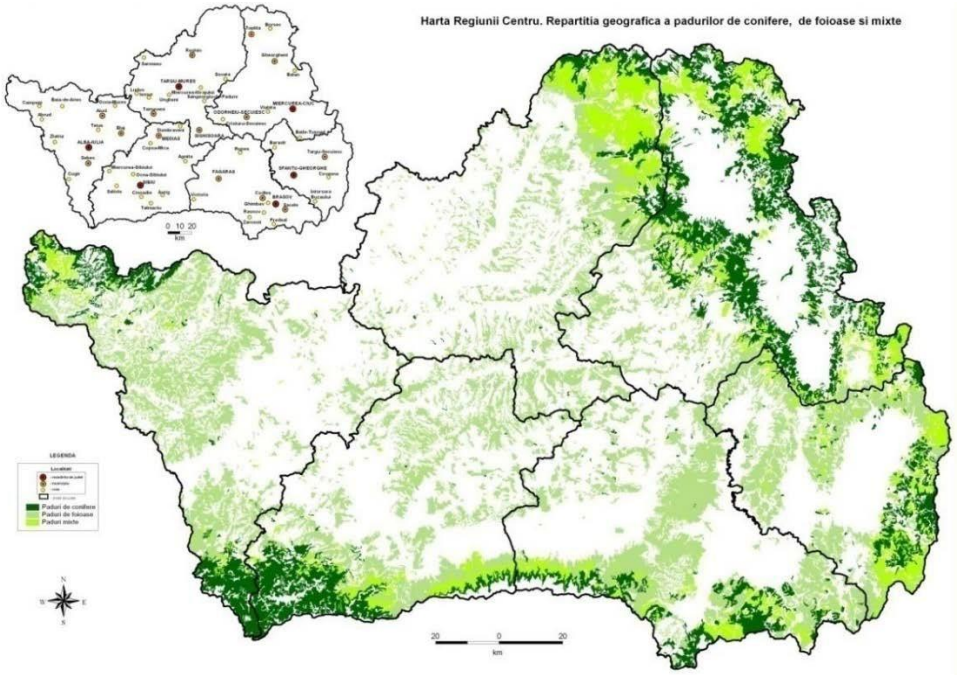
Evolution of the volume of wood harvested in the counties of the Centru Region (thousand cubic metres)				
County	**1990**	**2000**	**2010**	**2016**
Alba	556	361	526	445
Brașov	547	500	815	600
Covasna	475	466	511	560
Harghita	1.050	1.131	1.000	1.062
Mureș	718	570	554	755
Sibiu	367	377	503	558
Total Centru Region	**3713**	**3405**	**3909**	**3980**
Source: National Institute of Statistics				

Having evaluated the above tables, one can observe that there is an increase in the volume of harvested wood at the level of the Centru Region after 2000 of about 17% until 2016 (about 1% / year) and an average volume of wood harvested per hectare of only 3 meters cubic meters per hectare of forest. There is, therefore, a real potential for increasing the volume of timber exploited at the edge of the region.

The green certificate promotion scheme (Law 220/2008) had already shown its deficiencies - large projects and megaprojects implemented in the field of wind turbines and photovoltaic panels that had a high degree of economic profitability in the current form of Law 220/2008; these projects have caused a number of major inconveniences: difficulties in compensating the variations in power generated by the national electricity transmission system by large-scale wind and photovoltaic systems; increase in the final consumer price of electricity (which includes the value of green certificates related to electricity from renewable sources), which is hard to bear by the population and industrial consumers; the low economic effect of implementing these large projects (given that they were carried out by foreign investors with imported technologies, which created few jobs, reduced technology transfer, and the economic result net - profit - is usually outsourced).

Sustainability refers both to the reduced CO2 footprint generated by project implementation given to their economic profitability as well as to the positive social impact of these projects at local level: job creation, pollution reduction, the economic effects of these projects that generate local benefits.

The traditional use of wood biomass in rural areas in the Centru Region is in the form of firewood (especially in areas where there is no natural gas distribution network) used for heating and food preparation; Unfortunately, this use is made in combustion plants with very low yields (about 20%) that make them inefficient but also polluting.



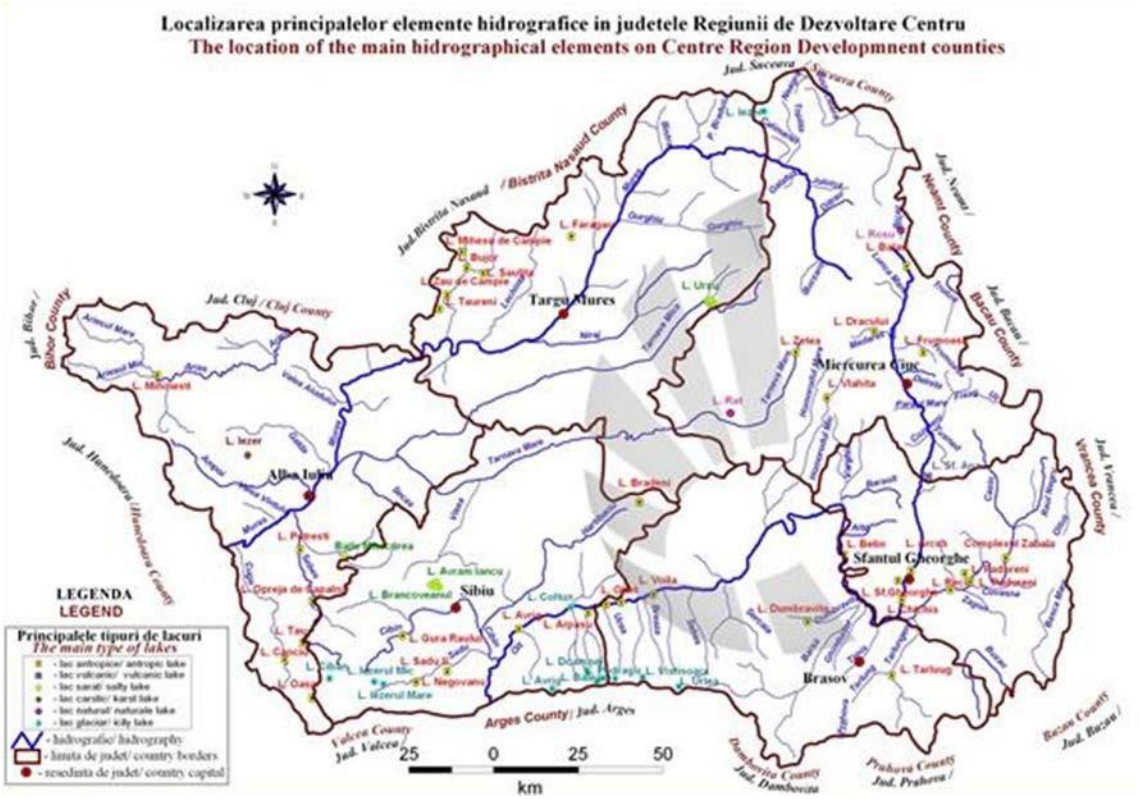
Source: The Centru Region Bioenergy/Biomass Action Plan – (2014, RDA Centru)

At the Centru Region level, there is also potential to exploit biomass resulting from wastewater treatment - produced locally at the treatment plants in the region, this type of biomass can be used locally for biogas production and then for heating or electricity to cover the energy needs of waste water treatment plants and the production of fertilizer for agricultural crops.

Hydro energy

At the level of the Centru Region, water is used in large-scale (hydro-power) systems as well as in medium and small (micro-hydropower) systems. The mountain-specific relief in the region is the main potential generator in the hydrographic area. The hydrographic basins of the Mureş and Olt rivers are the main hydropower fields in the region, with hydro power plants totaling about 600 MW, located on the Sebeş valley, on the middle course of Olt and its tributaries. The region's electricity production accounts for about 7% of the national production, over a quarter of which is produced in hydropower plants.

However, the potential of the region is much greater in this perspective, with the emergence of small- scale power generation systems on the market. For buildings located in the vicinity of regular water courses, the installation of a micro-hydropower plant can largely offset the cost of electricity, ensuring the potential of an objective to become energy-independent in terms of electricity consumption. Favorable areas for exploiting the hydro- and micro-hydro potential in the Centru region can be highlighted by the location map of the main hydrographic elements at the Centru Region level:

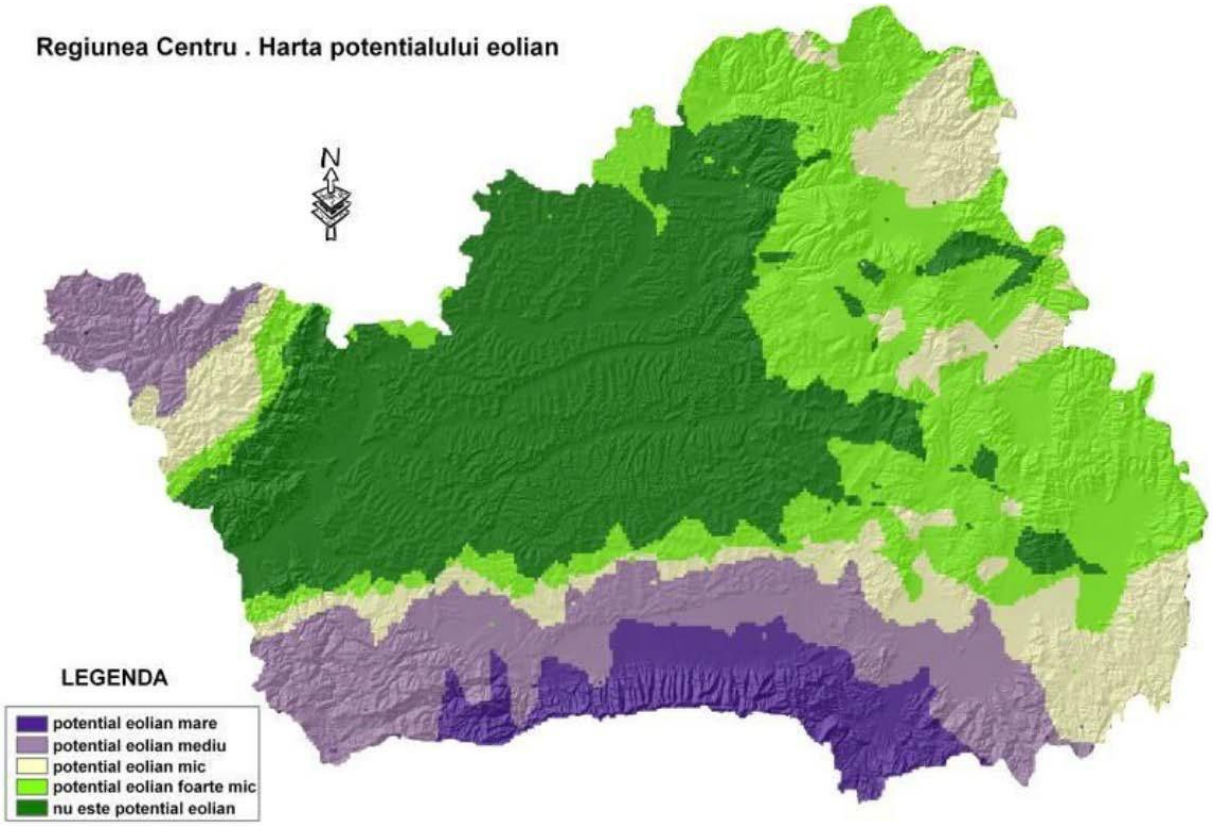


Thus, we can consider that the potential of RES in hydropower in all counties of the Central Region, especially in upland regions, where the morphology of the relief, through points with large but close spatial differences, favors water falls, loading with potential energy the existing flows of rivers and streams.

Wind energy

The potential for wind energy use in the Centru Region is strongly modelled by the relief forms, the region being mainly bordered by mountainous groups of different average altitudes. This leads to a limited wind potential in the region, the areas with the most important potential are the marginal regions, the main areas of interest being the following:

- NW of Alba County
- SE of Sibiu County
- Southern area of Brasov County



Source: Analysis of the Wind Power Potential at the Centru Region Level in the Perspective of Sustainable Economic Development (2010, RDA Centru)

In Brasov, Sibiu and Alba counties there are areas located at medium altitudes over 500 m where there is wind potential; where the average wind speed exceeds 4 m / s (Alba County) and 5 m / s (Braşov and Sibiu County). However, the economic feasibility of such projects depends greatly on the site concerned.

The main challenges in implementing significant wind projects in areas with such potential in the Centru region are difficult access (mountains) as well as lack of electricity distribution infrastructure / low density of distribution retailers in potentially targeted areas. The costs associated with the development of the entire infrastructure needed to operate the transport and use of wind energy is thus significant when medium and large projects are considered.

There is the possibility of developing small-scale projects for the energy supply from wind at specific local objectives or off-grid locations where distribution networks do not exist or the connection to them requires high costs.

The territories of the Mureş, Harghita and Covasna counties do not represent high wind potential areas, the average wind speed only isolated exceeding 3 m / s.

Solar energy

In the Centru Region the solar potential predominates within the Carpathian Arch - the Transylvanian Plateau - with low altitudes and the longest sunshine duration. If in the mountain areas the average annual solar potential is about 1,000 kWh / m2 a year, in the area of the Transylvanian Plateau there is an average solar potential of over 1,500 kWh / m2 a year (estimates made using mathematical models that consider the plane located at annual average of the optimal fixed angle level).

The solar potential in the region can be capitalized either through photovoltaic systems and electricity generation, or through solar thermal panels or solar collectors for heat production. Also, some modern energy-saving buildings near zero - nZEB - provide design of building sites to maximize the potential of solar energy storage by using southern glazed facades and local greenhouse effect to naturally heat interior

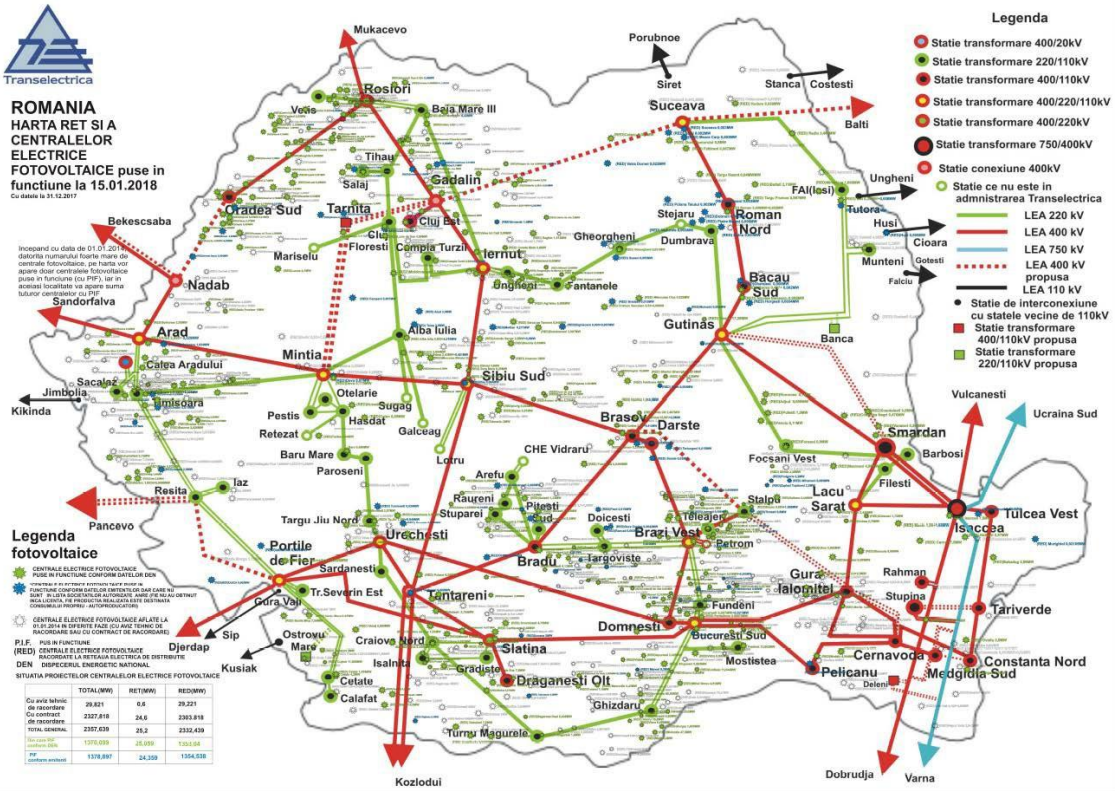
spaces.

Average of the total direct solar radiation in Centru Region *				
	Annual mean of the solar radiation	Monthly mean of the solar radiation	Mean of the solar radiation in December	Mean of the solar radiation in July - August
U.M.	kWh/m^2,year	kWh/m^2, month	kWh/m^2, month	kWh/m^2, month
Centru Region Mountain areas	1.000	83	40	150
Centru Region Plateaus	1.500	125	50	170
Sourcs: ANERGO – Alba Energy Observatory ** Calculated power at the optimal annual average*				

In the following map, an image of the photovoltaic power plants in Romania and of the Centru Region according to Transelectrica is presented, including photovoltaic power plants put into operation, photovoltaic power stations for own consumption and those in different phases of connection.

The updated and scalable map is available online at the following address:

http://www.transelectrica.ro/documents/10179/32316/7productie20.pdf/cfa61bd2-0155-4be0-8d52-0e48d62d09f8



Source: Transelectrica (www.transelectrica.ro)

2.3. Regional policies to support the use of renewable energy sources (relevant local and regional institutions, activities to implement the action plan.

The main mechanisms to support the implementation of actions on sustainable energy and the use of renewable energy sources in the Centru Region refer to policy instruments developed at different levels:

a. National level:

National policies in the field set out directions for the implementation of specific legislation and support the implementation of projects and **policies**. The most important policy tools are:

- Romania's Energy Strategy for the period 2007 - 2020, updated for 2011-2020
- The Romanian Energy Strategy 2016-2030, with the perspective for 2050 - preliminary version subject to public consultation
- The National Action Plan for Renewable Energy Sources
- The National Action Plan for Energy Efficiency - 2014
- The National Action Plan 2016-2020 on Climate Change
- The Master Plan for Biomass in Romania (2010)
- The Regional Operational Program 2014-2020
- The National Rural Development Program 2014-2020
- The Operational Program for High Infrastructure 2014-2020
- The Operational Program for Competitiveness 2014-2020

b. Regional level:

The regional level is dominated by policies developed by specific institutions and organizations such as county councils, regional development agencies and organizations involved in renewable energy and for the sustainable exploitation of the environment

At Centru Region level, the main sustainable development policy instruments are:

- The Development Plan for Centru Region 2014-2020 (RDA Centru)
- The Intelligent Specialization Strategy for Centru Region 2014-2020;
- The Centru Region Action Plan for Bioenergy / Biomass 2014-2020;
- The Energy Master Plan of Alba County (2011) / other counties
- Local Energy Strategies

c. Local level:

At local level, the main policy instruments are the Sustainable Energy Action Plans (SEAPs) developed by over 20 local authorities within the European Covenant of Mayors initiative. The Local Energy Efficiency Improvement Programs by ANRE (mandatory according to Energy Efficiency Law 121/2014) are other locally adopted instruments targeting actions in the field of energy efficiency.

Local Energy Strategies and Sustainable Urban Mobility Plans (SUMPs) are examples of mechanisms that engage local policies for energy efficiency.

The policies within the Sustainably Built Environment excellence domain actively support the European Union's direction / objectives on sustainable development, the area being identified in the

Strategy for Intelligent Specialization of Centru Region as a field of innovation, technological development and added value.

The policies with impact on biomass at Centru Region level are also identified as constitutive elements of circular economy at regional level, with components of these policies representing local value chains, also part of sustainable economic policies. In order to amplify the positive effects of existing policies, it is important to increase the efficiency of the circuits that support the reuse of resources and minimize the energy losses both through the nature of the efficiency of the technologies used and through the efficiency given by the organization of the geography of the use of resources, transposed by minimizing transport times, as well as local exploitation and the creation of sustainable biomass micro-circuits.

3. Presentation of the policy instrument - ROP 2014-2020 - AP3 - IP 3.1. Other financial support instruments for renewable energy production, increase of energy efficiency and transition to a low carbon economy.

3.1. Overview of mechanisms to support renewable energy production, increase energy efficiency and support the transition to a low-carbon economy

- **Regional Operational Programme (ROP) 2014-2020**

It represents one of the programmes through which Romania accesses the European structural and investment funds of the European Regional Development Fund (ERDF) in the current programming period.
The program is managed by the ROP Managing Authority within the Ministry of Regional Development and Public Administration and was adopted by the European Commission on 23rd June 2015.
In the period 2014-2020, the ROP has allocated approximately €8.13 billion out of which €6.60 billion represents EU support, through the ERDF and around €1.53 billion represents national contribution.

ROP 2014-2020 aims to increase the overall economic competitiveness and improve the living conditions of local and regional communities by supporting the development of the business environment, infrastructure and services for the sustainable development of the regions so that they can effectively manage resources and capitalize on their potential for innovation and assimilation of technological progress.
The program includes 13 priority axes, each of these axes having investment priorities with specific objectives and potential beneficiaries:

Priority Axis 1: Promotion of technological transfer
Potential beneficiaries - legal entities developing or establishing technology transfer infrastructure
Priority Axis 2: Improvement of small and medium-sized enterprises competitiveness
Potential beneficiaries - SMEs, incubators, business accelerators
Priority Axis 3: Support given to the transition to a low-carbon economy
Potential beneficiaries - Central and local public authorities
Priority Axis 4: Support given to the sustainable urban development
Potential Beneficiaries - Local Public Authorities - County Residence Municipalities
Priority Axis 5: Improvement of Urban Environment as well as Conservation, Protection and Sustainable Capitalization of Cultural Heritage
Potential beneficiaries - Authorities of local and central public administration, religious units; NGOs; partnerships among these entities
Priority Axis 6: Improvement of regional road infrastructure of regional importance
Potential Beneficiaries - Local Public Authorities (County Councils), ATU, Partnerships between ATUs (ATU county and ATU city / municipality / commune)
Priority Axis 7: Diversification of local economies through sustainable development of tourism
Potential beneficiaries - ATUs, partnerships between ATUs
Priority Axis 8: Development of Health and Social Infrastructure
Potential beneficiaries - Local public authorities, providers of public and private social services, accredited according to law, partnerships.
Priority Axis 9: Support given to the economic and social regeneration of disadvantaged communities in the urban environment
Potential beneficiaries - Partnerships (local action groups) between representatives of local public authorities, institutions, local business environment, civil society, and marginalized urban area selected for intervention.
Priority Axis 10: Improving Educational Infrastructure
Potential beneficiaries - Administrative-territorial units (public administration authorities and institutions), public

higher education institutions
Priority Axis 11: Geographical extension of the property registration system in cadastre and land registry
Potential beneficiaries - National Agency for Cadastre and Real Estate Advertising
Priority Axis 12: Technical Assistance
Potential Beneficiaries - ROP Managing Authority, ROP Intermediate Bodies
Priority Axis 13: Support given to the regeneration of small and medium-sized towns
Potential Beneficiaries - Local Public Authorities at Urban Level, except County Residence Municipalities

- **National Rural Development Programme Romania**

At national level, the National Rural Development Programme 2014-2020 offers the possibility to finance investments in the production and use of energy from renewable sources (biomass). They will contribute to the cross-cutting objectives related to environmental protection, climate mitigation and adaptation, as well as increasing the number of farmers choosing to grow energy crops. The measures of the National Rural Development Programme 2014-2020 that support the projects to obtain energy from renewable sources are:
Measure 4" Investment in physical assets" supports, among other things, investment in installations for the production of electricity and / or heat by using biomass. The total financial allocation for 2014-2020 is €2.4 billion.
Measure 6 " Development of exploitations and enterprises " supports investment for fuel production from biomass.
Sub-measures 6.2 "Support for the establishment of non-agricultural activities in rural areas" and 6.4 "Investment in the creation and development of non-agricultural activities" cover the production of biomass fuel (e.g. pellet and briquettes) for marketing, production and use of energy from renewable sources to carry out own activities. The financial allocation for sub-measure 6.2 is €117.8 million, and for measure 6.4 it is €152.6 million.
Sub-measure 8.1 "Afforestation and the creation of wooded areas" provides support for afforestation of agricultural and non-agricultural land, including acacia and three species of willow: white willow, goat willow, crack willow. This sub-measure benefits from a financial allocation of approximately €124.5 million. Through local interest measures, which could be **Measure 19** "Local Development LEADER", it also finances local investments aimed at promoting the use of biomass-based heat sources, the creation and development of biogas production and distribution systems at community level. The total public allocation for 2014-2020 is €563.5 million.

Large Infrastructure Operational Programme 2014-2020 (LIOP 2014-2020)

It is a strategic programming document, mainly aimed at supporting major infrastructure and resource investments. The 2014-2020 LIOP strategy is oriented towards the Europe 2020 objectives, in line with the National Reform Program (NRP25) and Country Specific Recommendations (RSR), focusing on sustainable growth by promoting a low-carbon economy through energy efficiency measures and green energy promotion, as well as promotion of environment-friendly ways of transport and a more efficient use of resources.

Priority Axis 6 "Promoting Clean Energy and Energy Efficiency to Support a Low Carbon Economy" aims to support investments in the clean energy and energy efficiency sector in order to contribute to the objectives of the Europe 2020 Strategy (20/20/20).

Specific objective 6.1 aims to increase energy production from less exploited renewable sources (biomass, biogas, geothermal), distribution and production sector. Under AP6, €73.37 million funds are available for projects dedicated to the production of biomass energy.

Competitiveness Operational Programme (COP) 2014-2020

It includes bio-economy among the areas of intelligent specialization, stating that "the domain benefits from the huge potential of Romanian agriculture, in this context the capitalisation of biomass and biofuels are subdomains with obvious potential.

3.2. Analysis of the policy instrument approached by the project in Centru Region

Policy instrument: Priority Axis 3. "Supporting the transition to a low-carbon economy", investment priority 3.1 "Supporting energy efficiency, smart energy management and the use of renewable energy in public infrastructure, including public buildings, and the housing sector"

Through the 2014-2020 Regional Operational Program, Priority Axis 3, Investment Priority 3.1 - Supporting energy efficiency, smart energy management and the use of renewable energy in public infrastructure, including public buildings and housing, €1.23 billion are allocated for investments in increasing the energy efficiency of residential and public buildings as well as of public lighting systems. Centru Region has been allocated the sum of €124.02 million.

A. Through the 2014-2020 Regional Operational Program (ROP), Priority Axis 3, Investment Priority 3.1, Operation A - Residential Buildings has been supported to increase the energy efficiency of housing blocks.

Two calls were opened under this investment priority operation in 2016 and 2017. Applications for funding could be submitted by urban-administrative territorial units.
A request for funding could include a maximum of 10 blocks of flats. Support were given for thermal rehabilitation of the blocks built between 1950-1990, which had a minimum GF + 2 regime.

The total eligible amount of a grant application was at least €100,000 up to a maximum of €5 million. The financial allocation for the Centru Region was €60.66 million (€51.56 million - the European Regional Development Fund and €9.10 million for the state budget). The contribution of the requesting Territorial Administrative Unit and the Owners' Association is at least 40% of the total eligible value.

Funded activities:

- rehabilitation and upgrading of the heating agent distribution system;
- upgrade of the heating system: repair works / replacement of the central thermal heating system of the block / entrance;
- the purchase and installation of alternative energy generation systems from renewable sources;
- Replacement of fluorescent and incandescent bulbs from common areas with high energy efficiency and long-life ones;
- improving the thermal insulation and waterproofing of building envelope, roofing, including consolidation measures;
- implementation of energy management systems for the management systems; improvement of the thermal insulation and waterproofing systems of building envelope, roofing, including consolidation measures;

During the first call, closed on October the 16th 2016, 8 projects were submitted in the Centru Region, among which only one was selected and contracted, amounting to €0.06 million (requested amount). In the second call, closed on February 28th, 2018, 16 projects were submitted with a requested amount of €16.08 million. The selected projects cover 26.6% of the regional allocation.

B. Urban and rural public authorities and institutions are supported to increase the energy efficiency of own/under own management buildings through the 2014-2020 Regional Operational Program (ROP), Priority Axis 3, Investment Priority 3.1, Operation B - Public Buildings.

The call for projects under this operation was opened in 2017 (February, 28 –October, 4). Applicants from urban and rural public authorities, local and regional authorities and local and urban partnerships could apply for funding.

Thermal rehabilitation of public buildings built up until the end of 1999 with a total useful floor area of more than 250 m² were targeted. The total eligible amount of a grant application was of at least €100,000 and a maximum of €25 million, the applicants' contribution being of at least 2%.

The financial allocation for the Centru Region was of €60.66 million (€51.56 million - the European Regional Development Fund and €9.10 million - the state budget).

The funded activities included:
- improving the thermal insulation of the building envelope and roof, including building consolidation measures;
- introduction / rehabilitation and modernization, as appropriate, of facilities for the preparation, distribution and use of heating and domestic hot water, ventilation and air- conditioning systems;
- local use of renewable energy sources;
- the creation of small district heating / cooling systems using cogeneration and trigeneration solutions together with renewable sources;
- implementation of energy management systems;
- introduction of mechanical ventilation systems with heat recovery to ensure indoor air quality and air conditioning systems;
- replacement of fluorescent and incandescent bulbs with high energy efficiency and long-life ones;
- purchase, installation and operation of equipment / installations and technologies that allow the storage of electric and thermal energy - actions that increase energy efficiency.

Out of the total 87 submitted projects, 60 entered the selection stage, the amount requested was €81.71 million. 39 projects were contracted until September the 14th 2018, amounting to €57.53 million.
The contracted projects being in the selection phase cover 140.6% of the regional allocation.

C. Extension / upgrading of urban lighting infrastructure is funded through the 2014-2020 Regional Operational Program (ROP), Priority Axis 3, Investment Priority 3.1, Operation C - Public Lighting.

The call for projects related to this operation has been opened from February 18th to October 18th, 2018. Local authorities from urban areas could apply for funding.

The total eligible amount of a grant application was at least €100,000 up to €5 million.

The financial allocation for the Centru Region is €11.92 million (€10.14 million - European Regional Development Fund and €1.78 million - state budget)

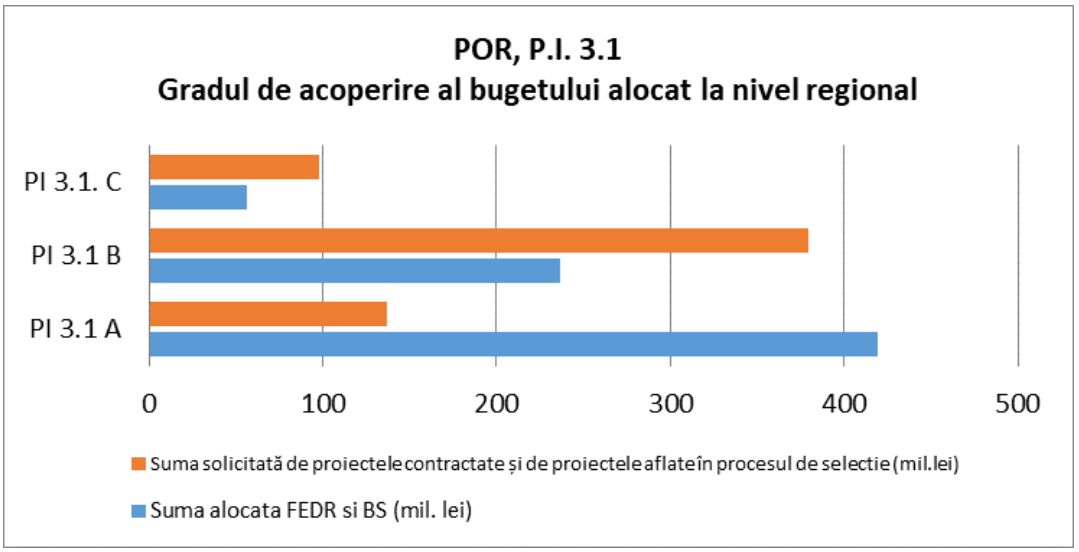
Minimum own contribution is of 2% of the total eligible amount. Activities funded:

- Acquisition / installation of remote management systems for public lighting;
- Installation / replacement of high-energy consumption bulbs with high energy efficiency long- life LEDs, providing the right comfort for both existing systems and new ones.
- Use of renewable energy sources (e.g. photovoltaic panels, etc.)
- Rehabilitation of electrical installations - pillars, grids, etc. (only if the elements are part of the public lighting system and are the property of the applicant)

- Creation / extension and / or re-integration of the public lighting system in urban areas

Until August the 31st 2018, 8 projects were submitted with a total value of €21.02 million, resulting in a regional coverage of 169.9%.

Analysing the data presented above, the coverage of the budget allocated by ROP, PI 31 at the regional level is presented according to the chart below.



The analyses conducted by the Intermediary Bodies as well as the requests for information / clarification addressed by the potential applicants revealed both the reasons for the rejection of the projects and other information on the problems encountered by them in the drafting of the projects.

Thus, the difficulties encountered can be structured within aspects such as:

- Clarity of the information in the applicant's guide and easy access to information on the call for projects. It was revealed that a considerable number of questions were received during the opening of the call for projects aimed at clarifying some aspects of eligibility of applicants, activities, costs, etc.
- The time required to submit / prepare projects. Analyses showed that applicants complained that the time required to prepare the projects and prepare mandatory call papers was too short.
- The degree of documentation preparation of potential applicants according to the requirements and criteria of the program. Several problems were identified, such as the property regime of buildings, etc.
- The technical capacity of the local authorities involved in the project. Often the staff assigned to the writing of the application does not have enough knowledge in the field of energy efficiency (not possessing enough knowledge about the complete, modern and efficient technical solutions, about the technical norms in force, etc.).

4. Measures to improve the policy instrument addressed by the project (POR 2014-2020, AP. 3 P.I. 3.1)

The Interreg Europe programme, financed by the European Regional Development Fund (ERDF), was therefore designed to support policy-learning among the relevant policy organisations with a view to improving the performance of regional development policies and programmes. It allows regional and local public authorities and other players of regional relevance across Europe to exchange practices and ideas on the way public policies work, and thereby find solutions to improve their strategies for their own citizens.

Improving policy instruments/ Structural Funds programmes

In terms of results, cooperation can influence policy instruments in various ways. Based on the INTERREG IVC experience, this improvement may take different forms (see types 1, 2 and 3 below), which can sometimes be interconnected.

Type 1: implementation of new projects

Type 1 implies that the policy instrument provides funding as is the case with Structural Funds programmes. Thanks to interregional cooperation, managing authorities and other relevant bodies can find inspiration in other regions and import new projects to be financed within their programmes. This type of impact requires the availability of funding in the programme.

Type 2: change in the management of the policy instrument (improved governance)

Interregional cooperation can also influence the way policy instruments are managed. New approaches can be adopted thanks to the lessons learnt in other regions. For instance, a new methodology for monitoring or evaluating a measure can be developed within the policy instrument. A managing authority or any other relevant body can also improve the way thematic calls are organised or the way projects are selected. The governance of the programme may also refer to the way environmental issues are integrated into the different measures of the operational programmes.

Type 3: change in the strategic focus of the policy instrument (structural change)

The third type is the most challenging since it requires a change in the operational programme. To integrate the lessons learnt from the cooperation, some managing authorities can modify existing measures or even create new measures in their programme.

The Regional Operational Program (ROP) is an important instrument by which Romania benefits from EU structural assistance necessary to promote smart sustainable and inclusive growth in all regions of Romania, enhancing the improvement of living and working conditions in these areas. The program aims to put forward solutions to the main challenges Romania faces in terms of development, namely: regional competitiveness, sustainable urban development, low carbon economy as well as regional and local economic and social infrastructure.

The continuous evaluation and monitoring of the program is essential to improve the absorption rate and the impact created by the investments funded under the ROP 2014-2020.

In the elaboration of the proposals for improvement of Axis 3.1 ROP 2014-2020 there were considered:

- Status quo analysis of the situation of the submitted projects, in the case of Actions 3.1.A and 3.1.B
- Analysis of the documentation related to the launched project calls (applicant's guide, technical and financial evaluation criteria, application for funding, etc.)
- Discussions with applicants and beneficiaries of the two actions of the priority axis 3.1
- Meetings with representatives of the RDA Centru responsible for the help desk activities, evaluation and monitoring the ROP 2014-2020
- Analysis of other public documents: questionnaires, feedback from potential applicants at different stages (consultation of guides, pre-application)
- Romania's obligations regarding energy efficiency, renewable energy sources
- Meetings and study visits made within the BIO4ECO project

Improvement measures address both future calls of Axis 3.1 ROP 2014-2020 and the forthcoming Regional Operational Program. These proposals address:

1. Improvement in the governance of the policy instrument, i.e. Program management, through:
    a. improvement of project calls for ROP 2014-2020, Axis 3.1, operations A and B in terms of clarity of the information in the applicant's guide
2. Improvements at strategic level, covering both the current program and future programs through:
    a. boosting the use of renewable energy sources in the projects implemented in the future calls for Axis 3.1 as well as in the development of the operational program for the period 2021-2027
    b. increase of the capacity of the public organizations for the contribution of the appropriate choice for the solutions regarding the thermal rehabilitation of buildings

5. Actions and mechanisms that can be used to influence the addressed policy instrument

Participation within the BIO4ECO project provided a great opportunity for the RDA Centru (Intermediate Body for ROP 2014 -2020) to learn and exchange experience with other project partners. Each project meeting organized during the first phase of the project was an opportunity to learn and share experience on regional bioenergy policies and identify solutions to improve them. During these meetings, actions and mechanisms were identified to Influence Priority Axis 3 / Investment Priority 3.1 of the Regional Operational Program 2014-2020 - "Supporting energy efficiency, intelligent energy management and use renewable energy in public infrastructure, including in public buildings and in the housing sector." These outlined the directions of the current action plan, a document aimed to improve ROP 2014-2020, PA 3.1.

The kick-off meeting organized in Solsona (Catalonia) set the course of the entire project. This two days meeting was an opportunity for the project partners to discuss the status quo of the bioenergy policies in each region. The debate concluded that the main goal of bioeconomy is represented by the added-value product of biomass and not by bioenergy production. Also, during the meeting, the role of media in increasing the public awareness on low – carbon economies and energy efficiency was addressed. The Catalan partners highlighted the importance of stakeholder engagement and the involvement of local authorities in implementing bioenergy projects (**action 2**). The second day of the meeting included study visits in Berguedà and in the industrial area of Barcelona, best practices and pioneer projects of using biomass, including by-products for heating and cooling different economic areas (Barcelona port area) and localities from Catalonia, in order to increase the RES share in the region (**action 4**).

During the second workshop hosted by Abruzzo Region, the project partners, energy experts and other regional stakeholders concluded that in order to ensure proper implementation of the regional strategies related to energy efficiency and renewable energy, financial support is needed. These financial instruments and programmes must be accessible and must respond to the needs of applicants (**action 1**).

Both meetings organized in in Joensuu (Finland) and in Riga (Latvia) highlighted the importance of cross -sectoral collaboration and stakeholder engagement in implementing energy efficiency and renewable energy policies **(action 3).** Successful examples of cooperation between academia and public authorities were provided e.g. the collaboration with the Latvian State Forest Research Institute SILAVA in order to identify best solutions for land management, based on soil data analysis and cartographic material; the collaboration with Karelia University of Applied Sciences and the implementation of Sirkkala Energy Park - a research, demonstration and educational platform for energy use and renewable energy production and GREENHUB project (**action 2 & action 3**).

There was a lot to understand from each region about increasing the RES energy production and about forest management solutions within the meetings hosted by the Slovenian, French and Bulgarian partners **(action 3 & action 4).** A several project meetings highlighted the importance of social acceptability of bioenergy and bioeconomy (Solsona/Catalonia, Brasov/Romania) **(action 3**).

ACTION 1 – Quality improvement of the projects submitted & minimization of the projects rejection rate by simplifying the funding accessing criteria and by improving the clarity of the ROP 2014-2020, PA 3.1

Regional Background

The analysis of the way in which the calls have been launched so far under the ROP 3.1 Priority Axis, revealed that the potential applicants addressed many questions, which resulted in difficulties in understanding the documentation, the forms and the eligibility criteria. This was due, on the one hand, to unclearness of information in these documents and, on the other hand, to the applicants' lack of experience completing these forms. Among the issues requiring clarification from applicants were those concerning, in particular, the following: applicants' eligibility, activities and costs as well as technical and legislative issues.

Out of 111 projects submitted on Investment Priorities A and B in the administrative compliance and eligibility phase, 30% of the projects were rejected. In the case of the projects submitted under the investment priority A the main reason for rejection was represented by incomplete documentation, in the case of the projects submitted under the investment priority B the main reasons were: failure to prove ownership (14%), failure to fulfil the indicators mentioned in the specific guide (25%) energy performance certificate not having been issued for the whole building (29%), double financing (32%).

Another difficulty reported by the applicants was the short time for the preparation and obtaining of the mandatory documents for the project submission.

The compliance requirements required by the evaluation criteria are designed to ensure the quality of the documentation, leading directly to high-quality applications. Thus, the criteria must be clearly formulated, being neither very restrictive nor too general. Criteria and sub criteria must also lead to compliance with existing legislation and methodologies. Often the clarifications requested by the applicants as well as the suggestions sent by them show that there are some shortcomings in the clarity of the formulation of these criteria. For example, in the case of the use of different building materials or insulation materials with reduced CO2 footprint (according to the Technical and Financial Assessment guide), for the implementation of environmentally friendly solutions (use of environmentally friendly, sustainable, recyclable fireproof materials, use of passive technologies) additional points are awarded but it is not clear what technical norms should be met (e.g. lambda value). Moreover, there is no list of accepted materials for the insulation or rehabilitation of a building.

To comply with the existing European design directives, materials that do not contain toxic chemicals must be chosen, a criterion missing from the guide.

Another deficiency identified by the evaluators and specialists in the field is the possibility of promoting projects that do not fully comply with the provisions of the design norms. For example, compliance with some building function provisions - NP051.2012 published in MoF 121/5 March 2013, provides a set of criteria that also apply to the design of intervention works. According to this norm, multi-level buildings must be accessible by ramps and lifts. Thus, at the time of the intervention works, including thermal rehabilitation (which is considered an intervention work), it is necessary to provide accessibility to the building e.g. by the inclusion of elevators. If the applicant does not apply these measures, although it may be awarded less points, the technical solution is acceptable although it is inappropriate.

Applicants also argued that the guide does not take into account other energy efficiency programs in place. For example, the technical requirements are not correlated with those of the Casa Verde Plus program. This national program specifies the minimum technical condition for the thermal conductivity of the thermal insulation product, but the technical guide does not specify similar technical norms.

Lessons learnt during the interregional exchange

The lessons learnt during the interregional exchange in phase one of BIO4ECO project constitutes the basis for the development of the present action. The idea of introducing an action that aims to improve the quality of the projects submitted and the clarity of the information in order to increase the number of the participants came from the second Interregional Study Visit organized in Pescara, Abruzzo Region. During this meeting the project partners discussed the existing regional context in terms of energy efficiency & renewable energy production, and proposed a set of integrated solutions for improving the existing policies and strategies identified in the eight regions involved in the BIO4ECO project. One of the problems raised during this meeting was the high investment costs for bioenergy projects, the weak incentives arising from the Common Agricultural Policy and poor dissemination of information of the possible project promoters or other relevant stakeholders. Also during this meeting a funding scheme was presented, which was an inspiration for Centru Region to adapt the existing funding schemes to the project promoters needs in order to create a more attractive environment for investments related to energy efficiency and renewable energy production. The workshop participants concluded that incentives and funding for new technologies are needed as they are more performing, less impactful and have a greater index of acceptance; national intervention is needed as investments are not affordable by regions and that EU projects are particularly strategic for regions.

Taking into account the policy context in Centru Region, the existing incentive schemes for renewable energy production and the EU funding schemes for reducing the energy consumption, after this meeting it was clear that in order to increase the number of the projects approved, and on the other hand to reduce the unsuccessful applications under ROP 2014-2020, PA 3.1, this programme has to be clearer and more accessible for the applicants. Also transparency is required.

Thanks to the interregional learning and exchange of experience within the BIO4ECO project, and after discussing with the local stakeholder group, we concluded that, in order to increase the number of the beneficiaries of ROP 2014-2020, PA 3.1 and ensure the implementation of good projects in Centru Region, the accessing conditions for ROP 2014-2020, PA 3.1 need to be simplified and more guidance and support is required during the application process.

Activities to be implemented

a. Proposed activities to be implemented in order to simplify accessing conditions of the programme

The aim of the action is to reduce the rejection rate of projects and to increase their quality by improving the clarity of the documentation. In this respect, taking into account the reasons for rejection of projects as well as the list of questions formulated by potential applicants, the following activities can be implemented, which will directly aim at reducing the number of rejected projects in the conformity and eligibility stage.

1.1.1 Introduction of a pre-verification stage of project intentions in terms of meeting the eligibility criteria

before the administrative compliance and eligibility stage of submitted projects. Applicants will be provided with a 30-day period during which they will analyse the project intentions with the intermediary bodies under the following aspects:

- Compliance with application forms (completing sections with standard formats)
- Use of the standard forms of annexes, completion of standard models (tables, etc.)
- Compliance with the specific limits in the guides (e.g. specific energy consumption), correlation of the indicators in the application with the energy audits / energy performance certificates)
- Existence of supporting documents according to the requirements of the specific guide
- Existence of documents proving the lawfulness of some existing constructions (screens, balcony closings, etc.)
- Existence of documents in the required electronic formats
- Existence of the note "according to the original" on the requested documents

Thus, after analyzing these issues and eliminating similar grounds for rejection, applicants would apply handing in the revised / complete requests in Stage II. In this way, the rejection rate at the administrative compliance and eligibility stage could be reduced and at regional level a portfolio of projects that can be submitted and can be funded could be created.

1.1.2 Provision of a timeline/timetable of the call and implicitly a prediction of the required application time.
The Managing Authority should provide a planning of the call before its launch date with at least one year before, so that the requesting authorities can begin to elaborate the necessary documentation. These plans are then advertised via intermediary bodies (via the website, mailing lists, etc.).

b. Proposed activities to be implemented in order to improve the clarity of information in the evaluation and selection criteria

1.2.1 Adaptation of the technical evaluation criteria in order to ensure their compliance with the legislation in force, through periodic meetings with experts and technical evaluators that could point out difficulties and deficiencies and who could put forward proposals for improvement. These proposals are to be periodically communicated to the Managing Authority to improve / review these documents.
This activity resulted from discussions with evaluators and experts in the field, which found that at present, the technical criteria allow the approval of projects that ensure only partial compliance with the technical regulations in force. Consequently, the criteria leading to the non- compliance with the technical documentation (Documentation for the Approval of Intervention Works / Feasibility Study should be reassessed so that these criteria lead to the application of technical solutions that are in line with the relevant legislation and which, in turn, lead to a real improvement in the energy efficiency of buildings, while at the same time increase the quality of users' lives.
1.2.2 Introduction in the evaluation criteria of the technical and economic documentation of the compulsory compliance with the technical norms specific to the respective purpose.

Involved actors

- Regional Development Agency Centru
- The Ministry of Regional Development and Public Administration
- Local Authorities participating in the Call
- Technical evaluators, designers and technical specialists

Timeframe

01.09.2018 – 30.09.2020.

(a new call of proposals under ROP 2014-2020, PA 3.1 is estimated to be launched by the end of 2019)

Costs

- N/A

Financing sources

- N/A

Impact and result indicators for Action 1.1 and 1.2						
	Current ratio of rejected projects			Envisaged ratio of rejected projects by 2020 (after the second call for proposal[1])		
	31A	31B	Total 3.1 A and 3.1B	31A	31B	Total
Indicator	29%	31%	30%	15%	15%	15%

[1] A new call of proposals under ROP 2014-2020, PA 3.1 is estimated to be launched by the end of 2019

ACTION 2 – Increase of the public organizations and institutions capacity to access funding programs for energy efficiency and RES

Regional Background

In what accessing European funds is concerned, Romania faces another difficulty, namely the lack of specialized staff from local public institutions to access the available funding programs, to elaborate the necessary documentation to obtain the technical and administrative funds.

Thus, the specialized human resource available in local authorities is a determining factor for their ability to apply both on these funding and later to prepare projects and implement them.

The situation is partly due to the general level of qualification of the personnel in the specific (energy) field and the low experience regarding the writing of projects; on the other hand, difficult access to clear information on accessing European funds represents also a problem at national level. Thus, provision of support to increase the level of professional knowledge specific to the successful proposal, will implicitly lead to an increase in the capacity of public organizations and institutions to access funding programs for energy efficiency and RES.

The analysis of the reasons for rejection of the projects submitted under the call for proposals opened under the ROP 2014-2020, Priority axis 3.1 A and 3.1.B revealed that among the reasons for rejecting the projects are the following:

- Lack of technical expertise and incomplete documentation;
- Failure to demonstrate proof of property;
- Failure to fulfill the indicators mentioned in the specific guide;
- Failure to issue the energy performance certificate for the entire building;
- Double funding.

These reasons are due both to the lack of experience of the staff who elaborated the documentation for the project as well as the qualification / specialization level of staff in technical fields.

Lessons learnt during the interregional exchange

As part of the first phase of learning and experience exchange within the BIO4ECO project, 8 study visits & workshops were conducted. The interregional learning process was sequential and organized around a series of thematic workshops and study visits, involving all partners, external experts and stakeholders from each region. During these meetings the participants debated on the possible solutions to increase the stakeholder engagement and public awareness regarding the bioenergy policies. The lessons learned from the forth workshop held in Riga and the study visit organized in Joensuu were integrated within this action. On these occasions, the participants assessed the importance of involving specialists within the implementation of bioenergy projects, also best practices were presented in this respect.

This way, in order to identify practical solutions to the existing regional challenges related to the transition towards a low carbon economy and its implications for agricultural and forest biomass, within the workshop "THE ENERGY-FOOD-WATER LAND USE NEXUS: POSSIBLE EQUILIBRIUMS FOR THE LOW CARBON TRANSITION SMART LAND USE FOR LOW CARBON ECONOMY" held in Riga, the participants discussed solutions related to sustainable biomass production through functional land management and climate smart forestry. During this meeting, the Latvian University of Agriculture presented an ongoing research (under BIO4ECO project) on

organic soils as land use hotspots in relation to biomass gathering and climate change mitigation targets and Latvia State Forest Research Institute "Silava" (LSFRI "Silava") informed about the Latvian experience on the management of extracted peatlands. LSFRI "Silava" and Ministry of Agriculture of Latvia shared Latvian experience and knowledge on active and sustainable forest management solutions and informed about EU level policy planning perspectives and its possible impacts on forest biomass production in long-run. Project partners from France, North Karelia, Bulgaria, and Slovenia shared knowledge-based experiences with involvement of municipalities in forest resources management, small private forest owners' role in sustainable biomass production, solutions and bottlenecks for e-services, forest biomass production and mobilization form woodlands outside forest territories.

During the project meeting organized in Finland, the GREENHUB project was presented. GreenHUB is an open innovation ecosystems where companies, research institutes, development and educational organizations interact within a common network to facilitate an innovation processes and create new expertise and innovations especially on the field of bioeconomy. The idea is to get the needs of business life to meet the experts, who have the knowledge to solve their problems. The experts meet approximately once in a month and search together solutions to challenges brought to them. When applying similar approaches to new surroundings, openness is the key element in order to get the operation useful.

The lessons learned throughout these project meetings and the good practices presented within these thematic workshops and study visits represented the inspiration for drafting the second action of this PA: *Increase of the public organizations and institutions capacity to access funding programs for energy efficiency and RES* and its activities.

Activities to be implemented

2.1 Creation/activation of a permanent, regional-level working group on energy or energy in a built environment that functions as a thematic group, with advisory role, bringing together specialists, representatives of public authorities, architects, building specialists, university representatives etc.

The working group:

- will provide feedback / information / views on the guides and documentation related to the submission for funding of project applications on energy
- will facilitate experience exchange among public authorities to improve knowledge of comprehensive, modern and efficient technical solutions for the implementation of investments in the field, including examples of best practices identified in the BIO4ECO project during promotional events of the ROP axis 2014-2020, PI 3.1
- will promote networking among stakeholders and will participate in joint meetings with representatives of the business environment and the academic environment during the Working Group meetings of the Sustainable Building Environment (RIS3);

The working group will consist of representatives of biomass clusters, companies with interest in biomass as well as public authorities (municipalities, county councils). The group will be formed on the initiative of the BIO4ECO project experts using an online platform (e.g. LinkedIn) that will provide professionals from the same industry or similar interests a location to share their information and experiences to seek guidance or to establish valuable contacts. Once enrolled, they take part in conversations with members with similar concerns, find answers and send contributions to another member. RDA Centru will be able to invite this group to events (organized exclusively at the members initiatives or associated with events organized in other projects of similar interest).

2.2. Organization of training events for public administration staff, related to topics such as preparing and implementing projects as well as implementing existing regulations on energy efficiency, RES, NZEB.

These trainings started in the first phase of the project. Their main aim was to enhance the public authorities and other stakeholders' capacity. In the monitoring phase, RDA Centru will initiate workshops designed to increase the knowledge, comprehension and application of energy efficient &bioenergy-technologies and analysis of renewable energy resources. These events also aim to improve their skills in project identification, preparation, structuring, and submitting good project proposals. Also, RDA Centru will invite partners with expertise in energy efficiency and the use of RES (e.g. local energy agencies).

At the same time, capitalizing on the good collaboration of the BIO4ECO working group, its representatives will be invited to make proposals to improve the initiatives proposed for funding by local authorities, providing input on the potential of RES, including biomass and its exploitation / use in the region.

Involved actors

- Regional Development Agency Centru
- The Ministry of Regional Development and Public Administration
- BIO4ECO Working Group at regional level
- Local Authorities participating in the Call on energy efficiency

Timeframe

01.09.2018 – 30.09.2020.

By 2020 is estimate to organize 2 events under action 2.1 and 1 event under action 2.1

Costs

- Costs related to the organisation of events
- Travel and subsistence costs

Financing sources

- Ongoing projects/programmes budget

Timeframe	Impact and result indicators for Action 2.1 and 2.2				
	Action	Current number of organised events	Current number of people involved	Envisaged numberof organised events	Envisaged number of people involved
2020	2.1	2	40	3	50
2023	2.1	6	90	7	120
2020	2.2	1	20	2	30
2023	2.2	1	40	3	100

ACTION 3 – Easier access for local and regional actors to up-to-date technical solutions in the field of RES use in general, and biomass in particular and knowledge improvement

Regional Background

Changing technical solutions are a major issue for local authorities because they often do not have dedicated staff (energy manager) and the appointed staff for writing the applications cannot keep up with new trends in the energy efficiency market, and of the use of energy from renewable sources.

Lessons learnt during the interregional exchange

During each project meeting the partners presented good practices and up-to-date technical solutions for using local renewable energy sources and project implementation. The good practices presented by the Finnish partners GREENHUB project and the Sirkkala Energy Park which is a research, demonstration and educational platform which promotes both national and regional development goals to increase the knowhow, production and use of renewable energy. Both projects presented by the Finnish partners are examples of functional cross - collaboration between public authorities, enterprises and researches in order to increase knowledge on energy solutions with joint RD&I work. Also these projects aim to improve the stakeholders' ability to adapt to changes and to implement projects according to the national regulation and by respecting in construction and energy system regulations.

Based on the lessons learned during the study visit in Joensuu, RDA Centru shaped the third action regarding the access facilitation of local and regional actors to up-to-date technical solutions and knowhow in the field of RES use.

Activities proposed to be implemented

Promotion and dissemination, in a centralized framework - database / platform - on technical solutions, project models, best practices, with access for specialists, potential applicants on financing programs for energy and RES solutions.

The platform will be created without financial effort using a section of the RDA Centru's own website or other relevant organizations' websites in this area, where the structure of links will be created to domain-based information (energy efficiency, renewable energy sources (ongoing projects, good practice cases, technical solutions) that will be updated with the information provided by the BIO4ECO Working Group as well as by other biomass stakeholders. The links can direct the user to the database of already existing projects or to a database (for example, one similar to Google Drive) with open access to everyone interested. The added value is given by intuitive structured centralization by domains and data type of information, so the tool can do a more efficient:

- Promotion of support guides on technical solutions for applicants making them readily available
- Promotion of centralized biomass databases (materials, products, equipment, solutions, accredited companies etc);
- Promotion of databases with good practice cases of projects implemented or in the process of implementation regarding energy efficiency in general and the use of RES in particular (with emphasis on biomass)

Involved actors

- Regional Development Agency Centru
- Biomass Clusters in Centru Region
- Professional Associations
- Local / regional energy agencies
- Universities
- BIO4ECO Working Group

Timeframe

01.09.2018 -30.09.2020

Costs

- Personnel related costs

Financing source

- Ongoing projects/programmes budget

Impact and result indicators for Action 3			
Timeframe	**Action**	**Current number of users of the tool**	**Current number of people involved**
2020	**3.1**	**N/A**	**80**
2023	**3.1**	**N/A**	**200**

ACTION 4 –Support given to the growth of RES energy production by encouraging the deployment of alternative RES systems, including biomass, in future financing schemes

Regional Background

The Energy Performance of Buildings Directive requires Member States to set minimum energy performance requirements for major rehabilitation works of new and existing buildings. Article 9 (2) of Directive 2010/31/EU aims to increase the scope of rehabilitation by defining national policies to support the rehabilitation of existing buildings at higher NZEB levels. The very low or nearly zero energy level should be mainly covered with energy from renewable sources, including renewable energy produced on-site or nearby.

At present, the Regional Operational Program, through Priority Axes 3.1.A and 3.1.B, encourages to a small extent the implementation of alternative energy systems in the financed projects. In the case of operation 3.1.B there is an obligation that 10% of the produced / consumed energy be from RES and in the case of operation 3.1.A, the indicator is 5%.

The evaluation criteria do not contain clear specifications on some technical and legislative aspects related to passive and ecological buildings nor on which technical norms must be met for building materials used for the thermal rehabilitation of buildings. Thus, the criteria encourage the use of low- carbon footprint materials at smaller extent, although additional scoring is foreseen for projects that require the implementation of environmentally sustainable solutions.

For example, the increase of energy efficiency of buildings should be achieved by using energy from alternative energy systems at a higher level (desirably over 70%) compared to what is currently required.

Thus, given the energy potential of biomass, which is the most important renewable energy source in Centru Region, investments can be made in biomass processing plants (wood, wood waste, biogas, etc.) available on a wide scale.

A model that could be adopted is the ENERGY FARM concept, a project which can be submitted by county councils or local public authorities. The project aims to transfer technological knowledge, the elaboration of methodological guides for the creation of sustainable buildings (NZEB) that combine the local specific. Also, the pilot project run by ICPAO Mediaş can be a model to be followed for the recovery of wood waste from agricultural forestry exploitations. Both these project ideas were discussed and explored within the LSG meetings with experts and the representatives of the quadruple helix from Centru Region (public authorities, researchers, NGOs, companies)

Lessons learnt during the interregional exchange

The key objective of BIO4ECO project was to create an interregional learning environment, based on European exchange of experience and good practices transfer. This way, during the first phase of the BIO4ECO project, each partner shared best practices related to land & forest sustainable management and new technologies for bioenergy production. The goal for all these projects is to increase the share of renewable energy in the global energy mix in each region involved in BIO4ECO.

Taking into account that one of the project's outcomes is to increase **the share of renewable energy** in the overall energy mix (17 M€ of ERDF funding benefited by the project), this issues was tacked form the beginning

of phase one, From the first study visit in Catalonia (where the project partners presented pioneer projects of using biomass and biomass by-products for heating &cooling including a project related to forest management promotion in order to facilitate the transition to low carbon economy) to the last visit in France (where the French project partners shared their views &knowledge on forest management and the use of biomass heating systems) , each partner shared good practice on how to increase the renewable energy production and the share of RES in the global energy mix in order to facilitate the transition to a low-carbon economy at regional level. Also during these meeting the partners assessed the possibilities to improve the current policy instruments taking into account the EU Strategies on energy, biomass, forests and low-carb economies. Moreover, during the last meeting in Paris, a representative of the DG AGRI, invited at the workshop, outlined the European positions and strategies regarding forest biomass use.

Taking into account the good practices presented by each project partner and the discussions had on these meetings, RDA Centru outlined the forth action as an objective in line with the EU strategies: to increase the RES share out of the energy mix and to encourage new investments in the field of energy by using Structural Funds/other regional/national funding schemes.

Activities proposed to be implemented

4.1. Promotion of the growth of the share of renewable energy as part of the solutions regarding enhancement of energy efficiency and reduction of CO2 in programs funded by the future Structural Funds.

Thus, in the design of future energy efficiency financing schemes, the increase in the share of renewable energy sources use will be proposed to ensure the energy requirement of buildings from a mandatory 10% to a minimum of 15%.

Moreover, following the consultations with the regional actors and the BIO4ECO project working group, it was revealed that there is a need to introduce projects / solutions for the use of biomass from energy crops in the concept of future programs, especially in heating systems of buildings public in rural areas and beyond. These proposals are correlated with the local potential of renewable energy sources.

This action will be implemented by adapting the future funding program guidelines / guides as well as the assessment criteria so as to further encourage projects that reduce CO2 footprint and promote alternative renewable energy systems.

The implementation of this action aims that building rehabilitation works, using the Axis 3.1B funds, to raise the standards of these buildings to NZEB standards and to increase the use of local renewable energy sources, especially biomass.

Involved actors

- Regional Development Agency Centru
- The Ministry of Regional Development and Public Administration

Timeframe

01.09.2019 – 31.12.2023

Costs

- N/A

Financing sources

- N/A

Impact and result indicators for Action 4		
	Energy produced from RES (POR Axis 3.1.B)	**Improvement of energy produced from RES**
Indicator	**10%**	**15%**

6. Monitoring mechanisms

Responsibilities

Axis 3.1 ROP 2014-2020 will be monitored during the second stage of implementation of the BIO4ECO Project for two years in accordance with the obligations assumed by the project partners.

The Regional Development Agency Centru will monitor the implementation of each action proposed and will evaluate its implementation, being also responsible of the revision of each action, if necessary. Monitoring and evaluation as well as making possible adjustments to the action plan involve cooperation and cross-sectoral collaboration with other organizations. In this respect, RDA Centru will engage stakeholders (public authorities, NGOs, companies, energy agencies, biomass clusters etc.) in the implementation phase of the action plan.
RDA Centru will oversee the implementation of the action plan activities, will be in charge with the quality evaluation of this implementation by respecting the deadlines. The RDA Centru's team will have regular meetings to analyse the state of the art of the implementation and will prepare progress reports.

a) Indicators for monitoring and evaluating the Action Plan

- Number of events organized for stakeholder engagement
- Number of good practice cases identified and included in regional strategies
- Number of events related to the ROP 2014-2020, P.I. 3.1 where the good practice cases identified by BIO4ECO are presented
- Number of people who have strengthened their capacity to implement energy efficiency measures through ROP 2014-2020, P.I. 3.1 due to exposure to good practice cases

b) Monitoring mechanisms - the methodology for evaluating the expected results.

Monitoring the implementation of the action plan aims to achieve the objectives proposed by carrying out activities using the allocated human, material and financial resources, respecting the planning of activities within the allocated time frame.
In the event of deviations from planning or other conditions that make it difficult to implement the actions, the monitoring activity will generate adjustments / restructuring actions - additional allocations to ensure the most effective correction of the situation so as to achieve the expected results.
The system for monitoring and evaluating the outcomes and impacts of the implementation of the action plan, allows an assessment of the extent to which the activities have achieved their proposed objectives and whether the qualitative and quantitative results are those envisaged.

The evaluation is done at 2 key moments of an activity:
- Early-stage evaluation: assessing the potential impact of the action and the fairness of the assumptions;
- The final evaluation is done after an activity has been completed to assess whether the expected results have been achieved.

The evaluation process will take into account the following aspects:

- degree of indicators reached ;
- the quality of the implementation of the PA's activities ;
- results' sustainability;
- lessons learned;

The evaluation will be based on the statistics prepared by RDA Centru for the actions that are directly responsible for statistics on submitted projects, rejected projects or on the basis of completed questionnaires in the organized events, evaluation sheets for the results of the organized events completed by the participants / trainees; event reports (experience sharing events, networking) statistical data on database visits as well as the number of users.