



ACTION PLAN

SOUTH WEST OLTENIA REGIONAL DEVELOPMNET AGENCY

**"SUPPORTING THE CLEAN ENERGY TRANSITION OF COAL-INTENSIVE
EU REGIONS" - DECARB**

Cuprins

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| ABOUT THIS ACTION PLAN | 3 |
| 1. POLICY CONTEXT OF DECARBONISATION IN THE SOUTH WEST OLTEA REGION | 4 |
| 1.1 EU context..... | 4 |
| 1.2 National context..... | 4 |
| 1.3 Regional context..... | 4 |
| 2. POLICY INSTRUMENT ADDRESSED: REGIONAL OPERATIONAL PROGRAMME..... | 5 |
| 3. LESSONS LEARNED | 7 |
| 3.1 Good practice example..... | 10 |
| 3.2 Sustainability strategy..... | 12 |
| 3.3 Project stakeholders | 12 |
| 4. ACTION 1 – MONITORING THE IMPLEMENTATION OF FUNDED PROJECTS FINANCED FROM REALLOCATIONS WITHIN AXIS 3.1B, FUNDED BY ROP 2014-2020 | 17 |
| 4.1 Overview of the Policy Improvement that this Action refers to..... | 17 |
| 4.2 Background..... | 29 |
| 4.3 Timeframe..... | 29 |
| 4.4 Stakeholders involved | 29 |
| 4.5 Costs and Funding Sources | 29 |
| 4.6 Risk and Contingency Plans..... | 29 |
| 4.7 Monitoring..... | 30 |
| 5. ACTION 2 – MONITORING THE IMPLEMENTATION OF PROJECTS FUNDED BY ROP 2021-2027 | 30 |
| 5.1 Overview..... | 30 |
| 5.2 Background..... | 33 |
| 5.3 Timeframe..... | 33 |
| 5.4 Stakeholders involved | 34 |
| 5.5 Costs and Funding Sources | 34 |
| 5.6 Risk and Contingency Plans..... | 34 |
| 5.7 Monitoring..... | 34 |

ABOUT THIS ACTION PLAN

This Action Plan is prepared by SWORDA (South West Oltenia Regional Development Agency in the context of the Interreg Europe project “DeCarb - Supporting the clean energy transition of coal-intensive EU regions” (Index number PGI05587).

DeCarb - Supporting the clean energy transition of coal-intensive EU regions brings together 9 partners from 9 countries to exchange experiences and transfer knowledge on how to transition from carbon-intensive towards clean energy economy:

1. Bulgaria – Stara Zagora Regional Economic Development Agency
2. Poland - Lodzkie Region
3. Hungary – ENEREA Eszak-Alfold Regional Non-profit Energy Agency
4. Romania – South-West Oltenia Regional Development Agency
5. Germany – Ministry for Economic Affairs and Energy, State of Brandenburg
6. Denmark – House of Energy (cluster)
7. Greece – Regional Association of Local Governments of Western Macedonia
8. Slovenia – Energy Agency of Savinjska, Saleska and Koroska
9. Spain – Energy Agency Extremadura

The project supports regions so they can secure and support their sustainable development, innovation, economic and societal stability, as well as their role in the 2030 energy mix. DeCarb will support public authorities to initiate efforts, join forces and exchange experiences in order to identify growth strategies and to mitigate the impact of decarbonisation, make the most of EU funds/financing tools and promote public dialogue on conflicting issues. The project impact will include increased capacity of 200 public administration employees to effectively support new growth, EUR 19 M unlocked to support projects and increased awareness and consensus on support measures for clean energy transition.

Within the Plan, South West Oltenia Regional Development Agency aims to present the actions taken in order to support the region in its attempt to fulfil the efforts in transition process to a green economy with lower carbon emissions.

This Plan is based on the lessons learned during Phase 1 and the impact that cooperation and exchange of experiences can have and how they can be implemented in a different area and a different culture.

Project: Supporting the clean energy transition of coal-intensive EU regions

Partner organisation: South-West Oltenia Regional Development Agency

Other partner organisations involved (if relevant): _____

Country: Romania

NUTS2 region: RO41 South-West Oltenia Region

Contact person: Lavinia Cretu, DeCarb Activity Implementation Manager, Mihaela Lupanescu, DeCarb Communication Manager

email address: office@adroltenia.ro, lavinia.cretu@adroltenia.ro, mihaela.lupanescu@adroltenia.ro

phone number: 0251.411869, 0251.414904, 0251.418240, 0351.403900

1. Policy context of decarbonisation in the South West Oltenia Region

1.1 EU context

The European Union's 2030 climate and energy framework assumes a significant reduction in carbon dioxide, which forces the phasing out of fossil fuels and replacing them with carbon-neutral energy technologies. In addition, the policy goals for 2050 are to achieve carbon neutrality in the European Union. Specifying specifically the targets for 2030, they assume: a 40% reduction in greenhouse gases compared to the 1990 level, 27% of energy from renewable sources (share of energy consumed) and 27% improvement in energy efficiency. Decarbonisation programs are designed to help achieve this goal.

The move away from fossil fuel-based energy, which is fundamental to climate protection, can have serious social and economic implications. Hard coal mining in the European Union provides employment for approx. 240 thousand people. The numbers include workforce directly employed in the industry and subcontractors - companies that provide technology, equipment, transport and logistics services.

To be effective, energy transformation must be conducted in accordance with the principles of social justice. Therefore, it requires the coordinated efforts of many partners: central, regional and local authorities, scientific institutions and trade unions for the careful development of policies and regulations. The measures should allow for minimizing the negative effects, i.e. enabling changes in employment, e.g. transfers to other energy sectors and the inclusion of employees in the industry in social programs. Particular emphasis should be placed on harnessing the potential of companies involved in the coal supply chain, facilitating entry into other markets or sectors with products or services adapted to the needs of new markets. Activities may include programs to facilitate research and development aimed at developing new products and services.

The low-carbon energy shift of EU economies will have a profound economic & social impact on regions extensively involved in coal value chains. It is however acknowledged that this transition needs to be fair; EC's "Clean Energy for All Europeans" package was set in place to speed the clean energy transition and growth & job creation. To this end, DeCarb will support public authorities to initiate efforts, join forces and exchange experiences to:

- a) identify growth strategies to mitigate the impact of de carbonization,
- b) make the most of EU funds & financing tools, and
- c) promote public dialogue on conflicting interests.

1.2 National context

Romania's energy strategy 2019-2030, with the perspective of 2050 does not contain measures for the transition from coal. Being that, the Commission has recommended a revision of the Energy Strategy and the change of the strategic vision for our country.

Moreover, Romania needs to develop and implement a coal transition strategy. The strategy should include a timetable for the closure of mines and the withdrawal of thermal power plants, as well as the installation of new renewable capacities, and other measures needed to support the energy system. The strategy must identify solutions and measures for a fair transition, as well as propose viable financing options.

In 2020, was announced the opening of the Equitable Transition Operational Program 2021-2027, financed by the European Commission, a program that offers support for a fair transition in the coal bases in Hunedoara, Gorj, Prahova, Galați, Dolj, Mureș counties.

In Romania coal-based energy production represents about a quarter of the energy mix. Almost all the activity of coal mining and coal-based energy production in Romania is concentrated in the Jiu Valley and the Oltenia area, and these two areas will be the most vulnerable.

In the near future Romania has to increase to 35% renewable energy.

1.3 Regional context

The region is rich in mineral resources. The cost coal extraction increases unlike to the quality of coal and the extraction techniques. This may be a trigger point for incentivizing renewable and low carbon energy. Moreover, the local work forces have a great availability of re-training and skills development programs.

Coal mining activity is concentrated in the two sub-regions - Jiu Valley and Rovinari / Turceni - in Hunedoara and Gorj counties. 90% of employees in mining activities in Romania work in the two counties and the workforce directly dependent on coal mining or coal-based energy production is 18,600 people, with another 10,000 people who are indirectly dependent on coal.

The lignite extraction activity in the Oltenia Mining Basin is carried out on the territory of three counties: Gorj, Mehedinți and Vâlcea.

In the context that all the European Union members need to commit its efforts into respecting European Green Deal, the project actions will influence the South West Oltenia region directly, and extended the whole country, taking steps forward in the context of climate crisis and global efforts to limit temperature increases to below 1.5 Celsius.

2. Policy instrument addressed: Regional Operational Programme

Romania ranks 7th among coal producers in the EU member countries, having a long coal mining tradition, stretching back over 150 years. Total hard coal resources are estimated to be 2.446 million tonnes of which 252.5 million tonnes are commercially exploitable within the currently leased areas, although as little as 11 million tonnes might be economically recoverable. Proven reserves of lignite total 280 million tonnes, with a further 9.640 million tonnes of resources. Of these deposits, 95% are situated in the Oltenia mining basin, where more than 80% can be surface mined.

SWO RDA is an Intermediate Body for the 2014-2020 ROP for Romania, holding the same role as in the 2007-2013 period. SWO RDA is managing the Structural Funds in the region, the regional planning and programming, as well as the development of sector strategies (e.g. RIS). The RDA has been involved in preparing these regional development strategies since the preaccession phase.

SWO RDA as Managing Authority and program holder for the South-West ROP Oltenia 2021-2027, is in the process of elaborating the future Operational Program dedicated to the region, and has achieved, starting from the development needs and challenges identified in the partnership consultations, a new version of the ROP South-West Oltenia 2021-2027.

ROP South West Oltenia 2021-2027 is a strategic programming document and the main financing instrument for the development projects of the region from the European Regional Development Fund (ERDF) and the state budget, addressing both public authorities and the private environment, in order to increase the quality of life in the region.

In the period 2021-2027, approximately 1.2 billion Euros will be allocated in the South-West Oltenia Region for investments aimed at research-innovation, technology transfer, increasing the competitiveness of SMEs, digitalization for the benefit of citizens, energy efficiency, urban development, mobility and accessibility, green infrastructure and biodiversity, educational infrastructure, tourism and cultural heritage.

During the consultations in order to outline the investment priorities at regional level, the Decarb project team was involved in order to promote the objectives assumed within the project, especially projects aimed at decarbonization at regional level, projects that influence the reduction of carbon emissions and green energy.

The Regional Operational Programme (ROP) aims at promoting smart sustainable and inclusive growth in all regions in Romania making them more attractive places in which to live and work. The programme addresses the major development challenges for Romania: regional competitiveness, sustainable urban development, the low-carbon economy, and economic and social infrastructure at regional and local level.

The Regional Operational Programme (ROP) for Romania includes thematic objectives (TOs), comprising the national strategy for the socio-economic development of all regions of Romania, particularly

focusing on economic growth, employment, businesses, health, natural & cultural heritage, education, and tourism.

Influencing the policy instrument is a continuous activity that will last during its implementation and after that.

DeCarb team transmitted to the Ministry of European Funds an address with proposals regarding the introduction of specific axes / PIs dedicated to coal-exploiting areas in the South-West Oltenia Region within the ROP 2021-2027.

The proposed measures came as a result of the debates that took place within the DeCarb project working group. The response of the Ministry of European Funds was positive, they inform us that they will ask for our support for the elaboration of Fair Transition Plans when the relevant European regulations will be finalized and all regions will be clearly identified of type NUTS 3 who will be able to access financing from the Fund for a fair transition.

Within ROP 2014-2020 S-W Oltenia RDA financed projects which have proposed actions in accordance with DeCarb objectives:

Priority Axis 3: Supporting the transition to a low-carbon economy.

Priority Axis 5 - Improving the urban environment and preserving, protecting and sustaining the cultural heritage.

In order to be able to address the policy instrument, and in accordance with the specifications that at least one action must be addressed to the existing ROP, 2014-2020, the project team consulted with the colleagues at South-West Oltenia RDA level, regarding the situation of the ROP axes that are in line with the project purpose and identified some actions which we can propose to the Managing Authority, in order to increase the degree of implementation of the measures with impact on decarbonization: over- contracting projects, relaunching project calls and reallocation of funds for these axes.

SWORDA's concern for influencing the Policy Instrument has materialized since the second Semester, when, given that within the Investment Priorities relevant to the DeCarb project, potential beneficiaries failed to submit projects by the submission deadline or submitted projects which were not financed, although their implementation would be particularly important for the local community and the development of our region, SWORDA submitted to the ROP Managing Authority a request to relaunch the project calls within some IPs, including IP 3.1 A, 3.1B, 3.1C, 5.1.5.2 (05.04.2019).

In the 3rd Semester SWORDA addressed a request to the Prime Minister of the Romanian Government, regarding the increase of the outsourcing degree within the ROP 2014-2020 (26.08.2020) with reference to Priority Axis 3: Supporting the transition to a low-carbon economy and Priority Axis 5 - Improving the urban environment and preserving, protecting and sustaining the cultural heritage, relevant to DeCarb Project.

Following the steps of the Regional Development Agencies, as a result of the additional reallocation proposals, the Ministry of Regional Development and Public Administration – ROP Monitoring Committee 2014-2020 issued Decision no.117 / 18.12.2019 approving the modification of the indicative financial allocations to related regional level POR 2014-2020.

Encouraged by the success of previous steps, in 5th Semester, the project team together with colleagues from the SWORDA Intermediate Body, proceeded to a new analysis of the situation of the ROP 2014-2020 axes in July 2020, finding the following:

Within the ROP / 2019/3 / 3.1 / A / ""PHOTOVOLTAIC SYSTEMS"" / 1/7 regions, only one project was submitted, but it covers all the available allocation.

Within 3.1.B the interest of the applicants was major, being submitted 114 projects, which highlights the high needs that exist in the region on these Investment Priorities.

Working with the DeCarb team, South-West Oltenia RDA submitted to the Managing Authority requests to reallocate funds so that all remaining competing decarbonisation initiatives can be contracted.

Priority Axis 3: Supporting the transition to a low-carbon economy and Priority Axis 5 - Improving the urban environment and preserving, protecting and sustaining the cultural heritage, were also included in the South-West Oltenia RDA request addressed to the Managing Authority to implement the proposal of

reassignment of funds from other programs financed by ERDF for the amounts that will not be requested for settlement to the ROP 2014-2020. According to the General Regulation no. 1303/2014, the contribution of other programs and priorities may be reallocated in accordance with the requirements of thematic concentration.

As a result of these steps, additional funds were reallocated, and within PI 3.1.C and PI 3.2 the Managing Authority has issued instructions (Instructions no.135/23.01.2020) that allow the contracting of projects within the limit of 200% of the allocation so that financing contracts can be signed for all submitted projects.

Though the country has a strong performance in hydropower, other renewable sources of energy have not been similarly exploited. Wind and solar energy are under-represented in the country's energy mix (unlike other EU countries,) and their integration into the electricity grid is challenging; the problems range from losses in the transmission & distribution networks to the need for electricity storage systems (particularly acute when photovoltaic installations increase).

Phasing out coal and lignite power production will also result in the contraction of the strong coal-mining sector, especially in the Oltenia region; nevertheless, there are not any specific plans in place to address the crucial issues that emerge and namely how to secure: a) growth by reconverting land to other productive uses, and b) employment by directing the workforce towards the clean energy sector.

Energy efficiency is one of the priorities of Romania's RIS3 strategy; to this end, energy production and distribution are specifically named in terms of capabilities required, as means to reach targets mostly related to energy consumption. Supporting the proliferation of renewables can also contribute to the resource efficiency aspect that is linked to the priority of next generation manufacturing.

As for the ROP 2021-2027 the DECARB team will monitor the Priority Axis 3 - Energy efficiency and green infrastructure and Priority Axis 4 - Sustainable urban mobility.

3. Lessons learned

The exchange of experience carried out in the project, both in analytical activities, international and local meetings, consultations, workshops, study visits, good practices identified in the project, provided knowledge and inspiration for initiatives promoting SWORDA development which can be undertaken in the South West Oltenia Region.

The general objective in the region is to increase the production capacity of electricity from renewable sources, increase energy efficiency, improve air quality and reduce greenhouse gas emissions, by using photovoltaic panel systems to produce electricity needed for own consumption and delivery of surplus in the national energy system.

Even though decarbonisation is processed differently in European Union countries, with countries that are well advanced and others just starting out, the DeCarb project offers an important opportunity to the partners involved, providing a realistic picture of the transition to a low carbon economy in partner countries. Addressing the socio-economic, environmental, employment impact of both the experts working on the project and the joint dialogue in the interregional learning sessions allow for effective planning and action for the development of the coal-intensive sector at each level of the participating regions. Planned and ongoing exchanges of experience bring together stakeholders with common concerns, who gain experience and can prepare for future collaborations. Examples of good practice provide solutions to address needs identified in the regions involved in the project.

For the partner region South-West Oltenia, the activities of the DeCarb project generated a qualitatively superior approach for the transition from an economy based on the intensive exploitation of coal to a green economy, with low carbon emissions. The main themes are already successfully applied in the other partner countries in the project.

Within the project were organized study visits on key issues related to decarbonisation and the transition to clean energy of coal-intensive regions, in order to promote interregional learning and capacity building between partner organizations and their stakeholders:

- "Analysis of the needs for environmental restoration and land restoration in the DeCarb regions."

The study visit was organized in Germany, in the Brandenburg Region, by the Ministry of Business Economy and Energy of the state of Brandenburg between 6 and 7 November 2019.

Regional actors have presented good practices on rebuilding the ecological functionality and integrity of these degraded landscapes, while stimulating the productive functions of the land to mitigate the negative impact of the coal mining phase for labor and local income. Emphasis was placed on post-mining land, environmental restoration and restoration processes following the cessation of coal-based activities in the region (either the closure of coal mines or the decommissioning of coal-fired power plants).

The purpose of the study visit was to provide detailed information from an advanced region in land restoration planning on all operational, administrative and technical aspects of land restoration processes in former coal mines.

Items to be transferred for policy improvement:

Involvement of the local regional authority in supporting the management of the post-mining environment, through national or European financing mechanisms for obtaining results with regional impact, by recultivating land for biomass production and returning them to the civil circuit by transforming former coal mines into tourist destinations.

The mission of the DeCarb project is to exchange experiences and the transfer of knowledge on the transition from the carbon-intensive model to a clean energy future, supporting regions to ensure sustainable economic and societal development stability and a role in the 2030 energy mix.

The results of the workshop on "Needs Analysis on Environmental Restoration and Land Restoration in the DeCarb Regions" were disseminated to participants in the regional stakeholder meeting. The aspects presented had a major impact on stakeholders, which materialized by supporting SWORDA actions to promote the over-contracting projects with a direct impact on the development of RES / energy efficiency and increasing the quality of community life.

Action 1 - Monitoring the implementation of funded projects funded from reallocations within Axis 3.1B, funded by ROP 2014-2020 is based on the lessons learned from the exchange of experience process in the DeCarb project, and is related to the results of "A3.2 "Needs Analysis on Environmental Restoration and Land Restoration in the DeCarb Regions" and study visits in Cottbus, Brandenburg region, Germany.

- "Large-scale introduction of renewable sources in the energy mix of partners"

The study visit was organized in Badajoz, Extremadura region (Spain), between March 13 and March 14, 2019. The aim was to discuss current energy trends and the importance of renewable energy sources. (DeCarb activity "A3.1 Interregional workshop on the large-scale introduction of renewables in partners energy mix")

The region of Extremadura (Spain) covers the local demand for electricity entirely from renewable energy sources. The total energy production (produced from solar energy, hydroelectricity and wind energy) is 22.5% of RES, of which 60% is from concentrated solar and photovoltaic energy. 100% of household demand is covered by these energy sources.

The distribution of solar energy on the national territory is relatively uniform. The minimum values are registered in the depression areas, and the maximum values in Dobrogea, the East of Bărăgan and the South of Oltenia (South West Oltenia region).

Solar energy can be used for energy purposes either in the form of heat, which can be used for the preparation of domestic hot water and heating of buildings, or for the production of electricity in photovoltaic systems.

Romania has fulfilled its European commitment for 2020 to increase the share of RES to 24% of gross final energy consumption (share of RES), reaching for this indicator a level of 26.3% in 2015.

Exceeding the scheduled target well in advance is the result of a rapid increase in electricity production from RES (SRE-E), especially in micro hydropower, wind and photovoltaic power plants.

Investments in these capacities are the effect of the subsidy through the green certificate scheme, which imposes a not negligible cost for the final consumer.

Photovoltaic capacities are to be developed both in the form of medium-capacity solar parks, made on degraded or poorly productive lands, and in the form of small dispersed capacities made by energy consumers who can make the transition to the prosumer.

Renewable energy generation is also a response to a sustainable energy transition to a low-carbon economy, in line with sustainable development policies.

The promotion of energy efficiency measures in the ROP policy instrument 2014-2020 is essential in the context in which the cities in the South West Oltenia region face and have to manage a series of environmental aspects, such as air quality, energy efficiency, etc.

The priority axis dedicated to supporting the transition to a low-carbon economy will finance investments in increasing the energy efficiency of public buildings owned and occupied by both local and central authorities, residential buildings, public lighting systems, and investments designed to reduce CO2 emissions in urban areas, based on sustainable urban mobility plans.

Items to be transferred for policy improvement:

Involvement of the local / regional authority in supporting the management of large-scale use of RES, post-mining, through national or European funding mechanisms to achieve results with regional impact, by increasing up to 100% of energy produced from renewable sources, to ensure demand regional energy.

The support of this measure within the ROP 2014-2020 can be achieved by over-contracting projects, relaunching project calls and reallocating funds, in accordance with the increased interest of the beneficiaries.

The results of the DeCarb activity "A3.1 Interregional workshop on the large-scale introduction of renewables in partners energy mix" were presented to stakeholders and they were mobilized to support SWORDA's action to request the Managing Authority to over-contracting projects on renewable energy sources and energy efficiency, essential components of decarbonization and the development of an emerging green economy in coal-dependent regions.

Action 1 - Monitoring the implementation of funded projects funded from reallocations within Axis 3.1B, funded by ROP 2014-2020 is based on the lessons learned from the exchange of experience process in the DeCarb project, and is related to the results of "A3.1 DeCarb activity Interregional workshop on the large-scale introduction of renewables in partners energy mix" and study visits in Badajoz Spain

- „Labour re-skilling needs in economies affected by decarbonisation”

The study visit was organized in Aalborg, Denmark, during September 08-09, 2021. The two-day event focused on "Labour re-skilling needs in economies affected by decarbonisation", and included study visits that had the role of stimulating the exchange of experience and learning.

Partners and stakeholders had the opportunity to participate in the requalification workshop which had 3 parts.

Partners and stakeholders visited various facilities to see how the energy transition has improved the economic development of the municipality:

They visited the Nordjyllandsværket (an existing coal-fired power plant) where they saw a presentation on the conversion from coal to renewables.

Then they visited Nordkraft (the old coal-fired power plant in the city center), where the transition from a coal-fired power plant to a center of culture / community / activity was visible.

Participants visited the Port of Aalborg, which hosts the manufacture of the largest wind turbine blades in the world, the manufacture of the largest offshore wind turbine foundations in the world, as well as the largest wind turbine testing facility in the world.

Items to be transferred for policy improvement:

Involvement of local / regional authority in supporting the management of the post-mining workforce, through national or European funding mechanisms to achieve results with regional impact. Through labor re-skilling the energy sector for coal workers will be able to acquire skills for compatible jobs in the RES sector, in order to increase their employment opportunities and at the same time cover the demand for skills in the RES sector.

The aim of the workshop was to identify possible ways to boost labour re-skilling in DeCarb economies that are affected by decarbonisation . The experience increased the enthusiasm of the SWORDA team to support as much as possible the promotion of as many energy efficiency projects as possible for the new ROP 2021-2027, taking into account the fact that the new programming period has taken shape and is still in progress, offering the possibility to influence this instrument through the active participation of SWORDA.

Action 2 – Monitoring the implementation of projects funded by ROP 2021-2027, wants to identify possible ways to boost labour re-skilling in economies affected by decarbonisation, based on the lessons learned from the exchange of experience process in the DeCarb project, and is related to the results of “Labour re-skilling needs in economies affected by decarbonisation”, and study visits in Aalborg, Denmark.

3.1 Good practice example

South-West Oltenia RDA project team worked for the identification of Good Practices on decarbonisation and clean energy transition. There was identified among stakeholders as an example of good project practice the project: Innovative energy conservation technology at coal-fired power plants, main institution involved SC CET Govora SA, Ramnicu Valcea City as a result of a national research programme: Innovation 2008 (INOVARE 2008).

The specific objective of the project being the development of an efficient slag collection method resulting from lignite combustion and the preparation and recovery of an alternative fuel consisting of slag and a similar amount of woody biomass.

The proposed process, carried out with minimal handling and investment costs and can be applied to all lower grade coal-fired boilers in the country, but certain technological restrictions must be taken into account.

South-West Oltenia RDA also sent the good practice examples and posted it on the Interreg site.



Title of the good practice: Innovative energy conservation technology at coal-fired power plants

Specific objective

The development of an efficient slag collection method resulting from lignite combustion and the preparation and recovery of an alternative fuel consisting of slag and a similar amount of woody biomass.

Detailed information on the good practice

CET Govora is a cogeneration power plant - CHPP (combined production of electricity and heat) that uses, as a basic energy resource, the lowest grade coal, lignite - from the coal basin of Oltenia. Thermal energy is produced as industrial steam and primary thermal flow for district heating.

The slag is a coarse solid waste resulted from the process of burning lignite on the post-combustion grills located below the coal boiler hearths. Normally, the slag is first crushed and hydraulically driven through water channels to the solid combustion by-products evacuation system and to the landfill.

The slag contains combustible materials due to incomplete combustion from a mechanical and chemical point of view, unburned which represents on average approx. 3% of the amount of lignite that feeds the boiler hearth. The unburned carbon particles are concentrated in the molten slag discharged below the boiler's hearth into a special tank, where it is cooled in the water flow and continuously discharged with the help of inclined scraper strips.

The proposed process for the energy recovery of unburned slag, by creating a recirculation flow in the main fuel supply stream, is carried out with minimal transport and investment costs, applicable to all lignite coal boilers, but some technological constraints must be considered.

In homogeneous mixture with biomass and coal, when the slag is introduced controlled in a continuous regime in the boiler's hearth, the fuel mass from the slag burns in suspension, and its tailings content turns to fly ash following the flue gas path without causing agglomerations on the exhaust flow from the boiler base. Thus, the entire content of unburned slag fuels is energetically recovered at minimal costs.

Resources needed

The total NOVENER project budget was 1,634,234 €, of which 61.8% represented the co-financing of Govora CHPP. From the state budget, through the INNOVATION program, the project benefited from a grant of 624,277.5 € (38.2% of the total value of the investment).

At this project worked approx. 100 specialists from the three entities that formed the NOVENER partnership (ISPE, WING Computer Group), coordinated by CET Govora.

Timescale (start/end date) August 2013 – November 2015

Evidence of success (results achieved)

The amount of slag recovered at each boiler was on average 5 tons of slag / h / boiler and in the third year of operation amounted to a quantity of 36,140 tons of slag, of which the amount of 30,047 t of slag was recirculated to boilers.

The primary energy from recovered and recycled slag controlled in the third year was 35,115 Gcal / year, representing a quantity of 23,244 t of lignite saved.

As a result, a reduction in carbon dioxide emissions of approx. 2.1 thousand t CO₂ was obtained. The recovery of slag and its transformation from waste to alternative fuel reduced the amount of solid waste (ash) to be stored by 19,120 t of ash in the third reporting year, compared to the situation where slag would not be recycled. Slag fuel burns completely in suspension in the boiler's hearth and no slag agglomeration occurs in the cold boiler funnel.

Difficulties encountered/ lessons learned

At CET Govora, in 4 of the 12 months of operation, there were some technical limitations imposed, due to failures of the driving system of the slag dispenser conveyor belt.

Potential for learning or transfer

The proposed process, carried out with minimal handling and investment costs, can be applied to all lower grade coal-fired boilers in the country, but certain technological restrictions must be taken into account:

- if the discharged slag is soaked with water in the cooling process - the excess soaking water must be drained so that it is not reintroduced into the boiler's hearth;
- the fuel mass content of the slag is variable depending on the quality of the burned coal, the efficiency of the coal grinding process and the loading regime of the boiler;
- the slag has a combustible material content, but does not contain volatiles which contribute to ignition, so that the dosage must not exceed 10% slag in lignite.

3.2 Sustainability strategy

During the fifth semester, the South-West Oltenia RDA Decarb team realized the DeCarb A4.1. Sustainability Plan, a report detailing a sustainability strategy, to secure post-project impact during the entire clean energy transition, for guiding partners' long-term planning. Our partners provided inputs for the update of the strategy, integrating additional long-term activities relevant to latest project developments. The sustainability plan contain specific actions for phase 2 and post-project, to ensure political support and additional funding. The aim is to involve stakeholder groups in implementing the action plans produced in phase 1, and sustain their post-project support to the improvements envisaged for each policy instrument.

3.3 Project stakeholders

The Stakeholders Group was formed with representatives of public administration (county councils, municipalities, cities in the region); representatives of relevant environmental agencies and academic institutions.

The stakeholders were involved, during the phase 1 of DeCarb project implementation, in various actions related to the development of the regional action plan. They participated in debates regarding the policy instrument targeting the project and on the development needs of the actors in this field. Also, they had the opportunity to discuss on how the lessons learned from the cooperation will be exploited in order to improve the policy instrument tackled within the region.

Stakeholders were involved in the policy learning process at stakeholder meeting and social dialogue event, as well as through further communication by electronic means and the distribution of information material (newsletter etc.)

All participating stakeholders have delivered interesting ideas and suggestions by outlining examples of good practices in terms of relevant, regarding the clean energy transition of coal-intensive regions. They are part of SW Oltenia region and proved their commitment to play a relevant role in relation to the policy instrument. Stakeholders participated in the project's activities to make the process more effective, with the aim to improve the situation in the Region, involving all the actors of the system in designing and implementing their strategies and actions. They were actively involved in the project's activities, wishing to contribute to the dissemination of the project's results to a large audience (clients, members and other interested parties). Stakeholders provided additional information by giving us good guidelines on how and what we should learn if we are to succeed in creating a truly powerful learning experience. Stakeholders participated in study visits.

All the stakeholders involved in this project were very interested in observing how other countries succeeded in implementing projects regarding the clean energy transition of coal-intensive regions and are willing to change aspects regarding the energy field in our region, in order to have a successful planning and successful energy projects with great positive impact on the environment.

At the meetings organized, issues related to the policy instrument targeting the DeCarb project were brought to the public's attention. There were discussion about identifying the financial needs of stakeholders and include them into our Action Plan, the Regional Development Plan and into Development Strategy. The stakeholders were constantly involved and updated about all the activities. Influencing the policy instrument is a continuous activity that will last during its implementation and after that.

South-West Oltenia RDA project team organized the Stakeholders Group Meeting but also the New Energy Mix "social dialogue event and The "Decarbonisation" Info-Day Event and as follows:

The Regional Stakeholders Group Meeting was held in Targu-Jiu City, Gorj County from Romania on 3rd September 2018. The event was attended by 26 participants, through 4 regional public stakeholders.

The first stakeholders meeting was carried out in Targu-Jiu City, Gorj County, taking into consideration that this area is the most relevant from South-West Oltenia region concerning the main aim of the DeCarb project. Also, in this area activates the most important public authorities and stakeholders from energy sector.

This event was open with a presentation of the DeCarb project which included the objectives, the activities and the expected results. After this introduction, the discussion was focused on the involvement of the stakeholders in the project implementation. During the event, the participants had the opportunity to exchange views and to identify the main needs regarding the clean energy transition sector in South-West Oltenia region. Also, during the event, the participants had the chance to find out about the current investment opportunities that are available in the energy sector.

The stakeholders responded positively to the actions proposed in the project and expressed their interest to participate actively in all the working groups and the exchange of experience to be organized within the project. Also, a special interest was expressed on actions to identify growth strategies to mitigate the impact of decarbonisation and on proposals to improve policies on funds allocated to the energy sector.

The second stakeholders meeting was organised on 15th of May 2019. The stakeholders responded positively to the actions proposed in the project and expressed their interest to participate actively in all the working groups and the exchange of experience to be organized within the project.

Also, a special interest was expressed on actions to identify growth strategies to mitigate the impact of decarbonisation and on proposals to improve policies on funds allocated to the energy sector.

In order to prepare the next Regional Stakeholders Group Meeting, all stakeholders were asked to provide their feedback on the 3rd Session meeting and to raise any points of attention they consider particularly interesting for DeCarb.

The third Regional Stakeholders Group Meeting was held in Turceni City, Gorj County from Romania on November 15, 2019. The event was attended by 20 participants, representatives of local authorities, mayors of localities that use intensive coal, representatives of the Oltenia Energy Complex and Turceni Thermal Power Plant Branch Manager.

The event was opened with a short welcome from the Mayor of Turceni, followed by the stage of project implementation presentation. This event continued with information about the working visit in Germany, the Lusatia region, the platform for carboniferous regions in Europe and the policy learning platform. The participants in the event showed a high interest in the detailed information regarding the restoration of the land regarding all the operational, administrative and technical aspects of the land restoration processes in the former coal mines and on proposals to improve policies on funds allocated to the energy sector.

In order to prepare the next Regional Stakeholders Group Meeting, all stakeholders were asked to provide their feedback on the 3rd Session meeting and to raise any points of attention they consider particularly interesting for DeCarb.

After these presentations, the discussion was focused on the involvement of the stakeholders in the project implementation. During the event, the participants had the opportunity to exchange views and to identify the main needs regarding the clean energy transition sector in South-West Oltenia region.

In the second part of the meeting, there was presented financing opportunities in the energy sector and related sectors, giving participants the chance to find out about the current investment opportunities that are available in the energy sector.

There was also a debate on the development needs of the stakeholders in the energy sector in order to introduce them into the project action plan. Also, issues related to the policy instrument targeting the DeCarb project were brought to the public's attention. There were some discussion about identifying the financial needs of stakeholders and include them into the Regional Development Plan and into Development Strategy, elaborated by our institution in order to be send to the National Ministry.

It was emphasized that there is also interest at the level of private entities not just regional authorities, the example being the cardboard gypsum factory produced from the waste resulting from the process of desulphurization of gases from Turceni Power Plant.

The event ended with a session of free discussions in which everyone present actively participated, the stakeholders expressing their interest to get directly involved in the project activities.

The fourth Regional Stakeholders Group Meeting hosted by the South-West Oltenia Regional Development Agency was held in Turceni City, Gorj County from Romania on July 17th, 2020. The event was attended by 16 participants, representatives of local authorities, mayors of localities that use intensive coal, representatives of the Oltenia Energy Complex and representatives of ENERO.

The following presentations took place during the event: the stage of project implementation, information about Just Transition Mechanism, information about the professional reconversion of miners, financing opportunities in the energy sector and related sectors, giving participants the chance to find out about the current investment opportunities that are available in the energy sector, the template for good practice presented to the stakeholders, the BIOPLAT project, the project aim to land use affected by coal mining for bioenergy projects.

Also, during the meeting there were debates on the development needs of stakeholders in the energy sector in order to introduce them in the action plan, debates on the policy instrument for the DeCarb project, as well as discussions on the professional retraining of miners.

The participants in the event showed a high interest in the detailed information regarding the Just Transition Mechanism and how it will be implemented at the level of the country, respectively our region.

During the event, the participants had the opportunity to exchange views and to identify the main needs regarding the clean energy transition sector in South-West Oltenia region.

The event ended with a session of free discussions in which everyone present actively participated, the stakeholders expressing their interest to get directly involved in the project activities.

The fifth Regional Stakeholders Group Meeting hosted by the South-West Oltenia Regional Development Agency was held in Turceni City, Gorj County from Romania on November 12th, 2020. The event was attended by 20 participants, representatives of local authorities, mayors of localities that use intensive coal, representatives of the Oltenia Energy Complex and representatives of ENERO.

The following presentations took place during the event: the stage of project implementation and financing opportunities in the energy sector and related sectors, giving participants the chance to find out about the current investment opportunities that are available in the energy sector.

Also, during the meeting there were debates on the development needs of stakeholders in the energy sector in order to introduce them in the action plan, debates on the policy instrument for the DeCarb project, as well as discussions on the professional retraining of miners.

During the event, the participants had the opportunity to exchange views and to identify the main needs regarding the clean energy transition sector in South-West Oltenia Region.

The event ended with a session of free discussions in which everyone present actively participated, the stakeholders expressing their interest to get directly involved in the project activities.

The Social Dialogue Event New Energy Mix hosted by the South-West Oltenia Regional Development Agency was held in Turceni, Gorj County from Romania on November 12th, 2020. In the context of the current approach due to the pandemic generated by the Covid virus, and the restrictions imposed by Romanian law to projects workshops that limit the physical presence to 25 participants, the Social Dialogue Event took place in hybrid system, both on-site and online event. The event was attended by 44 people, 25 on site and 19 online, sectorial stakeholders, public administration, environmental organizations, regional and local agencies, universities and research institutions.

Discussions focused on the importance of retraining former miners for employment in new sectors related to sustainable energy, in order to achieve an energy transition given the socio-economic impact.

The event addressed the three main themes that were indicated in the DeCarb's social dialogue methodology provided by the partner KSSENA, under activity A2.2.

- Environmental restitution and land restoration needs. Coal driven activities have been found to cause major disturbances to the natural environment and exert a long lasting impact on coal intensive regions' landscapes. Carefully planned environmental restitution and land restoration activities will contribute to the mitigation of environmental damage caused by mining activities. The approach of this theme on the social dialogue event aimed to identify the needs and establish those restoration activities that provide ecological, social and economic benefits for the community. It was also intended to be the voice that political decision-makers in the region will hear for a better understanding of the context, and initiating the most effective methods to stop coal mining operations that pave the way for restoration activities, with examples of good the practice of DECARB partners;

- Expected socio economic impact of coal related activities. The second topic addressed during the social dialogue event focused on the socio-economic impact expected from the cessation of coal-based activities in the DeCarb regions.

- Economic alternatives after phasing out coal-intensive activities. DeCarb regions have very divergent energy mixes and socio-economic conditions, therefore decarbonisation essentially means different things in different contexts and any suggested strategy or plan must be context specific. Taking into account the

particularities of the region, the appropriate post-coal economic activities that can provide high social and economic benefits to local communities are renewable energy, tourism and agriculture. The participants in the events showed a high interest in the detailed information regarding the restoration of the land regarding all the operational, administrative and technical aspects of the land restoration processes in the former coal mines. After these presentations, the discussion was focused on the involvement of the stakeholders in the project implementation. During the event, the participants had the opportunity to exchange views and to identify the main needs regarding the clean energy transition sector in South-West Oltenia Region.

The sixth Regional Stakeholders Group Meeting was held in Turceni City, Gorj County from Romania on May 14th, 2021. The event was attended by 21 participants, representatives of senate, chamber of deputies, county and local authorities, and mayors of localities that use intensive coal and representatives of the Oltenia Energy Complex.

In the first part the focus was on informing stakeholders on project progress, upcoming activities and their role in the 6th semester.

In the second part of the meeting, were presented the financing opportunities in the energy sector and related sectors, giving participants the chance to find out about the current investment opportunities that are available in the energy sector. Also a guest from the Regional Policy and Communication Directorate, South West Oltenia Regional Development Agency, presented the Regional Operational Program 2021-2027. Also, the Just Transition Operational Program was debated, being a topic of interest among the organizers and participants.

Also, during the meeting there were debates on the development needs of stakeholders in the energy sector, discussions on the development of the regional action plan to improve and/or reorient policy instruments to address the decarbonisation policy implemented within the DeCarb project.

All the stakeholders expressed their interests regarding the clean energy transition sector in South-West Oltenia Region. The stakeholders presented the regional situation regarding coal mining and highlighted a number of relevant aspects of the sector.

Following the proper decarbonisation and restructuring of the region, it is necessary to provide new jobs, equivalent to the current jobs of the specialized energy workforce, and the know-how and experiences of those advanced in the field of clean energy to be used efficiently, in order to bring added value.

There have been presented the investments made at this moment, as well as the investments that have to be achieved in the next period.

There is real concern among local authorities for the clean energy transition and local authorities are willing to work together to find the best financing and investment solutions and they are interested in learning based on the best practices and experience of advanced partners in decarbonisation.

The participants had the opportunity to discuss their funding needs with members of the DeCarb project implementation team, from the South West Oltenia Regional Development Agency. In this sense, there was a major interest in the funding available for the new programming period, respectively regarding the opportunities of the ROP 2021-2027, the Just Transition Operational Program, with an impact on decarbonisation.

The “Decarbonisation” Info-Day Event was held in Craiova Municipality, Dolj County from Romania on May 26th, 2021. In the context of the current approach due to the pandemic generated by the Covid virus, and the restrictions imposed by Romanian law to projects workshops that limit the physical presence to 25 participants, the Info-Day Event took place in a hybrid system, both on-site and online event. The event was attended by 57 people, 25 on site and 32 online.

Decarbonisation” Info-Day was organized in order to disseminate DeCarb results, implications at the territorial level, expected improvements and measures to be implemented through Action plans, in order to raise awareness and motivation of target groups to participate in the implementation phase.

The following presentations took place during the event: the stage of project implementation and financing opportunities in the energy sector and related sectors, giving participants the chance to find out about the current investment opportunities that are available in the energy sector.

The main topics of the event addressed:

- development needs of stakeholders in the energy sector;
- actions taken in order to improve and / or reorient the policy instruments in order to approach the decarbonisation policy carried out within the DeCarb project;
- the needs of stakeholders during the transition period.

4. Action 1 – Monitoring the implementation of funded projects financed from reallocations within Axis 3.1B, funded by ROP 2014-2020

4.1 Overview of the Policy Improvement that this Action refers to

As an Intermediate Body in relation to the Managing Authority of the Regional Operational Program (ERDF), PP3 - South-West Oltenia Regional Development Agency is responsible for monitoring the implementation of projects funded under Axis 3 - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including public buildings, and in the housing sector, Operation B - Public Buildings.

South West Oltenia Regional Development Agency is the Intermediate Body for Regional Operational Programme 2014-2020, and is funding programs dedicated to regional development.

Axis 3.1B (ROP Priority Axis 3 - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including public buildings, and in the housing sector, Operation B - Public Buildings under the Regional Operational Program (ROP) 2014 -2020) **was opened in two sessions for receiving projects financed from non-reimbursable funds, on 4th of October 2017 and and 5th December 2018 and 114 project were submitted, of which 54 weren't eligible. The allocation for this call was 234.572.467,73 lei (about 48.106.574,43 euro).**

In the first session there were submitted 43 projects of which 27 project were eligible and the beneficiaries signed Financing agreements.

In the second session there were submitted 71 projects of which 33 project were eligible and the beneficiaries signed Financing agreements.

The total value of the projects was 265.069.660,35 thousand lei (about 54.360.997,55 euro), the amount initially allocated being supplemented with 30.497.192,62 lei (about 6.254.423,13 euro)after South-West Oltenia RDA submitted to the Managing Authority requests to reallocate funds so that all eligible decarbonisation initiatives that were eligible to sign a financing agreement.

Below you can find the list of projects financed within Priority Axis 3 - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including public buildings, and in the housing sector, Operation B - Public Buildings under the Regional Operational Program (ROP) 2014 -2020). **The projects highlighted in green were financed from reallocations, and they are the object of the policy instrument influenced within the DECARB project.**

This call supported investments in the field of reducing CO2 emissions / increasing energy efficiency and those that included measures to increase energy efficiency for public buildings.



Dolj - Gorj - Mehedinti - Olt - Valcea



European Union
European Regional
Development Fund

| Nr crt | Project title | Beneficiary | SMIS code | County | Total value (RON) | Amount requested (RON) | Amount requested (EURO) | Implementation stage |
|--------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------|-----------|-----------|-------------------|------------------------|-------------------------|----------------------|
| 1 | Thermo-energetic rehabilitation of the administrative pavilion from the S.P.F Calafat headquarters | Territorial Inspectorate of the Border Police / Management | 110962 | Dolj | 3,397,820.02 | 2,051,757.18 | 420,778.32 | completed |
| 2 | Rehabilitation of Theodor Costescu Drobeta Turnu Severin Economic College | ATU Dr Tr Severin Municipality | 111470 | Mehedinti | 2,638,911.58 | 2,345,234.72 | 480,965.26 | being implemented |
| 3 | Rehabilitation of the kindergarten with extended program no. 29, Drobeta Turnu Severin | ATU Dr Tr Severin Municipality | 110275 | Mehedinti | 877,010.50 | 748,212.78 | 153,444.92 | being implemented |
| 4 | Rehabilitation of Kindergarten no. 20, Drobeta Turnu Severin | ATU Dr Tr Severin Municipality | 111750 | Mehedinti | 1,277,766.17 | 1,096,661.46 | 224,905.45 | being implemented |
| 5 | Increasing the energy efficiency of the main body of the Mihail Drumes Secondary School, Bals | ATU Bals City | 114684 | Olt | 2,041,533.31 | 1,524,994.25 | 312,748.76 | completed |
| 6 | Rehabilitation of Kindergarten no. 19, Drobeta Turnu Severin | ATU Dr Tr Severin Municipality | 111804 | Mehedinti | 1,402,801.38 | 1,218,512.08 | 249,894.81 | being implemented |

| | | | | | | | | |
|----|-------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------|-----------|--------------|--------------|--------------|-------------------|
| 7 | Rehabilitation of kindergarten no. 2 Drobeta Turnu Severin | ATU Dr Tr Severin Municipality | 110276 | Mehedinti | 724,057.12 | 647,327.45 | 132,755.16 | being implemented |
| 8 | Increasing the energy efficiency of the middle school within the technological high school Constantin Nicolaescu Ploșor | ATU Plenița Commune | 115426 | Dolj | 3,056,368.12 | 2,276,650.61 | 466,899.90 | being implemented |
| 9 | Increasing the energy efficiency of the central pavilions of the Corabia city hospital | ATU Corabia City | 111866 | Olt | 8,282,348.46 | 7,603,007.37 | 1,559,239.43 | being implemented |
| 10 | Rehabilitation of Kindergarten no.3 Drobeta Turnu Severin | ATU Dr Tr Severin Municipality | 111749 | Mehedinti | 1,113,971.13 | 1,091,153.15 | 223,775.79 | being implemented |
| 11 | Increasing the energy efficiency of the building of the Community Services Complex - Râmnicu Vâlcea | ATU Valcea County | 117840 | Valcea | 7,595,815.95 | 7,169,186.29 | 1,470,270.56 | being implemented |
| 12 | Rehabilitation of kindergarten headquarters with extended program in Rovinari | ATU Rovinari City | 115861 | Gorj | 1,053,502.82 | 886,495.38 | 181,804.18 | completed |
| 13 | Thermal rehabilitation of the National | ATU Ramnicu Valcea | 118454 | Valcea | 5,309,024.54 | 4,983,463.96 | 1,022,018.41 | being implemented |

| | | | | | | | | |
|----|---------------------------------------------------------------------------------------------------------------|----------------------------|--------|-----------|--------------|--------------|--------------|-------------------|
| | College of Informatics Matei Basarab | | | | | | | |
| 14 | Thermal rehabilitation I.G. lead | ATU Ramnicu Valcea | 117901 | Valcea | 1,688,220.19 | 1,643,478.64 | 337,047.77 | being implemented |
| 15 | Increasing the energy efficiency of the Apartments-Former Villa de Protocol building | ATU Olt County | 116183 | Olt | 721,287.22 | 674,685.76 | 138,365.86 | being implemented |
| 16 | Thermal rehabilitation of boarding school and canteen at the "Mircea cel Batran" National College | ATU Ramnicu Valcea | 118459 | Valcea | 3,360,720.22 | 3,020,334.09 | 619,415.95 | being implemented |
| 17 | Increasing energy efficiency by rehabilitating the "Costache Nicolescu" Municipal Hospital | ATU Dragasani Municipality | 114430 | Valcea | 8,544,789.96 | 7,724,571.53 | 1,584,170.04 | being implemented |
| 18 | Rehabilitation / modernization to increase energy efficiency at the Psychiatry Pavilion I and II | ATU Mehedinti County | 116595 | Mehedinti | 2,807,640.31 | 2,483,759.21 | 509,374.13 | being implemented |
| 19 | Consolidation and energetic rehabilitation of the Maciuca Neuropsychiatric Recovery and Rehabilitation Center | ATU Valcea County | 118167 | Valcea | 4,866,272.95 | 3,461,764.03 | 709,945.25 | completed |

| | | | | | | | | |
|----|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------|------|---------------|---------------|--------------|-------------------|
| 20 | Making investments to increase the energy efficiency of the building of the Bratovoiesi Gymnasium School, Bratovoiesi village, Dolj county | Bratovoiesi Commune ATU | 118604 | Dolj | 1,210,133.69 | 1,095,318.87 | 224,630.11 | completed |
| 21 | Energy rehabilitation of Targu-Jiu County Emergency Hospital - location Tudor Vladimirescu Street | ATU Gorj County | 110328 | Gorj | 21,162,108.70 | 17,380,169.17 | 3,564,358.64 | being implemented |
| 22 | Increasing energy efficiency by rehabilitating the Caracal Municipal Hospital | ATU Caracal Municipality | 117853 | Olt | 10,133,286.89 | 9,928,759.15 | 2,036,209.09 | being implemented |
| 23 | Thermal rehabilitation to improve energy efficiency at the Olt County Library | ATU Olt County | 116121 | Olt | 1,127,351.11 | 1,056,217.12 | 216,611.05 | being implemented |
| 24 | Thermal rehabilitation to improve energy efficiency for the Olt County Council | ATU Olt County | 116169 | Olt | 2,323,814.72 | 2,174,463.12 | 445,943.09 | being implemented |
| 25 | Increasing the energy efficiency of the Gymnasium School from Podari Commune, Dolj County | ATU Podari Commune | 110258 | Dolj | 2,837,836.06 | 2,284,009.00 | 468,408.97 | completed |

| | | | | | | | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------|--------|---------------|---------------|--------------|-------------------|
| 26 | Rehabilitation for energy efficiency of Novaci City Hospital | ATU Novaci | 118603 | Gorj | 7,008,780.58 | 6,547,646.37 | 1,342,803.96 | being implemented |
| 27 | Thermal rehabilitation of Turceni City Hospital, Gorj County | city ATU Turceni | 123243 | Gorj | 5,219,548.82 | 5,115,157.84 | 1,049,026.44 | being implemented |
| 28 | Thermal rehabilitation to improve energy efficiency at Bals City Hospital, Olt County | ATU Bals City | 118674 | Olt | 3,309,131.80 | 3,018,512.24 | 619,042.32 | being implemented |
| 29 | Rehabilitation of Public Institutions in Rovinari - Block A1, Rovinari, Jud. Gorj | City ATU Rovinari | 123497 | Gorj | 1,861,382.98 | 1,550,744.72 | 318,029.72 | being implemented |
| 30 | Increasing the energy efficiency of public buildings in Craiova belonging to the Health sector - Victor Babes Craiova Clinical Hospital for Infectious Diseases and Pneumoftiziologie | Municipality ATU Craiova | 123264 | Dolj | 20,688,226.98 | 14,734,349.20 | 3,021,748.77 | being implemented |
| 31 | Increasing Energy Efficiency In The Kindergarten Building With Extended Program - Calimanesti | ATU The city of Calimanesti | 125274 | Valcea | 1,375,673.82 | 1,348,160.34 | 276,483.32 | being implemented |

| | | | | | | | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------|--------|---------------|--------------|--------------|-------------------|
| 32 | Increasing energy efficiency in the building of the gymnasium school Jiblea Veche - Calimanesti, Valcea county | ATU The city of Calimanesti | 124995 | Valcea | 3,125,269.50 | 3,046,357.31 | 624,752.84 | being implemented |
| 33 | Increasing the energy efficiency of boarding buildings 1, boarding school 2, workshops and canteen within the Bals Technical College | ATU Bals City | 123299 | Olt | 10,432,680.94 | 8,410,581.66 | 1,724,858.32 | being implemented |
| 34 | Increasing the energy efficiency of the House of Culture of Bals | ATU Bals City | 123300 | Olt | 1,801,655.68 | 1,421,679.87 | 291,560.85 | being implemented |
| 35 | Increasing the energy efficiency of the main body of the Theoretical High School Petre Pandrea Bals | ATU Bals City | 123301 | Olt | 4,631,980.97 | 4,010,277.23 | 822,435.40 | being implemented |
| 36 | Increasing the energy efficiency of public buildings in the Municipality of Craiova belonging to the Education - Kindergarten sector with extended program Piticot including Crèche no. 5 | ATU Craiova Municipality | 126183 | Dolj | 3,828,229.48 | 3,496,358.21 | 717,039.89 | being implemented |
| 37 | Increasing the energy efficiency of public buildings in Craiova belonging to the | ATU Craiova Municipality | 126160 | Dolj | 3,928,499.09 | 3,597,123.68 | 737,705.07 | being implemented |

| | | | | | | | | | |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|--------|--------|---------------|--------------|------------|-------------------|
| | Education - Kindergarten sector with extended program Elena Farago including Crèche no. 8 | | | | | | | | |
| 38 | Increasing the energy efficiency, resistance and stability of the public building (Corp C2) located in Str. Tabaci, no. 1, Craiova Municipality, Dolj County | ATU County | Dolj | 125292 | Dolj | 13,222,316.94 | 4,761,945.74 | 976,589.02 | being implemented |
| 39 | Thermal rehabilitation of the Motru House of Culture | ATU Municipality | Motru | 123461 | Gorj | 3,154,388.36 | 2,365,530.14 | 485,127.49 | being implemented |
| 40 | Rehabilitation of Public Institutions from Rovinari City - City Hall, Rovinari City, Jud. Gorj | ATU City | Rovinari | 123242 | Gorj | 2,952,384.75 | 2,673,566.22 | 548,300.12 | being implemented |
| 41 | Thermal rehabilitation, interior modifications and extension Afumati Gymnasium School body C1 | ATU Commune | Afumati | 125047 | Dolj | 3,692,426.12 | 3,396,997.10 | 696,662.72 | being implemented |
| 42 | Modernization in order to increase the energy efficiency of the I.J.J Valcea headquarters, administrative pavilion no. 45-123-01-POR | Military Unit No. | 0460 Rm. Valcea | 126965 | Valcea | 3,337,450.28 | 2,168,291.52 | 444,677.41 | being implemented |

| | | | | | | | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------|--------|--------------|--------------|------------|-------------------|
| 43 | Thermal rehabilitation - Increasing energy efficiency in public buildings - "Stefan Diaconescu High School", in Potcoava city, Olt county | Horseshoe Horseshoe City | 125953 | Olt | 1,193,594.04 | 862,553.65 | 176,894.17 | being implemented |
| 44 | Increasing the energy efficiency of public buildings in Craiova belonging to the education sector - Kindergarten with extended program Blue Flower including Nursery no.3 | ATU Craiova Municipality | 126182 | Dolj | 4,244,018.78 | 3,787,924.41 | 776,834.85 | being implemented |
| 45 | Thermal rehabilitation to improve energy efficiency at building C1 and building C2 - School Group "Horia Vintila" Segarcea town, Dolj county | ATU Segarcea city | 126218 | Dolj | 3,665,076.95 | 2,903,759.25 | 595,508.55 | being implemented |
| 46 | Increasing the energy efficiency of the Nicolae Balcescu City Hall building, Nicolae Balcescu commune, Vâlcea county | ATU Nicolae Balcescu Commune | 127244 | Valcea | 1,463,172.47 | 1,397,782.87 | 286,660.01 | completed |
| 47 | Rehabilitation, modernization and endowment of Segarcea Gymnasium School in order | ATU Segarcea city | 126578 | Dolj | 3,983,170.45 | 3,304,147.22 | 677,620.89 | being implemented |

| | | | | | | | | |
|----|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------|-----------|---------------|---------------|---------------|-------------------|
| | to increase energy efficiency - Segarcea City, Dolj County | | | | | | | |
| 48 | Modernization / repartitioning of interior spaces and energy efficiency of the Drobeta Turnu Severin County Emergency Hospital | ATU Mehedinti County | 126303 | Mehedinti | 77,361,379.14 | 62,801,279.61 | 12,879,407.64 | being implemented |
| 49 | Thermal rehabilitation - Increasing energy efficiency in public buildings - Police headquarters, Potcoava city, Olt county | Horseshoe Horseshoe City | 125955 | Olt | 912,722.91 | 606,596.60 | 124,402.00 | being implemented |
| 50 | Thermal and energetic rehabilitation of administrative building 48-94-01 - Drobeta Turnu Severin Fire Department | Drobeta Emergency Situations Inspectorate of Mehedinti County | 127075 | Mehedinti | 5,311,690.34 | 3,489,453.81 | 715,623.92 | being implemented |
| 51 | Thermal and energetic rehabilitation Administrative Building 48-106-01 - Caracal Fire Department | ISU Matei Basarab of Olt County | 126943 | Olt | 7,012,576.84 | 4,234,834.00 | 868,487.93 | being implemented |
| 52 | Increasing the energy efficiency of the Gymnasium school no. 3, 1 Crinilor street, Bals city, Olt county | ATU Bals City | 127291 | Olt | 1,982,216.89 | 1,175,698.33 | 241,114.48 | terminated |

| | | | | | | | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------|--------|---------------|---------------|--------------|-------------------|
| 53 | "Improving the thermal insulation of the envelope of the building of the Police headquarters of Târgu Jiu Municipality within the Police Inspectorate of Gorj County" | Gorj Police Inspectorate | 127095 | Gorj | 15,184,580.84 | 10,561,464.85 | 2,165,965.60 | being implemented |
| 54 | Rehabilitation and modernization of a public utility building in order to increase energy efficiency for the town hall in Terpezita Commune, Dolj County | ATU Common Terpezita | 126619 | Dolj | 1,183,627.81 | 674,958.36 | 138,421.76 | being implemented |
| 55 | Thermal rehabilitation of human dispensary with permanent center in Brastavatu Commune, Olt County | ATU Commune Brastavatu | 127096 | Olt | 3,506,457.18 | 3,045,849.44 | 624,648.68 | being implemented |
| 56 | Increasing the energy efficiency of the Human Dispensary building in Fârtatesti village, Fârtatesti commune, Vâlcea county | FATatesti Commune ATU | 127228 | Valcea | 647,466.59 | 560,765.60 | 115,002.89 | being implemented |
| 57 | Improving energy efficiency, reducing CO2 emissions and modernizing the School in Draganesti-Olt, Comani Village | ATU Draganesti-Olt | 127178 | Olt | 3,058,087.55 | 1,794,427.12 | 368,004.58 | being implemented |

| | | | | | | | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------|------|--------------|--------------|------------|-------------------|
| 58 | Improving energy efficiency, reducing CO2 emissions and modernizing the Technological High School in Draganesti-Olt | ATU Draganesti-Olt | 127177 | Olt | 3,770,847.38 | 2,633,953.18 | 540,176.20 | being implemented |
| 59 | Increasing the energy efficiency, resistance and stability of the public building located in Str. Aleea Voinicului, no. 14, Craiova City, Dolj County | ATU Dolj County | 125291 | Dolj | 2,757,067.60 | 1,400,597.43 | 287,237.22 | being implemented |
| 60 | IMPROVING ENERGY EFFICIENCY, REDUCING CO2 EMISSIONS AND MODERNIZING KINDERGARTEN IN THE TOWN OF DRĂGĂNEȘTI-OLT, COMANI VILLAGE | ATU Draganesti-Olt | 127176 | Olt | 2,263,499.69 | 1,600,148.86 | 328,161.62 | being implemented |

4.2 Background

The experience of the previous programming period and of the current stage of implementation of the operational programs highlighted the fact that, although at the level of strategic planning of directions and intervention priorities correct analyzes are made, the results of their implementation have a low degree of sustainability compared to initial expectations. The causes are in many situations objective, generated by national realities but also by the fact that in the conception of the selection procedures and the processes themselves the emphasis continues to focus on achievements and on the absorption of funds rather than on results. The impact of these inadvertencies is directly reflected in the difficulties encountered by the beneficiaries during the sustainability period and their reluctance to generate projects with a major economic impact in the medium or long term.

4.3 Timeframe

| | |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2021 –2023 | Monitoring the projects funded through ROP 2014-2020 , Priority Axis 3 - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including public buildings, and in the housing sector, Operation B - Public Buildings under the Regional Operational Program (ROP) 2014 -2020) |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

4.4 Stakeholders involved

| Name of Organisation | Role in Action Plan |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| South-West Oltenia Regional Development Agency | Responsible with the monitoring process, as Intermediate Body for Regional Operational Programme 2014-2020 |

4.5 Costs and Funding Sources

SW Oltenia RDA, as Intermediate Body for Regional Operational Programme 2014-2020 is responsible for monitoring the projects (the agency has specialized staff in this regard) related to Priority Axis 3 - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including public buildings, and in the housing sector, Operation B - Public Buildings under the Regional Operational Program (ROP) 2014 -2020).

The financing source for this activity is represented by the technical assistance contracts for the management of the program. Even if the DECARB project implementation team will carry out a similar activity, no specific costs are associated to this action.

4.6 Risk and Contingency Plans

| Description of Risk | Level of probability (High, Medium, Low) | Description of Contingency Plan |
|-------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------|
| Reducing the total value of contracted projects | Low risk | The reducing of the total value of contracted projects can lead to situations in which the |

| | | |
|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | <p>projects cannot be implemented. In order to avoid the occurrence of such cases, we will closely monitor, adequately, the 10th projects through regular correspondence with the beneficiaries of the projects (by e-mail, by phone, etc).</p> |
|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

4.7 Monitoring

| Self-defined Performance Indicators | | |
|---------------------------------------------------------------------------------|---------------|-----------------------------------------------|
| Indicator | Target | Means of Verification |
| Number of monitoring projects that are in implementation | 10 | Documents related to the implemented projects |
| Output Indicators | | |
| Indicator | Target | Means of Verification |
| Number of Public beneficiaries who will benefit from energy efficiency measures | 10 | Documents related to the implemented projects |

5. Action 2 – Monitoring the implementation of projects funded by ROP 2021-2027

5.1 Overview

The Regional Operational Program (ROP) South-West Oltenia 2021-2027 is a strategic programming document and the main financing instrument for the development projects of the region, addressing both public authorities and the private environment, in order to increase the quality of life in the region.

ROP South-West Oltenia 2021-2027 covers various areas such as innovation / research, technology transfer, increasing the competitiveness of SMEs, digitalisation for the benefit of citizens, energy efficiency, urban development, mobility and accessibility, green infrastructure and biodiversity, educational infrastructure, tourism and cultural heritage and integrated territorial development.

The strategic vision of the South-West Oltenia ROP 2021-2027 is based on development needs, identified and prioritized in a broad partnership framework as the most relevant in the context of the current stage of socio-economic development of the region. Over 1.2 billion Euros from the European Regional Development Fund (ERDF) and the state budget will be allocated for investments in the South-West Oltenia Region through the 8 Priorities of the program:

P1 - Competitiveness through innovation and dynamic enterprises

P2 - Digitization for the benefit of citizens and companies

P3 - Energy efficiency and green infrastructure

P4 - Sustainable urban mobility

P5 - Accessibility and connectivity at regional level

P6 - Modern and inclusive education

P7 - Sustainable territorial development

P8 - Technical assistance

South West Oltenia RDA has received the approval for the second version of the document which was prepared taking into account the recommendations received from the European Commission, the amendments to the European Regulations, as well as the results of the consultation process carried out at regional level.

The South-West Oltenia ROP 2021-2027 is a strategic programming document and the main financing instrument for the development projects of the region, addressing both public authorities and the private environment, in order to increase the quality of life in the region.

ROP South-West Oltenia 2021-2027 covers various areas such as innovation / research, technology transfer, increasing the competitiveness of SMEs, digitalization for the benefit of citizens, energy efficiency, urban development, mobility and accessibility, green infrastructure and biodiversity, educational infrastructure, tourism and cultural heritage and integrated territorial development.

The strategic vision of the ROP South-West Oltenia 2021-2027 is based on development needs, identified and prioritized in a broad partnership framework as the most relevant in the context of the current stage of socio-economic development of the region. Over 1.2 billion Euros from the European Regional Development Fund (ERDF) and the state budget will be allocated for investments in the South-West Oltenia Region through the 8 Priority Axes of the program.

In accordance with the specifics and purpose of the Decarb project, we identified 2 financing axes within the ROP 2021-2027 in order to monitor and improve the policy instrument. The axis are presented in the table below.

Regarding the opening of the calls, a realistic estimation would be in the first trimester of 2022.

| Axis | Priority | Policy objective / specific objective | Actions / Types of projects | Potential beneficiaries |
|------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Priority Axis 3 - Energy efficiency and green infrastructure | OP 2 / OS 1 Promoting energy efficiency and reducing greenhouse gas emissions ERDF allocation proposal: 161.363.000 euro | <ol style="list-style-type: none"> Investments in residential buildings to ensure / increase energy efficiency, including structural consolidation measures depending on the level of exposure and vulnerability to identified risks and measures for the use of renewable energy sources; Investments in public buildings to ensure / increase energy efficiency, including structural consolidation measures depending on the level of exposure and vulnerability to identified risks and | <p>Central public authorities and institutions</p> <p>Local public authorities and institutions</p> <p>Local public authorities in the urban environment in partnership with the owners' associations</p> |

| Priority Axis | Policy objective / specific objective | Actions / Types of projects | Potential beneficiaries |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| proposal: 236.051.000 | | measures for the use of renewable energy sources; | |
| | PO 2 / SO 7 Improving the protection of nature and biodiversity, green infrastructure especially in urban areas and reducing pollution ERDF allocation proposal: 74.688.000 euro | <ol style="list-style-type: none"> Support for the creation, extension or improvement of green infrastructure (parks, urban areas, gardens, green roofs, urban gardens, etc.) Functional conversion of degraded / unused / abandoned vacant lands. | <p>Local public authorities (UAT city / UAT county) Partnerships</p> |
| Priority Axis 4 - Sustainable urban mobility ERDF allocation proposal: 137.540.000 euro | PO 2 / SO 8 Promoting sustainable multimodal urban mobility ERDF allocation proposal: 137.540.000 euro | <ol style="list-style-type: none"> Support for sustainable and sustainable urban transport: <ul style="list-style-type: none"> ✓ Establishment, development and optimization of public transport systems through investments in the acquisition of clean urban transport rolling stock, support of clean urban transport infrastructure, including modernization / reconfiguration of the street network; ✓ mobility corridor, consisting of one or more proposals / projects from the approved SUMP, considered strategic at the level of the local public authority to support public passenger transport, cycling and / or pedestrian traffic; ✓ Development (extension / modernization) of the necessary infrastructure for an efficient use of public transport; ✓ Acquisition of ecological students transportation; ✓ Construction / modernization / rehabilitation of depots / bus bases related to local / zonal public passenger transport, including related technical infrastructure; | <p>Local public authorities in urban areas Partnerships between local public authorities in the urban environment and local public authorities in the functional urban area (if applicable)</p> |

| Axis | Priority | Policy objective / specific objective | Actions / Types of projects | Potential beneficiaries |
|------|----------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| | | | <ul style="list-style-type: none"> ✓ Improving existing public transport stations, including the construction of new intermodal stations and terminals for public transport; ✓ Infrastructures for alternative fuels, stations / charging points; ✓ Realization of park and ride type systems; ✓ Supporting the realization / modernization of infrastructures for non-motorized trips: ✓ Creation / modernization of pedestrian routes, investments in cycling infrastructure, bicycle rental systems, etc. ✓ Measures to support the public authorities and institutions in the elaboration / updating of the SUMP, in the operationalization of the contracts for delegating the management of the public passenger transport service <p>Digitization of urban transport</p> <ul style="list-style-type: none"> ✓ Measures for the digitization of urban transport (eg e-ticketing systems for passengers, systematization of intersections) | |

5.2 Background

Following the meetings with the stakeholders realized through the DECARB project was identified the need of more favourable conditions for accessing European funds in order to finance projects that proposed a larger number of measures designated to the energy efficiency, reduction of CO2 emissions and projects that propose job creation, by introducing facilities in European funding schemes at the regional level.

The action will highlight the effectiveness of the support intervention carried out through European funding, will provide information, will identify future support directions and policies at which new interventions are needed.

5.3 Timeframe

| | |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2022 –2027 | <p>Monitoring the projects funded through ROP 2014-2020:</p> <p>Priority Axis 3 - Energy efficiency and green infrastructure, PO 2 / SO 1 Promoting energy efficiency and reducing greenhouse gas emissions and PO 2 / SO 7 Improving the protection of nature and biodiversity, green infrastructure especially in urban areas and reducing pollution;</p> |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|--|----------------------------------------------------------------------------------------------------------------------|
| | Priority Axis 4 - Sustainable urban mobility - PO 2 / SO 8 Promoting sustainable multimodal urban mobility |
|--|----------------------------------------------------------------------------------------------------------------------|

5.4 Stakeholders involved

| Name of Organisation | Role in Action Plan |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| South-West Oltenia Regional Development Agency | Responsible with the monitoring process, as Intermediate Body for Regional Operational Programme 2021-2027 |

5.5 Costs and Funding Sources

| Costs | Funding Sources |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total value of financing the action: 373.591.000 Euro, with possibilities to increase. | ROP 2021- 2027 - Priority Axis 3 - Energy efficiency and green infrastructure ERDF allocation proposal: 236.051.000 Priority Axis 4 - Sustainable urban mobility ERDF allocation proposal: 137.540.000 euro |

5.6 Risk and Contingency Plans

| Description of Risk | Level of probability (High, Medium, Low) | Description of Contingency Plan |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The total value of eligible applications higher than the budget allocated to Priority Axis 3 - Energy efficiency and green infrastructure and Priority Axis 4 - Sustainable urban mobility. | Medium risk | Eligible projects with a lower score than those financed directly will be placed on a reserve list and will be financed when remaining funds are available for other financing measures. |

5.7 Monitoring

| Self-defined Performance Indicators | | |
|-------------------------------------|--------|-----------------------|
| Indicator | Target | Means of Verification |
| | | |

| | | | |
|-----------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------|--------|
| Number of axis that will finance energy efficiency measure | 2 | Project announcements | launch |
| Output Indicators | | | |
| Indicator | Target | Means of Verification | |
| The number of projects implementing measures to reduce CO2 emissions. | Number of projects submitted within the two axes | Documents related to the contracted projects. | |

Institution: South-West Oltenia Regional Development Agency

Name of Signatory: Marilena Bogheanu

Position: General Director

General Manager - DeCarb Project

Date:

Stamp (if available)

Signature

Institution: South-West Oltenia Regional Development Agency

Name of Signatory: Lavinia Cretu

Position: Activities Implementation Manager - DeCarb Project

Date:

Stamp (if available)

Signature