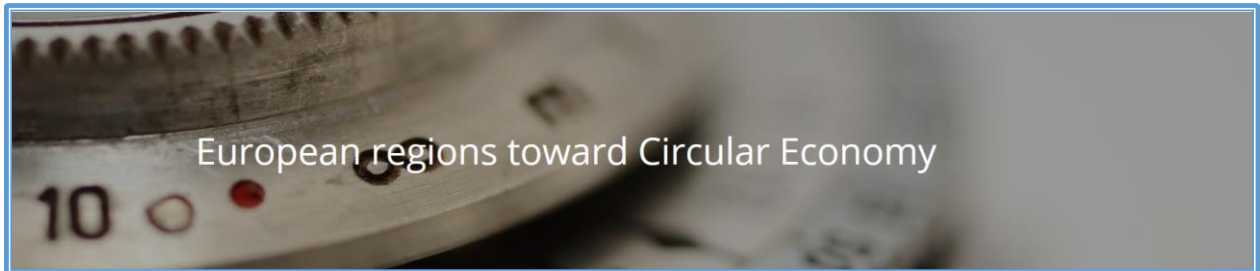




**"CIRCE - EUROPEAN REGIONS TOWARD  
CIRCULAR ECONOMY"  
INTERREG EUROPE PROJECT**



**ACTION PLAN**

**PROJECT PARTNER 7 - SOFIA MUNICIPALITY**

**2019 Sofia**





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## I. PART I. GENERAL INFORMATION

**Project:** CIRCE – „CIRCE - EUROPEAN REGIONS TOWARD CIRCULAR ECONOMY”, INTERREG EUROPE PROJECT

**Partner organization:** Sofia Municipality

**Other partner organizations involved:**

- Lombardy Region, Italy;
- Government of Catalonia, Ministry of Territory and Sustainability;
- Marshal's Office of Lower Silesia Voivodeship, Poland;
- Province of Gelderland, Netherlands;
- London Waste and Recycling Board, GB;
- Creation Development EcoEntreprises, France;
- Association of Municipalities and Towns of Slovenia.

**Country:** Bulgaria

**NUTS2 region:** BG412 Sofia district

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## II. PART II. POLICY CONTEXT

**The Action Plan aims to impact:**

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

**Name of the policy instrument addressed:**

The Action Plan is prepared using a combined tool, including specific activities oriented towards the implementation of circular economy approaches and information provision and results sharing, through public campaigns and public access to data.

The results of the prioritization and analysis of the development policies at the local level are used to systematize the specific normative instruments that will support the practical implementation of circular economy models, laid down in Development Plan of Sofia Municipality 2014-2020, Environmental Protection Program 2018-2027, Waste Management Program 2015-2020, OECD Policy Toolkit, and other documents and materials.

This instrument discussed the possibility of adopting the sectoral regulatory framework in the waste management sector by implementing the circular economy measures.

The Ministry of Environment and Waters initiated a procedure for development of a strategy and action plan for transition the circular economy in Bulgaria for the period 2021-2027 and development of methodologies in relation to Art. 4 of the Waste Management Act (WMA), as well as the control requirements over the implementation of the conditions in the Decision on by-product under art. 4, para. 2 of the WMA, which can also be adopted as a policy for the implementation of circular economy measures.





The main economic instrument for supporting the circular economy models in Bulgaria is the opportunities provided by Operational Program "Innovation and Competitiveness" 2014-2020 (OPIC) and Operational Program "Environment 2014-2020" (OPE).

OPIC is the main programming document at national level outlining the support for Bulgarian business from the European Structural and Investment Funds for the period 2014-2020 and is aimed to addressing the needs, overcoming the challenges and embracing the opportunities for development of Bulgarian economy. The measures set out in the program aim to contribute to the creation of sustainable, long-term competitive advantages of the Bulgarian enterprises and accelerate the transition to a knowledge-based economy. Support is focus on the development of innovation, entrepreneurship, the growth capacity of small and medium-sized enterprises, and energy and resource efficiency as well.

As a result in 2018 project selection procedure BG16RFOP002-3.004 "Support for Resource Efficient Pilot and Demonstration Initiatives" was opened, in which more than 85 contract grants were signed with BGN 70 846 580.47 total amount of the grant awarded.

In relation to the development of the Operational Program "Environment" for the period 2014-2020 and identification of the needs in the sector, the Managing Authority (MA) of the Program, together with the specialized directorates at the MoEW, prepares an analysis of the current situation in the environmental sectors and Climate Change for the period 2007-2012. The analysis complies with the European and national strategic documents and legislative commitments in the environmental and climate change sectors, detailing the country's commitments and deadlines for their implementation. It outlines what has been achieved in 2007-2012 period and the needs that can be funded by the European Structural Funds in the programming period 2014-2020.

Taking into account the analysis results and the latest data regarding the development of the environmental infrastructure, the basic needs that have been identified and which determine the logic of intervention under the Operational Program are mainly focused at water and waste sectors. Due to that, Project Selection Procedure "Implementation of demonstration projects in the field of waste management" was announced for public discussion in May 2019. The main goal of the procedure is to support the achievement of the Specific Objective 1 of Priority Axis 2 "Waste" of OPE 2014-2020 to reduce the amount of landfilled waste and to increase the share of waste recycling. Accordingly, the objective of the procedure is to prioritize the most high-level waste management activities to help achieve the objectives set out in Art. 31, para. 1 of the WMA, with regard to domestic waste. The procedure is expected to contribute to the transition to a circular economy in Bulgaria and to help achieve recycling of 50% of household waste by 2020, and to make a concrete contribution to the formation of a zero waste society, raising public awareness of compliance with the waste management hierarchy and the reduction of the amount of landfilled waste.

The Science and Education for Smart Growth Operational Programme (OP SESG) is entrusted to the Ministry of Education and Science (MES) and its total budget amounts to BGN 1.37 billion. (European and national funding). OP "Science and Education for Smart Growth 2014-2020" includes two main tasks in its logic: To be among the key instruments for achieving the objectives adopted by Bulgaria within the framework of the Strategy for smart, sustainable and inclusive growth (Europe 2020 Strategy); To serve as an effective tool for implementing cohesion policies, according to the agenda at national and Community level.





The main objectives of Science and Education for Smart Growth Operational Programme in the context of the Europe 2020 Strategy are as follows: increase of investment in science and research; reduction of the percentage of early school leavers; increase of the percentage of university graduates.

The program defines three priority axes to achieve the objectives.

**PRIORITY AXIS No. 1** - The first of the three main priority axes of the programme - "Research and Technological Development" has a budget of almost BGN 560 million from the European Regional Development Fund. Among the priorities set here is the enhancement of the quality of research and the development of innovation. The national objective is to achieve sustainable growth in Bulgaria, and it requires targeted investment in priority science fields, specific for the country, skilled researchers and inventors and an attractive science environment.

**PRIORITY AXIS No. 2** - Information and Communication Technologies The second main priority axis "Education and Lifelong Learning" has a budget of almost BGN 504.6 million and the funds are from the European Social Fund. It is related to the other main objective of the new Operational Programme – improvement of access to higher education and increasing the share of graduates between 30-34 years of age to 36%. Incentives to motivate young people to complete higher education (scholarships, student crediting) are foreseen, with special attention paid to students with special achievements in science, engineering and technical activities, innovation and entrepreneurship, art, culture and sports (using the principle of competitive application).

**PRIORITY AXIS No. 3** - The third main priority axis - "Educational environment for active social inclusion", will invest through the European Social Fund a total of BGN 252 million for active inclusion and for socio-economic integration. This priority axis aims to establish an educational environment that encourages the development of the potential of each child and student for personal development as well as successful realization and socialization. It also emphasises the effective integration into the educational system of children, students and youth from ethnic minorities and other vulnerable groups. The resources from this axis are aimed at higher quality and better access to education by creating a supportive environment for education of children and students with special educational needs.

Sofia municipality is able to combine these instruments in waste management program for the next period by providing information about opportunities for financing circular economy projects for both companies and municipal enterprises and other eligible beneficiaries. The program may also include information on legislative initiatives promoting the creation of circular economy models, mechanisms and funds to support circular economy business initiatives, the analysis of the opportunities and challenges of implementing circular economy-oriented models and others.

The responsibility for development of waste management program for the next period as policy tool lay upon Sofia municipality.

Sofia Municipality implements the Waste Management Program (WMP), approved by Decision No. 423 under Protocol No. 85/09.07.2017 of the Sofia City Council. The Waste Management Program has been developed and adopted for a period that covers the period of validity of the National Waste Management Plan and is in accordance with the structure, objectives and estimations of the latter.





The Municipal Waste Management Program 2015-2020 is a continuation of the municipal strategic and planning documents in the field of waste management adopted after 2005, when the targeted and consistent planning of waste activities on the territory of the municipality began in practice.

The main purpose of the WMP is to serve as a practical tool for planning and justification at the earliest stage of the necessary resources, measures and actions so that the municipality may provide waste management services of the necessary quality to the population and the business and to improve waste management in compliance with the common European waste management hierarchy.

The Waste Management Program of Sofia Municipality has four strategic objectives:

1. Reducing the harmful effects of waste by preventing its generation and promoting its reuse.
2. Increasing the amount of recycled and recovered waste and reducing and preventing the risk of landfilled waste.
3. Waste management guaranteeing a clean and safe environment.
4. Making the public a key factor in implementing the waste management hierarchy.

The program has a direct environmental focus and the achievement of the objectives of the municipal waste management program has a positive impact on other aspects of the environment and on human health.

An action plan has been developed as part of the WMP, which contains eight sub-programs with measures to achieve specific objectives that will contribute to the achievement of the four strategic objectives, namely:

- waste prevention,
- separate collection and achievement of the targets for preparation for reuse and recycling of household waste from at least paper and cardboard, metals, plastic and glass,
- separate collection and achievement of the targets and requirements for household biodegradable and bio-waste,
- implementation of the requirements for construction and demolition waste,
- management of sludge waste from the wastewater treatment plant,
- closure and reclamation of landfills with discontinued operation and follow-up monitoring,
- implementation of awareness campaigns and informing the public on waste management,
- provision of information to the municipal administration and improvement of the administrative capacity.

The action plan part of the WMP includes specific measures to gradually achieve, by 2020, regulatory targets for:

- preparation for re-use and recycling of household waste, including at least paper and cardboard, metals, plastic and glass from households and other sources, as follows:
  - by 1 January 2016 - at least 25 percent of their total weight;
  - by 1 January 2018 - at least 40 percent of their total weight;
  - by 01 January 2020 - at least 50 percent of their total weight.







- limiting the amounts of landfilled biodegradable household waste to 35 percent of the total amount of the same type of waste generated in Bulgaria in 1995, at the latest until 31 December 2020.

The implementation of the measures included in the action plan foresees the expected costs, such as indicative values, as well as the likely sources of funding. Waste management requires the implementation of different types of activities and different sources of funding have been indicated. Each year, with the adoption of the budget of Sofia Municipality, financial resources are allocated for implementation of the measures provided for in the action plan part of the WMP. The mayor of the municipality informs annually, by March 31, the municipal council about the implementation of the action plan part of the WMP during the previous calendar year.

**Further action plan details that should contribute to improving legislative instruments:**

The action plan is developed in accordance with the guidelines of the project lead partner and the submitted template. The content of the action plan is divided into the following main sections: General information; Policy context; Details of the actions envisaged; Define specific actions; Conclusion. Improving the legislative instruments is envisaged to be achieved by including the circular economy as an element of the Sofia Municipality's Waste Management Program for the next period.

### III. PART III. DETAILS OF THE ACTIONS ENVISAGED

This section describes the concrete actions, the role of the stakeholders, deadlines for their implementation, the indicative size and the possible sources of funding.

#### III.1. ACTION 1 LEGISLATION DEVELOPMENT

**ACTION NAME:**

**STRATEGIC DOCUMENTS DEVELOPMENT**

**1. The background (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)**

This action is adopted from the good practices and opportunities identified by the project partners as follows:

- Good practice LombardyGP40 Region Lombardy, related to mandatory Green Public Procurement. In Italy, as the first country in Europe, Green Public Procurement became compulsory with the adoption of the Decree 50/2016. All Public Administrations must apply minimum environmental criteria set by the Ministry of the Environment for 100% of the value of all purchases of goods and services. GPP is an opportunity to increase not only the quantity but also the quality of materials and goods resulting from the recycling of waste and therefore really may stimulate the Circular Economy (as the European Commission also supports in the Circular Economy Package) as the system requires that the public Administration buy only certified products and corresponding to the minimum environmental criteria set by the Ministry of the Environment;
- Good practice SOSGP01 "Zero Waste" implemented by the Association of Municipalities and Towns in Slovenia. With adopting their Zero waste plan they commit to increase separate collection to 78 % and decrease the amount of residual waste to 60 kg per person per year until 2025;





- Opportunity Lombardy03, aiming to improve the effectiveness of the avoidance of food waste in companies. For this opportunity it is crucial to strengthen and increase the enforcement of the rules for companies, in particular of the national law (Gadda law);
- Opportunity Lombardy16, aiming to increase the percentage of recycled materials. One of the main tools available for developing this opportunity is to increase the CEM (minimal environmental criteria) relevance in the Green Public Procurement: the challenge is to increase the percentage of recycled materials through mandatory laws, increasing circular economy aspects;
- Opportunity Lombardy37 and 42, aiming standardization on waste management from collection to recycling, by build a common rules on waste management from collection to recycling of end of life products for better recovery and recycling of goods;
- Opportunity LWARB04, aiming to incorporate relevant circular economy principles into London Plan and local plans. Work to influence GLA through workshops etc. to ensure London plan includes circular economy. This will include investigating how a circular economy statement policy could be included in the London Plan, and what guidance would be needed. This could include guidelines for deconstructing buildings and treatment of waste if a gap exists;
- Opportunity LWARB04, identified the need for a high level cross sectoral vision and plan which stakeholders can buy in to and which is kept updated. LWARB created Route Map, this can be shared with partners and should be kept updated and integrated with metrics (could also include municipal level route maps).

The above-mentioned good practices and identified opportunities will be adapted as part of the action plan to the Sofia Municipality's waste management program for the new period.

## **2. Action (please list and describe the actions to be implemented)**

Initiate steps to modify Sofia municipality waste management program for the next period with the inclusion of a circular economy section.

Indicative steps related to the implementation of the action are:

- Preparation of documentation for contractor selection, including technical specification with integration of circular economy section of the program;
- Conduct a procedure and select a contractor to develop the program;
- Preparation of the waste management program;
- Coordination of the draft program within the Sofia Municipality's 'responsible directorates and state institutions;
- Public discussion of the draft program;
- Carrying out the assessment and EA procedures of the program;
- Approval from the Sofia Municipal Council of the proposed waste management program and publication on the municipal website of the approved program. ;
- Implementation of the measures set out in the Program Action Plan.

## **3. Stakeholders involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)**







The Sofia Municipality, the Ministry of Environment and Waters, the Regional Inspectorate of Environment and Waters Sofia; The residents of the municipality, as well as all legal and economic persons involved and/or working with the area of waste management on the territory of the municipality.

**4. Timeframe (please describe the indicative timeframe of the action).**

The present action should be implemented by 2022.

**5. Costs (Please estimate the costs associated with the implementation of the action)**

The indicative value estimated for the development of the waste management program is BGN 97 791.50 (€ 50 000.00).

**6. Funding sources (please describe how funding will be provided for the implementation of the action, using the legislative instruments described in Part II or other sources.)**

The activity financing will be provided by the Sofia Municipality budget and the accumulated deductions under Art. 64 of the Waste Management Act.

## III.2. ACTION 2 PELLET PLANT

**ACTION NAME:**

DESIGN and CONSTRUCTION of PELLET INSTALLATION

**1. The background (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)**

This action is adopted from the opportunities identified by the project partners as follows:

- Opportunity Lombardy13, aiming to Reuse of built environment waste materials in other sectors as an alternative destination and application can be thought for the waste materials coming from the build and demolition activities;
- Opportunity LowerSilesia19, aiming to support start-up development which specialize in industrial biotechnology. Proposed support programs for new entrepreneurs operating in the economy sector and realizing idea of CE;
- Opportunity Gelderland04, aiming Emission Trading by smarter producing to get CO<sub>2</sub> reduction.

The results of the above-mentioned good practices and the identified opportunities will not only be adapted, as part of the canvas for the municipal waste management program for the new period, but also a pellet installation will be design and construct. The pellet plan will recover the construction and demolition waste and will reduce the carbon footprint of the treatment process.

**2. Action (please list and describe the actions to be implemented)**

Design and construction of a pellet installation for recovery of wood waste generate from Municipal enterprise for waste treatment – Sofia and feeding the administrative buildings of Sofia Municipality, with target Biodegradable waste.





Indicative steps related to the implementation of the action are:

- Preparation of feasibility study;
- Preparation of conceptual design;
- Selection of a contractor for the practical realization of the initiative in accordance with the Public Procurement Act for assignment of the necessary D&B procedure;
- Practical realization of the initiative and commissioning.

**3. Stakeholders involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)**

Sofia Municipality, SMEs, generators of construction and demolition waste.

**4. Timeframe (please describe the indicative timeframe of the action)**

The implementation of the action started in 2019, the feasibility study and the conceptual design were developed, and the documentation for the selection of the contractor is being prepared. The pellet plant should be constructed and put into operation by the end of 2021, latest the middle of 2022.

**5. Costs (Please estimate the costs associated with the implementation of the action)**

Based on the results of the feasibility study and conceptual design, the indicative budget needed to carry out this action is BGN 2 444 787.5 (€ 1 250 000).

**6. Funding sources (please describe how funding will be provided for the implementation of the action, using the legislative instruments described in Part II or other sources)**

The financing of the activity will be provided by the Sofia Municipality budget. The action will be included in the waste management program for the new period and its action plan.

### III.3. ACTION 3 MOBILE SEPARATE COLLECTION

**ACTION NAME:**

MOBILE SEPARATE COLLECTION

**1. The background (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)**

This action was adopted from the LombardyGP07 good practice to promote and increase the diverse collection of WEEE through the deployment of a mobile environmental centre to collect WEEE in various parts of Milan. The Mobile Environmental Centre changes once a week to resolve the service in certain popular areas.

**2. Action (please list and describe the actions to be implemented)**

Implementing separate collection in city transport vehicles ( buses and trolleybuses) ,owned by Sofia Municipality, by positioning a mobile separate collection bins and guidelines for their purpose. That will create an opportunity for Sofia Municipality's guests and citizens to use the possibility for separate collection of WEEE, during their travels.

Indicative steps related to the implementation of the action are:

- Preparation of feasibility study;





- Discussion of the results obtained from the feasibility study;
- Identification of specific instruments, funds for realization of the action;
- Practical implementation of the action.

**3. Stakeholders involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)**

The Sofia municipality, the residents of the municipality, the users of public transport, the WEEE recovery organizations, etc.

**4. Timeframe (please describe the indicative timeframe of the action)**

The action should begin up to 2022.

**5. Costs (Please estimate the costs associated with the implementation of the action)**

The indicative value required to realize this action is BGN 97 791.50 (€ 50 000.00)

**6. Funding sources (please describe how funding will be provided for the implementation of the action, using the legislative instruments described in Part II or other sources)**

The financing of the activity will be provided by the Sofia Municipality budget or other national and/or international funds. The action will be included in the waste management program for the new period and its action plan.

#### III.4. ACTION 4 GUIDELINES PREPARATION

**ACTION NAME:**

GUIDELINES and INSTRUCTIONS PREPARATION

**1. The background (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)**

This action is adopted from the good practices and opportunities identified by the project partners as follows:

- Good practice LombardyGP21, aiming to contracting concerned the redevelopment of a building in Milan through a preliminary strip out operation. The solutions proposed by the company are aimed at eliminating and minimizing impacts generated on the environment by demolition operations. In order to select the most suitable solutions to the case, an analysis of the activities was preliminarily carried out to identify the environmental components that are affected by the demolition activities;
- Good practice LombardyGP36, related to EU Construction&Demolition Waste Management Protocol. European Commission is introducing a new protocol on construction and demolition due to C&D Waste is the largest waste stream in the EU. Based on independent research, the Commission is introducing the non-binding guidelines as a proposal to the industry. This Protocol fits within the Construction 2020 strategy, as well as the Communication on Resource Efficiency Opportunities in the Building Sector. It's also part of the European Commission's ambitious and more recently adopted Circular Economy Package. Its overall aim is to increase confidence





in the Construction and Demolition waste management process and the trust in the quality of Construction and Demolition recycled materials;

- Opportunity Lombardy06, aiming waste recover from renovation activities. Concerning Italy, one of the flow of C&D waste decays from building renovation; in particular, the main feature is the micro-renovation (ANCE LOMBARDIA-ANPAR): renovation activities on small buildings or on small parts of them, with a high percentage of historical buildings. Waste materials have to be recovered and reused for other purposes;
- Opportunity Lombardy07, aiming to increase the (quality of the) regeneration of (target) city areas and thus increase the recovery of construction and demolition waste. "An important role for achieving this result (perhaps the most significant role) can have the standardization policies on urban regeneration. This seems to be the most important policy option with a key role that it can has in developing CE. The standardization policies on urban regeneration will address the recovery of city areas and meanwhile the recovery of important quantities of construction and demolition waste. The Lombardy Region has launched a working group to implement it.

The analysis of the structure, type and distribution of responsibilities described in the above-mentioned best practices and opportunities will be used as feedback during the preparation of guidelines and instructions.

## **2. Action (please list and describe the actions to be implemented)**

Preparation of guidelines containing sequence actions, that have to be taken in case of destruction and demolition of buildings and the subsequent treatment of generated waste.

Indicative steps related to the implementation of the action are:

- Identification of potential target groups;
- Organization of workshops, round tables with the target groups;
- Conducting a study on the technical, financial and environmental effectiveness of the guidelines;
- Conduct a procedure and select a contractor to develop the guidelines/instructions;
- Preparation of draft guidelines/instructions;
- Coordination of the draft guidelines/instructions with the target group;
- Publishing the prepared guidelines/instructions on the website of the municipality.
- Sending of official letter to the Bulgarian Construction Chamber with the prepared guidelines/instructions to be circulated among the Chambers 'members.

## **3. Stakeholders involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)**

Sofia Municipality, legal and economic entities involved and/or working with the area of construction waste management on the territory of the municipality, waste recovery organizations, construction and building companies, etc.

## **4. Timeframe (please describe the indicative timeframe of the action)**

The action should begin up to 2021.

## **5. Costs (Please estimate the costs associated with the implementation of the action)**

The indicative value required to realize this action is BGN 29 337.45 (€ 15 000.00).





#### **6. Funding sources (please describe how funding will be provided for the implementation of the action, using the legislative instruments described in Part II or other sources)**

The financing of the activity will be provided by the Sofia Municipality budget or other national and/or international funds.

### **IV. PART IV. CONCLUSION**

The implementation of the concrete actions set out in current plan will provide an opportunity to increase the application of circular economy models in the sector, as well as to ensure the achievement of the sub-targets set in the project. The goal is building a stronger framework for circular economy models and better coordination of activities between stakeholders; Increasing cooperation among stakeholders in the field of the circular economy; Increasing initiatives to take measures aimed at circular economy models; Prevention of waste generation; Improving waste management by applying circular economy models; Improving circular economy actions at the local level.

Within the project, 17 opportunities were identified and evaluated using the Analytical Hierarchy Process (AHP). The identification of potential opportunities for the implementation of circular economist's practical models started with the implementation of the project activities. In the process of project implementing activities, part of the defined as potential actions were realized through the implementation of approved projects, others was achieved the indirectly objectives and for the third ones were redefined their practical realization.

The ENERGY RECOVERY OPPORTUNITY assessed as the highest priority opportunity is not included in the Action Plan due to the fact that its implementation and the construction of the facility will take place beyond the project duration.

The action cannot be identified in any of the three groups as well. Because of that the ENERGY RECOVERY OPPORTUNITY is described separately in the action plan as follows.

#### **IV.1. ENERGY RECOVERY**

##### **ACTION NAME:**

ENERGY RECOVERY

##### **1. The background (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)**

The current action is adopted from the good practice SOSGP01 "Zero Waste" implemented by the Association of Municipalities and Towns in Slovenia. Currently, Ljubljana is already the EU capital with best performance regarding waste separation and waste avoidance; it separately collects 60 % of municipal waste and generates less than 150 kg of residual waste –what is not recycled or composted- per person yearly. With adopting their Zero waste plan they commit to increase separate collection to 78 % and decrease the amount of residual waste to 60 kg per person per year until 2025. With this commitment for zero waste, Ljubljana officially rules out building any incinerator in order to have the flexibility to continue reducing the non-recyclable waste and push for prevention and recycling. But also other, smaller, Slovenian municipalities are committed to Zero waste plans, like Vrhnika, Borovnica, Log-Dragomer, Bled, Gorje, Radovljica and Slovenske Konjice.





## **2. Action (please list and describe the actions to be implemented)**

The project is the third phase of the Integrated Waste Management System of Sofia Municipality and includes the construction of a modern facility for high efficient energy recovery of RDF produced in the MBT Waste installation of the SM (Phase 2) and final production of heat and electricity for approx. 40 000 families. The produced electricity will be supplied to the national electricity grid and the heating energy to the district heating network on the territory of the SM. The installation is a "waste for energy" solution and has the following preconditions: RDF for recovery: 180,000 t/year; Total facility availability: 8 000 h/year; RDF calorific value: Rated-13 GJ/t, deviation between 10 GJ/t and 16 GJ/t.

The project has the following basic systems:

- RDF storage;
- Furnace (mobile burning technology with a capacity of 22.5 t/h at 13 MJ/kg);
- Boiler (horizontal with steam with parameters: 100 t/h, 60 bar, 425°C);
- Flue gas treatment (reactor, bag filter, flue gas condenser);
- Chimney-wet 80 meters;
- Turbine/generator (electricity generation, gross 21 MWe);
- Heat generation with 55 MWt capacity;
- Heat accumulator, storage capacity 230 MWh;
- Auxiliary equipment (cooling system, UPS, cranes, etc.)

The installation is to be located on site owned by TOPLOFIKATSIYA SOFIA EAD, with a total construction area of about 19 000 m<sup>2</sup>. The main production-administrative building, reception room, modified fuel bunker, ash storage, fuel tanks for diesel generator and ammonia water, heat accumulator, electronic scales and transport area will be located within the separate site. The installation is expected to have appropriate control and monitoring of pollution, soil, air and water.

Indicative steps related to the implementation of the action are:

- Preparation of a project proposal under Operational Program Environment 2014-2020;
- Signing a Grant Contract;
- Provide financial resources to covering the project's own contribution as well as ineligible costs and costs before they are reimbursed from the program;
- EC project evaluation;
- Practical implementation of project activities.

At the time of drafting the current plan, the activities are up to an "EC project evaluation", allowing the evaluation to be completed before the implementation of Semester 5 of the current Circe project and moving to the phase of practical realization.

For the purposes of project proposal BG16M1OP002-2.008-0001-C01 to the OP Environment 2014-2020, the following documents have been prepared:

- Feasibility/Pre-investment study;
- Preliminary design of the installation;
- Preparation of cost-benefit analysis and feasibility study for the Project;







- Preparation of financial analyses and studies, justifications, opinions, information and documentation for the purpose of issuing administrative acts on environmental legislation and issuing permits/registration documents, etc. documents necessary for the preparation of the project proposal;
- Updating of the prepared documents;
- Preparation of Environmental Impact Assessment Report (EIA);
- Preparation of a detailed development plan - amendment of a plan for regulation with which the site owned by TOPLOFIKATSIYA SOFIA EAD for the construction of the installation is assigned;
- Preparation of a complex report for the assessment of the conformity of the investment project with the basic requirements for the construction works;
- Implementation of specialized services in relation to the eligibility of funding for the 2014-2020 OPE project - legal, economic, notary, engineering, etc., incl. drafting a legal opinion on the installation's scope of application of Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading and defining the type of installation;
- Providing consultancy assistance in solving problems encountered in preparing the necessary documents in the application process;
- Preparing an analysis of the project's compatibility with the applicable EU state aid legislation;
- Drafting a Partnership Agreement and a Financing Agreement between Sofia Municipality and TOPLOFIKATSIYA SOFIA EAD;
- An elaborated and updated Grant Application Form (in English) for Grant under OP "Environment 2014-2020";
- Drafting a letter to the State Agency for Electronic Governance for the approval of the Project;
- Establishment of a Team for preparation of the project proposal;
- Documents submitted for the issuance of Building Permit;
- Prepared and submitted Application form, incl. completing the design and applying the necessary technical and administrative documentation according to the Procedures Guidelines.

**3. Stakeholders involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)**

Sofia Municipality is beneficiary of project BG16M1OP002-2.008-0001-C01 "Design and construction of cogeneration plant in Sofia with RDF energy recovery - third phase of an integrated system of municipal waste treatment facilities". The project partner is TOPLOFIKATSIYA SOFIA EAD.

Project stakeholders are all residents of Sofia municipality as well as all legal entities, for which will be created a possibility for energy recovery of their generated waste.

**4. Timeframe (please describe the indicative timeframe of the action).**

The awarding grant contract between MA of OPE and Sofia municipality was signed on 30.11.2018, which started the project implementation. The expected completion date of the project activities is up to 30.04.2024.





**5. Costs (Please estimate the costs associated with the implementation of the action)**

Total project budget is BGN 308 117 568,47 (€ 157 538 011,21), with a net grant of BGN 179 570 918.88 (€ 91 813 152.92).

**6. Funding sources (please describe how funding will be provided for the implementation of the action, using the legislative instruments described in Part II or other sources.)**

ERDF financial resource is foreseen through Operational Program "Environment 2014-2020". The Sofia municipality financial contribution in the project has calculated based on the results of the developed cost-benefit analysis and will be covered by an EIB loan, which will be reimbursed by the project partner TOPLOFIKATSIYA SOFIA EAD.

## **IV.2. IMPLEMENTED OPPORTUNITIES**

This group examines all the opportunities that have been realized during the implementation of the current project activities. Each of them will be referred as good practices for a circular economy. These actions are:

### **IV.2.1. CLEAN TECHNOLOGIES FOR SUSTAINABLE ENVIRONMENT**

This action is adopted from the opportunities identified by the project partners as follows:

- Opportunity Lombardy22, aiming to increase the networking of Small and Medium entities. The objective is to gather the attention of small and medium realities through communication and active involvement campaigns and to create a stable regional network of them, in order to go together towards the same direction of a circular economy region. The SMEs need to understand the importance of creating network among them, necessary to create bigger opportunities together;
- Opportunity LowerSilesia07, related to growing demand for innovative products/services. For many years, there has been an increase in the demand for the innovative products and services in the country and in the world. The innovations implemented by the companies are one of the response to the dynamic changes taking place in the market environment;
- Opportunity LowerSilesia19, aiming to support start-up development which specialize in industrial biotechnology. Proposed support programs for new entrepreneurs operating in the economy sector and realizing idea of CE;
- Opportunity Gelderland04, aiming Emission Trading by smarter producing to get CO<sub>2</sub> reduction.

This action is implemented through the approved project BG05M2OP001-1.002-0019-C03 "Clean technologies for sustainable environment - water, waste, energy for a circular economy" under the OP "Science and Education for Smart Growth 2014-2020" that is focused on building an efficient infrastructure of modular principles in the field of:

- Control, purification, water management;
- Treatment, recycling, recovery and disposal of solid waste;
- Implementation of an energy and resource-efficient economy by obtaining renewable and alternative sources of energy, materials and resources;





- Stimulating innovation in sustainable environment and circular economy technologies;
- Development and realization of entrepreneurship of young specialists in the above mentioned fields.

As a result of the project implementation, top-level research is expected to produce products, services and clean technologies with high resource and energy efficiency and significant economic, social and environmental added value, with training, dissemination results, transfer and commercialization of technology and technological entrepreneurship. Large-scale training and qualification programs are planned for students, business graduates and scientific institutions.

The project for the establishment and development of the Competence Center "Clean Technologies for Sustainable Environment - Water, Waste, Energy for a Circular Economy" plans to build a distribution of scientific infrastructure according to the needs and tasks that the partners and activities that are planned. The new scientific infrastructure is a "distributed infrastructure" type and is planned to take place in three stages, as follow:

- Stage I: Construction of a new building for the needs of the Center for Competence (CC) in the direction of water with a technological entrepreneurial accelerant, its putting into operation and substantial modernization of existing laboratories;
- Stage II. Equipment and commissioning of laboratory complexes and accelerators for technological entrepreneurship of the CC;
- Stage III. Establishment of a CCS general information system for the integration of large amounts of data, application of data analysis and forecast methods, and connection with application, data and service stakeholders for a competitive advantage.

The first and third stages will be performed in parallel and the second stage will start depending on the readiness to substantially modernize the scientific infrastructure of each partner.

The centre will be built up of three vertical modules - Waters, Solid Waste and Transfer and will have 4 horizontal priorities: "Eco-efficiency": Developing innovations for efficient technology exploitation; "Energy": Obtaining renewable and alternative energy sources; "Resource recovery": Obtaining chemical elements and bio-waste from waste and waste water; "Alternative Resources": Getting new, composite and nanomaterials from waste.

One of the project indicators to be achieved is the realization of joint research projects developed between centres (CCPs and CCPs) and business.

Beneficiary of project BG05M2OP001-1.002-0019-C03 Pure technologies for sustainable environment - water, waste, energy for circular economy is SOFIA UNIVERSITY "ST. KLIMENT OHRIDSKI". The partners are:

- UNIVERSITY OF ARCHITECTURE, CONSTRUCTION AND GEODESY;
- UNIVERSITY OF FORESTRY;
- PROFESSOR DR. ASEN ZLATAROV UNIVERSITY – BURGAS;
- INSTITUTE OF PHYSICO-CHEMISTRY;
- INSTITUTE OF ORGANIC CHEMISTRY WITH PHYCHEMISTRY-SOFIA CENTER;





- MICROBIOLOGY INSTITUTE;
- "CLIENTECH BULGARIA" FOUNDATION.

Associated partners are **Sofia Municipality, Sofia Waste Treatment Plant, Sofiyska Voda AD, Interplast BG Ltd., Energy Agency - Plovdiv, University of Modena-Italy.**

The contract for the provision of grants between the Managing Authority of OPNOIR and the Sofia University was signed on 30.03.2018, which started the implementation of the project. The expected completion date of the project activities is up to 30.11.2023.

Total project budget is BGN 23 667 925.86 (€ 12 101 218.34), with a grant of BGN 23 667 925.86 (€ 12 101 218.34). Total RIS amounts is BGN 4 783 271.19 (€ 2 445 647.73), where the co-financing rate from the EU is 85,00%.

To finance the activity, ERDF financial resource is provided through the Operational Program "Science and Education for Smart Growth 2014-2020".

#### ***IV.2.2. CYCLING ACTIVITIES***

This action is adopted from the opportunities identified by the project partners as follows:

- Opportunity LowerSilesia19, related to support start-up development which specialize in industrial biotechnology, by proposing support programs for new entrepreneurs operating in the economy sector and realizing idea of CE;
- Opportunity Gelderland04, aiming Emission Trading by smarter producing to get CO<sub>2</sub> reduction.

The main objective of the action is to promote cycling as an opportunity to move to a central urban area of Sofia. The possibility is practically realized from June 2018. The shared service Sofia Urban Challenge provides the opportunity to rent the first 10 bikes, each day from 9 to 19 hours from the National Museum of History. Each of them is equipped with GPS and a developed route to Golden Bridges site. The wheelchair is located in front of the NMH, and bicycles can be rented through a special mobile application.

The trial period of electric bikes will last until October, and then recalculate both their number and possible routes.

Sofia Urban Challenge is result of the common work of several youth companies - bicycle manufacturers and mobile applications developers. That is first common action in Bulgaria to rent e-bicycles.

Partners in the implementation of the project are the start-up company Eljoy Bikes, the Cleantech Bulgaria and Climate-KIC Sustainable Business Network, which provide the necessary financial resources.

The practical realization of the project was supported by the expert assistance of the employees of Sofia Municipality and Green Sofia at Sofia Municipality.

#### ***IV.2.3. PUBLIC AWARENESS***

This action is adopted from the good practices identified by the project partners as follows:

- Good practice CataloniaGP18 toward ZERO WASTE. The practice is an initiative launched at Smart City Expo World Congress (SCEWC) in 2015 in order to reduce waste and increase the efficient use of our resources. SCEWC is fully committed to the





objectives of creating efficient, sustainable and economically viable cities, and the event is leading by example.

- Good practice LWARBGP02 named Love Food Hate Waste. WRAP's Love Food Hate Waste (LFHW) campaign provides useful reference and communications material that local authorities can draw on to promote food reduction in their area. LFHW has its own dedicated consumer facing website containing a wealth of detailed ideas to help individuals, communities and organisations reduce food waste as well as the LFHW partner website containing free materials, templates, and resources for local authorities.

The identified opportunity has been transformed into good practice through project implementation Stimulating citizens participation to recycle processes – Benefit As you Save – BAS<sup>1</sup>. The project focuses on the development of an Action Plan to conduct a pilot separate collection of packaging and food waste and to encourage citizens to participate in the recycling and reuse of materials. For 300 households from Sofia, 300 sets of home use containers (up to 25 l) have been purchased and supplied. The project also analyses the possibilities of creating different alternative types of benefits/incentives to promote separate collection based on the institutional framework and depending on the characteristics of local authorities and societies. The BAS project is funded under the Balkans - Mediterranean Transnational Cooperation Program (2014-2020). Leading partner of the project is the city of Voula, Attica, Greece. Partners are also the municipalities of Ilidjievo (Greece), Limassol (Cyprus) and Tirana (Albania), supported by the Entrepreneurship Center for SME Development and the Technical University "St. Kliment Ohridski "in Bitola, Macedonia.

All households from Blocks Nos. 151, 152 and 160 are invited to participate in the Project from "Nadejda 1" district.

On March 26, 2018, an informational meeting was held with citizens living in buildings Nos. 151, 152 and 160 from "Nadezhda 1". The Deputy Mayor of Ecology in Sofia Municipality, the Director of the Waste Management Directorate in the Municipality and the Mayor of the Nadezhda District, who presented in detail the objectives of the project, attended the meeting.

A study carried out in the framework of the BAS pilot project shows that the most preferred household containers for separate waste collection are 2 pcs. 25 litter containers for packaging (paper, plastic, metal and glass) and 1 pcs. specialized bio-waste container. The survey forms were distributed to the 300 households that declared their participation in the project.

On 1<sup>st</sup> March 2019, the Municipality of Sofia launched the pilot initiative to encourage the separate collection of household waste, which includes 300 households from Nadezhda district. The participation of the households was realized on a voluntary basis and for the effective realization of the project everyone received a free set of household containers for separate collection of waste, biodegradable food waste collection bags and a key for access to the fenced enclosures, so called "Clean island" with shared containers for separate collection, already equipped with volume sensors. Such a measure will allow a precise quantitative analysis of the activity of households in the project and the change in participants' daily habits. The duration of the initiative with citizens is 12 months.

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<sup>1</sup> <https://www.sofia.bg/en/web/guest/bas>







### IV.3. INDIRECT IMPLEMENTED OPPORTUNITIES

In the present group have been considered all the opportunities, whose main objectives were realized indirectly through the implementation of similar projects and/or through the implementation of similar initiatives.

#### IV.3.1. PARTNERSHIP

This action is adopted from the good practices and opportunities identified by the project partners as follows:

- Good practice LombardyGP02, related to introducing Food waste in school. Lombardy Region has realized a formation activity to teachers in collaboration with Ufficio Scolastico Regionale, aimed at introducing "Food waste" item into regional study programmes;
- Opportunity Lombardy22, aiming to increase the networking of Small and Medium entities. The objective is to gather the attention of small and medium realities through communication and active involvement campaigns and to create a stable regional network of them, in order to go together towards the same direction of a circular economy region. The SMEs need to understand the importance of creating network among them, necessary to create bigger opportunities together;
- Opportunity Lombardy23, related to major relevance to clusters role. The Region should greatly promote the role of the regional clusters as intermediaries among the Region itself, the companies and universities belonging to the same sector of the cluster, in order to create projects and paths to scale-up solutions and networks together;
- Opportunity Gelderland12 for development of databank for using waste material. Waste material become ingredients. A databank which connects companies who have waste materials and companies who are looking for ingredients.

Preparation and signing a partnership and mutual assistance agreement in the field of environment and the circular economy with specialized in these sectors universities (for example, University of Chemical Technology and Metallurgy, University of Forestry and etc.), with target Public awareness.

The envisaged partnership and mutual assistance was realized with the approval and the implementation of the project BG05M2OP001-1.002-0019-C03 Clean technologies for sustainable environment - water, waste, energy for circular economy.

#### IV.3.2. PUBLIC CAMPAIGNS

This action is adopted from the opportunities identified by the project partners as follows:

- Opportunity Lombardy22, aiming to increase the networking of Small and Medium entities. The objective is to gather the attention of small and medium realities through communication and active involvement campaigns and to create a stable regional network of them, in order to go together towards the same direction of a circular economy region. The SMEs need to understand the importance of creating network among them, necessary to create bigger opportunities together;
- Opportunity Lombardy23, related to major relevance to clusters role. The Region should greatly promote the role of the regional clusters as intermediaries among the Region







itself, the companies and universities belonging to the same sector of the cluster, in order to create projects and paths to scale-up solutions and networks together;

- Opportunity LowerSilesia17 for stimulating demand for bio products. Promotional campaigns for bio products launched to educate consumers that they can have the same or better attributes than other products, and at the same time are environmentally friendly and are produced based on natural ingredients.

The identified opportunity provided for campaigns, meetings, seminars and public discussions to raise awareness of the transition to the potential of circular economy. Within the framework of the implementation of the current project, a number of workshops and discussions were held with project team representatives taking part in each seminar, event and/or meeting, presenting both the main objectives of the project and the achieved results.

The team's approach made possible the creation of an expert, reliable and multi-directional structure for communication between representatives, teams of Sofia Municipality, state administration, NGO sector, branch organizations, waste recovery organizations, universities and scientific institutes, legal and business stakeholders involved and/or working with the area of waste management on the territory of the municipality and others.

Information about the meetings, seminars, etc. events are published in the electronic platforms of the organizers and in the respective news and events sections of the participants, the media and others platforms.

#### **IV.4. PREDEFINED OPPORTUNITIES**

In this group are summarized all identified and evaluated options for which a specific source of funding and/or initiative cannot be identified currently. Therefore, their realization is postponed until the establishment of a financial opportunity and/or a concrete interest for their realization. This group includes the following actions:

##### ***IV.4.1. SECTORAL SEPARATE COLLECTION***

This action is adopted from the good practices and opportunities identified by the project partners as follows:

- Good practice LombardyGP08 for extension of WEEE collection. The aim of the CdC RAEE Special Project is the implementation and the extension of WEEE collection, in particular including the collection of some specific equipment and receiving WEEE from distribution. These activities request analyses of technical and normative contest and meetings with distribution operators and authorities, to overcome authorization limits;
- Good practice CataloniaGP03 named HUMANA. Based in Ametlla del Vallès (Barcelona) HUMANA promotes reusing and recycling textiles by collecting used clothing from 5.000 containers throughout Spain in 2.000 municipalities. Classifies clothes at its headquarters in Atmella del Vallès (Barcelona) for reuse or recycling;
- Good practice CataloniaGP14 named REWINE. Develop a reuse system for wine bottles in Catalonia comprising: A collection network for used bottles from municipal HWRC, restaurants, food stores and wineries; A cleaning process for used wine bottles,





which will be less energy-intensive and consume less water and chemicals (thus generating less wastewater) than current techniques; and A labelling system for re-used bottles, using a water-soluble label;

- Opportunity Lombardy33, 34, 35, 36 related to reverse logistics in every sector. The idea of developing and making more efficient the logistics action from the end-of-life product collection to repair/remanufacturing/recycling of components could be widespread and applied to all the products and goods;
- Opportunity Lombardy37, 38, 39, 40 related to standardization on waste management from collection to recycling. The goal is to build common rules on waste management from collection to recycling of end of life products can help a better recover and recycling of goods;
- Opportunity Catalonia01 to increase sorting and collecting capacity of clothing and home textiles;
- Opportunity LWARB57 for circular economy metrics and tracking of progress by creation of metrics to baseline and track progress and illustrate the need for further action.

The main objective of this action is to build an effective system for separate collection of biodegradable waste in hotels and accommodation as well as in municipal hospitals. The definition, development and implementation of the system should be carried out with the direct involvement of the target sector.

The identified stakeholders are Sofia Municipality, the hotel industry and municipal hospitals.

#### ***IV.4.2. CENTERS FOR REUSE AND REPAIR***

This action is adopted from the good practices and opportunities identified by the project partners as follows:

- Good practice LombardyGP03 to preventing waste. Lombardy Region has set up the criteria for bids for the creation of centres aimed at handling and processing products before it goes to waste. This kind of bid want to enforce and spread all over regional territory centres able to collect before they become waste;
- Opportunity LowerSilesia07, related to growing demand for innovative products/services. For many years, there has been an increase in the demand for the innovative products and services in the country and in the world. The innovations implemented by the companies are one of the response to the dynamic changes taking place in the market environment.

The main goal is to build an ECO-INDUSTRIAL PARK, representing a multifunctional complex, illustrating the idea of resource efficiency and circular economy. The park will essentially be a preparation centre for re-use and recycling, but at the same time, it will be designed as a visitor centre for social and cultural events, recreation areas to attract the attention of visitors and to increase their awareness and ecological issues, with target Resource efficiency and circular economy.





The stakeholders are Sofia Municipality, residents on the territory of the municipality, as well as all legal and economic persons involved and/or working with the area of waste management on the territory of the municipality.

#### ***IV.4.3. INDUSTRIAL SYMBIOSIS***

This action is adopted from the good practices identified by the project partners as follows:

- Good practice LombardyGP23 named Progetto CORIN. CORIN was born from the idea of 5 Mantuan companies in the construction chain. Through the establishment of a Business Network, experiences and research were shared with the aim of building an integrated system for the management and recycling of materials from construction and demolition waste from the Province of Mantua. The success of the project is ensured by the participation in the network of companies operating in all the rings of the C&D waste cycle: Construction, Demolition, Collection, Specialized Transport, Selection, Treatment and Recycling, Disposal, Extraction of virgin material. CORIN's main mission is to realize, through a process capable of involving the largest number of stakeholders in the construction chain, a voluntary system of certified procedures and shared behavioural rules to replace and eliminate the need for inspections and ex-post controls by public surveillance bodies. With CORIN, therefore, affiliated companies voluntarily initiate an operating regulation that aims at ensuring at the same time the quality of the product that has to be recycled and the quality of the recycled product, through standardization (defining protocols) and monitoring of collection processes of the construction and demolition materials and the certification of outgoing products. The configured system essentially transfers the control and prevention functions to the volunteer network created by the private operators in the chain, by relieving the inspection and repressive activity of public entities responsible for the protection of the environment and health;
- Good practice LombardyGP25 named *PROTOCOLLO D'INTESA CON REGIONE LOMBARDIA PER LA PROMOZIONE DEGLI AGGREGATI RICICLATI*. ANCE Lombardy and the Lombardy Region signed the Memorandum of Understanding to carry out activities useful to improve the management of waste from construction and demolition of the products that they recovered. This is a collaboration from the important premises that refer to the European Waste Directives, the National Action Plans on Green Public Procurement, and to the Regional Waste Management Program. The need for this collaboration stems from the need to promote, at all levels and at all operators in the chain, the development of knowledge of the inert waste management processes produced by construction and demolition activities, is from the waste production phase to reuse it as new material after the treatment process in the recovery plant. It is believed that, in order to facilitate the use of recovered materials, so-called "recycled aggregates", obtained from the recovery of construction and demolition waste, it is necessary to overcome the inadequate knowledge of the potential of the recycled product, to improve existing legislation, and promote their use in public procurement. To respond to these needs ANCE Lombardy and the Lombardy Region have shared goals with the ambition to contribute to the implementation of public policies that require the development of circular economies. These objectives concern the analysis of sectorial legislation at European level and the identification of technical,





economic or cultural obstacles that do not allow the optimal use of recycled aggregates, the organization of training times (addressed to businesses, designers and public institutions), the development of a web application for the dissemination of information on recycled aggregates present on the market, the evaluation and implementation of incentive, technical, regulatory and / or economic actions for market development.

The main purpose of this action is the practical implementation of an industrial symbiosis consisting of the preparation of business models for the promotion of inter-sectoral partnerships through the creation of secondary raw material markets.

The stakeholders are Sofia Municipality, residents on the territory of the municipality, as well as all legal and economic persons involved and/or working with the area of waste management

#### ***IV.4.4. RRR CENTERS***

This action is adopted from the opportunities identified by the project partners as follows:

- Opportunity LowerSilesia07, related to growing demand for innovative products/services. For many years, there has been an increase in the demand for the innovative products and services in the country and in the world. The innovations implemented by the companies are one of the response to the dynamic changes taking place in the market environment;
- Opportunity LowerSilesia19, aiming to support start-up development which specialize in industrial biotechnology. Proposed support programs for new entrepreneurs operating in the economy sector and realizing idea of CE;
- Opportunity Gelderland04, aiming Emission Trading by smarter producing to get CO<sub>2</sub> reduction.

Design of centres for reuse, repair and preparation of waste to reuse, including provision of facilities and equipment on the territory of Sofia Municipality - Municipal - Eco Parks, through which to seek a point of intersection between the interest of the business, the municipality and the inhabitants, with target Eco Parks.

The stakeholders are Sofia Municipality, legal and economic entities involved and/or working in the area of waste management on the territory of the municipality, waste recovery organizations, etc.

#### ***IV.4.5. TRAINING CENTER***

This opportunity is adopted from the following analogous partnership initiative of the Province of Gelderland, an opportunity Gelderland04, aiming emission Trading by smarter producing to get CO<sub>2</sub> reduction.

Establishment of a centre within the Municipal enterprise for waste treatment - Sofia for training of staff for the operation of composting plants, seeking an adequate response to the growing need of such specialists in the country, with target Food waste.

The stakeholders are Sofia Municipality, universities, science centres, innovative companies, waste recovery organizations and others.





#### ***IV.4.6. ECO-INDUSTRIAL PARK***

This opportunity is adopted from the following analogous partnership initiative of the Province of Gelderland, an opportunity Gelderland04, aiming Emission Trading by smarter producing to get CO<sub>2</sub> reduction.

Building an ECO-INDUSTRIAL PARK, representing a multifunctional complex, illustrating the idea of resource efficiency and circular economy. The park will essentially be a preparation centre for re-use and recycling, but at the same time, it will be designed as a visitor centre for social and cultural events, recreation areas to attract the attention of visitors and to increase their awareness and ecological issues, with target Resource efficiency and circular economy.

The stakeholders are Sofia Municipality, legal and economic entities involved and/or working in the area of waste management on the territory of the municipality, waste recovery organizations, etc.

#### ***IV.4.7. SUSTAINABLE ECOTOURISM***

This opportunity is adopted from the following analogous partnership initiative of Lombardy region LombardyGP33 for sustainable tourism retailing commerce of food. It's a consortium linked to 320 farms now, and it covers several kind of item. Each kind of net consider an event and different forms of communications among consumers.

The main goal of the action is to promote the possibilities of maintaining composts in guesthouses as part of the sustainable ecotourism, with target Food waste.

