

Review

Integrated Municipal Waste Management in Bistrița-Năsăud County

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Abstract

The paper presents major undergoing projects in Romania and in its Northwestern Region, which are funded by the European Regional Development Fund (ERDF), within Priority Axis 2 “Development of sustainable waste management systems, by improving waste management and reducing the number of historically contaminated sites” through the Sectoral Operational Programme Environment (SOP Environment). Furthermore, there is a detailed description of the first European Commission (EC) approved, 2nd Priority Axis project in Romania entitled “Integrated solid waste management system in Bistrița-Năsăud county”.

Keywords: waste, management, Sectoral Operational Programme Environment, European Regional Development Fund (ERDF), major projects, regional landfill, sorting plant, composting plant, transfer stations

1. Introduction

Waste management is not only a national priority, but also a regional and local one and has the following reference documents:

- Sectoral Operational Programme Environment - Priority Axis 2; “Development of sustainable waste management systems, by improving waste management and reducing the number of historically contaminated sites” [1]
- National Development Plan (NDP) 2007-2013 - Priority 3; “Protection and improvement of environment quality”. [2]
- National Waste Management Plan (NWMP) [3]
- Regional Waste Management Plan (RWMP) for the Northwestern Region 6; 2007 [4]
- County Waste Management Plan (CWMP) [5]

There are projects in preparatory stage, within SOP Environment “Development of sustainable waste management systems, by improving waste management and reducing the number of historically contaminated sites”. Total budget for integrated waste management projects funded through SOP Environment is 1, 17 billion Euros, out of which 0, 93 billion Euros is European Union (EU) non refundable grant. All Priority Axis 2 major projects can benefit of maximum 80% co-financing rate from the behalf of EU, by the ERDF.

2. Major SOP Environment Priority Axis 2 projects

Major projects must prove that they have the integrated approach, which means investing in containers/bins for selective collection; in transport, sorting and composting facilities; the construction of landfills that are matching EU standards; the closure of non-compliant old landfills.

In conclusion, these major projects need the following priority investments:

- Regional landfill (generally 1 per county);

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- Sorting plant;
- Composting platform with composting containers;
- Transfer stations (3 or 4, depending on the waste quantity and the area of the county);
- Selective collection (bins, containers);
- Closure and rehabilitation of all urban dumpsites;
- Closure and rehabilitation of all rural dumpsites.

The SOP Environment project portfolio in Romania consists of about 30 major projects, which are in different phases and can be grouped as follows:

A.Projects which have already been approved for financing in 2009 - Bistrița-Năsăud – 28.04.09 - 36 million Euros

B.Projects sent for approval to the EC during year 2009 - Vrancea – 29.04.09 - 43 million Euros

C.Projects, which are in advanced preparatory phase for 2009: 18 applications to be sent - Giurgiu, Maramureș, Harghita-Covasna, Botoșani, Călărași, Olt, Vaslui, Suceava, Alba, Cluj, Sălaj, Caraș-Severin, Timiș, Arad, Mureș, Sibiu, Dolj, Neamț

D.Other projects in preparatory stage: 10 applications

As far as Romania's Treaty of Accession is concerned, these projects will be gradually completed between 2009 and 2011 and will have an important contribution to meet obligations in the waste management sector.

Major waste management projects being under preparation in the Northwestern Region are presented in Table 1[6].

Table 1. The status of Priority Axis 2 projects in the Northwestern Region

Project Data	Bistrița Năsăud county	Cluj county	Maramureș county	Sălaj county
1. Application Documents				
Master Plan	Completed	Completed	Completed	Completed
Feasibility Study	Completed	In process of completion	In process of completion	In process of completion
Investment Plan	Completed	Completed	In process of completion	Completed
Environmental Impact Assessment	Completed	Procedure stated	Not started	Not started
Financing Application sent to EC	7 th of February 2009	-	-	-
Funding Decision	28 th of April 2009	-	-	-
Financing Contract	Not approved yet	-	-	-
Project value (mil. Euros)	36	43	34	25
2. Institutional Structure				
Intercommunity Development Association (IDA)	Established in May 2008, has 63 members	In process of establishment	In process of establishment, has 73 members	In process of establishment
PIU	Has 5 employees	Has 3 employees	Has 3 employees	Has 7 employees

3.Integrated solid waste management system for Bistrița-Năsăud county

3.1. Project objectives

The general aim of the project is to implement an integrated solid waste management system in the area of the whole county, in order to meet expectations formulated in the Accession Treaty and to accomplish the objectives of SOP Environment.

Implementing the integrated solid waste management system in Bistrița-Năsăud county

follows EU legislation, NWMP, RWMP, and will meet the objectives of SOP Environment, as shown below:

- Increasing collection coverage to 100% in urban areas and to 90% in rural areas;
- Reducing the disposed waste quantity from 97.500 tons/year to 60.000 tons/year by 2016;
- Increasing recycling to 40.000 tons/year by 2016;
- Reducing the number of non compliant landfills by closing 4 urban and approximately 200 rural landfills;

- Improving disposal technology standards, as required by the acquis.

Moreover, the project will:

- strengthen the technical and managerial capability in implementing and operating the regional solid waste management of Bistrița Năsăud county;
- develop and elaborate an efficient tariff and tax strategy;
- lead to the improvement of informing the public about the benefits of the project from the point of view of selective collection and recycling waste.

3.2. General description of the project

The project entitled “Integrated solid waste management system for Bistrița Năsăud county” is the first EC approved for financing Priority Axis 2 project in our country.

The project will be implemented by the County Council and will serve the whole area of the county. Around 300.000 inhabitants will benefit of the project.

There are 4 non-compliant urban landfills in the county, at the moment, which are Bistrița, Năsăud, Sângeorz-Băi, Beclean and 200 non-compliant rural landfills. These landfills are considered non-compliant, because of the followings:

- There is inadequate waste disposal in rural areas, which lack of collection;
- There is no collection system for leachate, which leads to the pollution of soil with heavy metals and other toxic materials;
- Industrial and household waste is mixed and hazardous waste is not properly disposed.

The following investments will be materialized through the project:

- 1 integrated waste management plant, which will house:
 - ☞ 1 ecologically compliant landfill
 - ☞ 1 composting plant
 - ☞ 1 sorting line in Dumitra
- 1 transfer station in Bistrita
- 4 transfer points in Beclean, Năsăud, Sângeorz-Băi, Galații Bistriței
- 5 centers for electric and electronics waste (EEW), bulky waste and small sized hazardous waste.

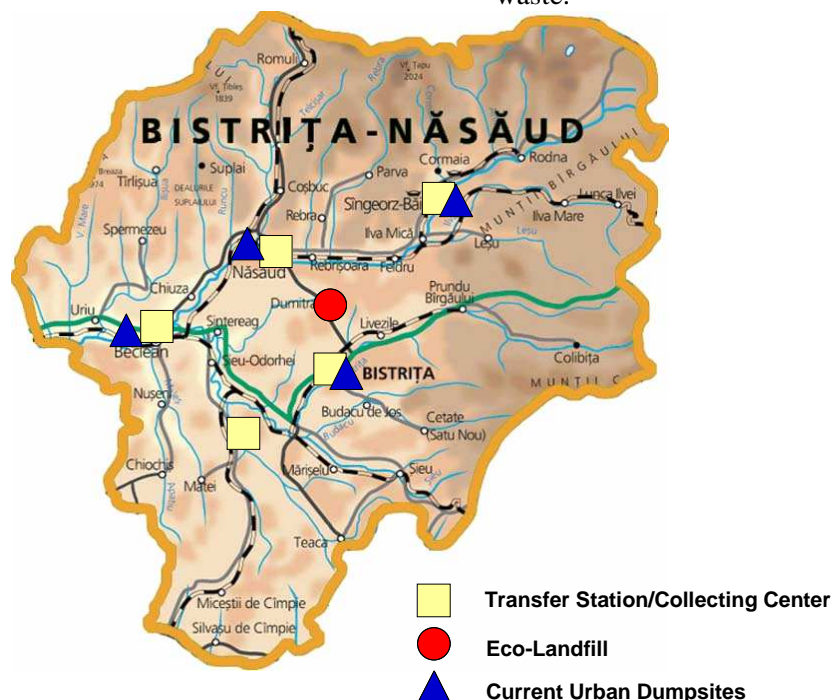


Figure 1. Investments made through Bistrița - Năsăud waste management project

The solid waste management project will be supported by a required institutional framework:

- The beneficiary will be Bistrița-Năsăud County Council, which will have the role to manage and implement the approved SOP Environment

projects by forming the Project Implementation Unit (PIU).

- IDA is established by all the implied local authorities of the county.

The project obeying community legislation, must achieve the following targets agreed upon by the Treaty of Accession:

- 100% coverage for collected mixed household waste in urban areas and 90% for the rural population, in comparison of 38% average coverage in 2006;
- Reducing the biodegradable waste quantity to 65% by 2016, in comparison with data from 1995; achieving it by 80% coverage of selective waste collection in urban areas by 2016;
- 100% coverage for collected packaging waste in urban areas, thus ensuring that by year 2013, the total rate of selling it, will be at 65%, with a total recycling of 60%.

3.3. Technical description of infrastructural works

The project consists of the under mentioned components:

- Acquisition of collecting and transportation equipment, like bins and vehicles for municipal waste originated from commerce, industry and institutions;
- Construction of five transfer stations and collecting platforms (for electric and electronics waste (EEW), bulky waste and small sized hazardous waste);
- Constructing a regional landfill equipped with biogas and levigate treatment plant, composting plant (12.000 t/year) and a sorting line (13.000 t/year). Only one cell of the landfill will be created, by this project, which will ensure 6 years time for disposal, however the overall lifespan of the waste management center will be 20 years;
- Closing and covering 3 urban landfills; sanitation/rehabilitation of one urban and 200 rural landfills;
- Steps to improve publicity, in order to reduce waste quantity and to select recyclables at the source;
- Technical assistance for project supervision.

The ecological landfill must fulfill “*The technical standards regarding waste disposal, construction, exploitation, monitoring and closing of dumpsites*”, approved by Order no. 1147/10.12.2002 - Ministry of Water and Environment Protection.

Landfill construction standards which must be met are as follows [7, 8, 9]:

- ⇒ Minimal release of contaminated matter;

- ⇒ Minimal impact on the environment;

- ⇒ Conservation and protection of the natural surroundings of the area.

The bottom of the landfill cells will be isolated against leakage by geomembrane (but at a minimum distance of 1 m above the groundwater level). Moreover, there will be installed drainage for levigate, rainwater and biogas. Also, each cell of the landfill will be surrounded by adequately constructed soil embankments. By this method, the cells will be delimited from each other from hydrological and physical point of view. After ceasing disposal, the cell will be covered by a protector layer, called geotextile, to stop rainwater seeping in and gas evacuation into the atmosphere.

- Levigate treatment plant will deal with filtering wastewater seeping out of the landfill cell.

4. Conclusions

The 30 waste management projects, which are in preparatory stage, have a cumulated value of 1, 17 billion Euros, financed through SOP Environment, will be gradually implemented between 2009 and 2011 and will have a major contribution to fulfill Romania's obligations regarding waste management included in the Accession Treaty.

The first EU funded, EC approved integrated waste management project and on National level is valued at 36 million Euros. Through this project, Bistrița-Năsăud's 200 rural and 3 urban landfills, which don't match European standards, will be closed and covered and one urban dumpsite will be rehabilitated.

An ecological landfill will be constructed; five transfer stations and collection sites in Bistrița-Năsăud county. These investments will improve accessibility to public waste collection services and will contribute to the improvement of the environment and consequently of the living standards.

References

- [1] ***, 2007 - 2013, Programul Operațional Sectorial de Mediu (POS Mediu), www.mmmediu.ro
- [2] ***, 2007 - 2013, Planul Național de Dezvoltare (PND), Prioritatea 3 – Protecția și îmbunătățirea calității mediului
- [3] ***, 2007, Planul Național de Gestionare a Deșeurilor (PNGD)

- [4] ***, 2007, Planul Regional de Gestionare a Deșeurilor (PRGD), Regiunea 6 Nord - Vest
- [5] ***, 2007, Planul Județean de Gestionare a Deșeurilor (PJGD)
- [6] ***, www.posmediucj.ro
- [7] ***, 2005, Hotărârea nr. 349 din 21 aprilie 2005 privind depozitarea deșeurilor
- [8] ***, 2000, Ordonanța de Urgență a Guvernului nr. 78/2000 privind regimul deșeurilor
- [9] ***, 2004, Normativul tehnic din 26 noiembrie 2004 privind depozitarea deșeurilor