ISPA Measure No: 2000/BG/16/P/PE/002

FINANCING MEMORANDUM

of

Agreed between the European Commission and the Republic of Bulgaria

Concerning the grant of assistance from the Instrument for Structural Policies for Pre-accession to the following measure

Set of 6 regional waste disposal sites located in Montana, Ruse, Pernik, Sevlievo, Silistra and Sozopol in Bulgaria

FINANCING MEMORANDUM
XXX

The European Commission, hereinafter referred to as "the Commission", acting for and on behalf of the European Community, hereinafter referred to as "the Community" represented by the Commissioner for Regional Policy, Mr. Michel Barnier, for the Commission

on the one part, and

The Government of Bulgaria, hereinafter referred to as "the beneficiary"

on the other part,

HAVE AGREED AS FOLLOWS:

Article 1

The measure referred to in Article 2 below shall be implemented and financed out of the budgetary resources of the Community in accordance with the provisions set out in this Memorandum. The measure referred to in Article 2 below shall be implemented in line with the General Conditions annexed to the Framework Agreement signed between the Commission and the beneficiary and supplemented by the terms of this Memorandum and the provisions annexed hereto.

Article 2

Identification of the measure

The Instrument for Structural Policies for Pre-accession shall contribute, by way of a grant, towards the financing of the following measure as described in Annex I:

Measure number:	2000/BG/16/P/PE/ 002
Title:	Set of 6 regional waste disposal sites located in Montana, Ruse, Pernik, Sevlievo, Silistra and Sozopol.
Duration:	**Start date**: The date of signature of the financing memorandum by the Commission. **End date**: Until 31 December of 2004.
Location:	Montana, Ruse, Pernik, Sevlievo, Silistra and Sozopol in the Southeast, North-central, Northwest, Southwest, Northeast of Bulgaria.
Group:	Set of six regional disposal sites.

Article 3

Commitment

1. The maximum public or equivalent expenditure which may be taken into account for the purpose of calculating assistance shall be € 60,577,513;

2. The rate of Community assistance granted to the measure is fixed at 75 % of total public or equivalent expenditure as indicated in the financing plan in Annex II;

3. The maximum amount of assistance from the Instrument for Structural Policies for Pre-accession is fixed at € 45,433,135;

4. An amount of € 36,346,508 is committed from the 2000 budget under budgetary line B7-020. Commitments in respect of subsequent instalments shall be based on the initial or revised financing plan for the measure, subject to the state of implementation of the measure and to budgetary availability.

Article 4

Payments

1. Community assistance shall cover payments on the measure for which legally binding commitments have been made by the beneficiary and for which the requisite finance has been specifically allocated. These payments must relate to the works described in Annex I.

2. Payments made before the date of signature of the financing memorandum by the Commission shall not be eligible for assistance from the Instrument for Structural Policies for Pre-accession.

3. The measure described in Annex I and payments by the body responsible for the implementation of the measure shall be completed no later than 31 December 2004.

   The report required for the payment of the final balance should be submitted not later than 6 months after this date.

4. The advance payment is fixed at € 9,086,627 which shall be transferred as follows:

   – An amount of € 4,543,314 is paid out after signature of this memorandum by the beneficiary;

   – The remainder is paid out after signature of the first substantial works contract to be agreed between the beneficiary and the Commission after submission of the procurement plan as specified in Article 8 (3) hereunder.

5. In accordance with Annex III. 1, Section III, point 5, the Commission will accept for this measure a total amount of advance and intermediate payments of 90 % of the total assistance granted.

Article 5

Respect of Community law and policies

The measure shall be carried out in compliance with the relevant provisions set out in the Europe Agreements and shall contribute to the achievement of Community policies, in particular those concerning environmental protection and improvement.

Article 6

Intellectual property

The Beneficiary and the authority responsible for implementation mentioned in Annex I point 3 shall ensure that they acquire all necessary intellectual property rights to studies, drawings, plans, publicity and other material made in conjunction with planning, implementation, monitoring and evaluation of the project. They shall guarantee that the Commission, or any body or person delegated by the Commission shall have access and the right to use such material. The Commission will only use such material for its own purpose.

Article 7

Permits and authorisations

Any type of permits and or authorisations required for the implementation of the measure must be provided by the competent authorities of the Beneficiary in due time and in accordance with national law.

Article 8

Specific conditions related to the measure

Without prejudice to the general provisions specified in Annex III the Community grant for the measure is subject to the following conditions:

1. Condition on the assumptions and the status of the assets:

   The Commission reserves the right to revise the amount of the assistance for ISPA set out in Article 3 if, within five years of the date of the completion of works, the operating conditions (tariffs, revenues, etc.) vary significantly relative to the original assumptions made in determining the level of the grant and/or there is a substantial modification:

   a) affecting the nature of the operation or its implementing conditions, or giving to a private or public body an undue advantage; and

   b) resulting either from a change in the nature of the ownership of any part of the financed infrastructure, or a cessation or material change in the operating arrangements.

   The beneficiary country shall inform the Commission of any such change, and shall seek the ex-ante agreement of the Commission to these changes.

2. Condition on viability:

   The Community grant for the measure is subject to the authorities concerned making available sufficient resources in order to ensure the effective operation and maintenance of the assets.

3. Conditions relating to the second instalment of the advance payment:

   The second instalment of the advance payment shall be subject to:

   (a) confirmation from the competent environmental authorities that hazardous waste will not be disposed of or treated with non-hazardous waste in the landfills concerned.

   (b) the presentation of a statement from the competent environmental authorities that inert waste will not be disposed of together with non-hazardous waste in the landfills concerned.

   (c) evidence being provided that, as a general rule, the cost of treatment of hazardous waste is supported by the industries concerned;

   (d) the presentation of a statement from the competent environmental authorities that they have been consulted on the Environmental Impact Assessments carried out for each of the projects.

   (e) the presentation of a final procurement plan, which has to be agreed by the Commission.

   (f) the appointment of a Supervisor through an international tender for supervision of the implementation of the six projects included in the measure.

   (g) the presentation of feasibility studies for each of the regions concerned by the measure. The feasibility studies shall include technical, institutional and financial aspects. The technical studies shall cover the remedial action on the identified existing dump sites and a waste handling system for each region. The investment required to implement the proposals suggested by the conclusions of these studies may be presented for EC financing in order to fulfill the overall waste management objectives of the regions concerned by the measure. The costs of these studies and any suggested actions resulting therefrom are not included in the cost of the present measure and may be the subject of additional financing proposals".

Article 10

The authentic text of this financing memorandum is the present document as signed hereunder.

Done at

Done at Brussels, 18. 12. 2000

For the recipient

National Authorising Officer

Evg. Chachev

For the Community

Mr M. Barnier
Commissioner

Michel BARNIER

List of Annexes

ooOOOoo

ANNEX 1

Description of measure
(summary)

Commission code No: 2000/BG/16/P/PE/002

1. MEASURE TITLE

Set of 6 regional waste disposal sites located in Montana, Ruse, Pernik, Sevlievo, Silistra and Sozopol.

2. AUTHORITY MAKING THE APPLICATION (National ISPA Co-ordinator)

2.1. Name: Ministry of Regional Development and Public Works - Ispa Task Force

2.2. Address: 6 Sveta Nedelja Sq., Sofia 1000, Bulgaria

E-mail: pharecbc@mail.bol.bg

3. AUTHORITY RESPONSIBLE FOR IMPLEMENTATION (as defined at Section II (2) of Annex III.2)

3.1. Name: Ministry of Environment and Water

3.2. Address: 67 William Gladstone St., Sofia 1000, Bulgaria

3.3 E-mail: marianasir@moew.govrn.bg

4. FINAL BENEFICIARY (in case it is a different body from the authority mentioned under 3)

4.1 Name: Municipality of Montana

Address: 1 Izvora St., Montana 3400, Bulgaria

4.2 Name: Municipality of Ruse

Address: 6 Svoboda Sq., Ruse 7000, Bulgaria

4.3 Name: Municipality of Pernik

Address: 1 St. Ivan Rilski Sq., Pernik 2300, Bulgaria

4.4 Name: Municipality of Sevlievo

Address: 17 Svoboda Sq., Sevlievo 5400, Bulgaria

4.5 Name: Municipality of Silistra

Address: 33 Simeon Veliki St., Silistra 7500, Bulgaria

4.6 Name: Municipality of Sozopol

Address: 36 Apolonia St, Sozopol 8110, Bulgaria

5. LOCATION

5.1. Beneficiary country: Bulgaria

5.2. Region: Southeast, North-central, Northwest, Southwest, Northeast.

6. THE MEASURE[1]

6.1 Background of the Measure

The measure implements one of eight axes of the National Waste Management Programme (NWMP) elaborated in March 1998 by the Bulgarian authorities. The Programme contains an action plan covering legislative, institutional and investment measures. The plan identifies performance objectives, responsible institutions and potential sources of financing – national and international (EU instruments, international financial instruments, bilateral agreements with Member States, etc.). The Programme is estimated to cost 678 billion Bulgarian Lev (BGL) coming from the State budget, the National Environment Protection Fund, and in certain cases the municipalities and external sources. The Programme is inspired by the following basic principles:

1) Clean and healthy environment;

2) Rational use of the available resources;

3) Integrated waste management;

4) Full responsibility of the polluters;

5) Public participation.

The Bulgarian authorities have elaborated this programme in order to achieve the following main objectives**:**

1) Prevention and reduction of generated waste;

2) Reuse and recycling;

3) The organization of waste collection and transportation;

4) Environmentally-friendly disposal of waste;

5) Minimization of the risk from past pollution with waste;

6) Legal regulation of waste management ;

7) Public participation;

[1] In this document, Measure is defined as the group of six projects as a whole.

8) Improving monitoring systems and information collection and control.

In particular, the measure refers to action 3.4.1 entitled "Building up and reconstruction of 37 regional landfills for disposal of "Environmentally friendly waste disposal" action . This action is intended to be implemented mainly in the period 1999 - 2002.

The measure is an essential part of the Bulgarian ISPA Environment strategy Moreover, it is highly ranked in the priority investment list decided by the Bulgarian Council for Regional Development in June 2000.

The measure relates to the "Environment-friendly waste disposal" objective which is one of the priority objectives of the National Waste Management Programme whose principles are in line with the priorities of the Accession Partnership 1999 and the National Programme for the Adoption of the Acquis 2000. The above cited priority requires that the existing waste management installations and equipment will have to comply with the requirements of the relevant legislation and those presenting risks to the environment and human health to terminate their operation .

The relevant EC legislation on solid waste management is in the process of being transposed into Bulgarian legislation.

The proposed measure will be part of an integrated network of facilities for waste disposal as required by the EC Framework Directive on Waste 75/442 amended by EC Directive 91/556.

6.2 Overview

The measure is consistent with the Municipal Waste Management Plans, approved by the relevant Municipal Councils and the Regional Environment and Water Inspectorates under the umbrella of the Ministry of Environment and Water.

The implementation of the measure, combined with additional administrative and institutional measures, is part of Bulgaria's long-term waste management strategy, which aims at waste minimisation, significant increase of recycling, and the reuse of waste.

The construction of the waste disposal sites is in accordance with the policy for waste management which requires to reduce the total number of the solid waste disposal sites from nearly 700 down to about 50 new sites. These sites will meet the standards in compliance with the requirements of the EC Directives in the field.

As a result of the waste stream redirection to the new sites, several old disposal sites are envisaged to be closed in the target areas. In particular, the measure will determine the closure of the following old disposal sites:

– Montana - 22 sites to be closed;

– Pernik – 17 sites to be closed;

– Ruse – 15 sites to be closed;

– Sevlievo – 16 sites to be closed;

– Silistra – 35 sites to be closed;

– Sozopol – 8 sites to be closed.

The entire project will then result in the opening of six new regional landfills and the closure of 113 old disposal sites.

Concerning the investment planning in the target areas, the municipality of Ruse has prepared an action plan for the period 1998-2015 including short term investments as part of the Municipal Waste Management Plan. The programme includes short-term (1998 to 2001),

medium term (2001 to 2010) and long term (2010 to 2015) activities including waste management, information system, legislation, control of waste, reduction, collection and transportation of waste, reuse and recycling of waste, treatment of municipal and hazardous waste, reducing the risk of past environmental damages, public participation.

The municipality of Silistra has prepared a four-year master plan for investment in the sector including short and medium term activities : waste management, information system, legislation, control of waste, reduction, collection and transportation of waste, reuse and recycling of waste, treatment of municipal and hazardous waste, reducing the risk of past environmental damages, public participation.

The municipalities of Montana, Pernik, Sevlievo and Sozopol have prepared municipal waste management plans with specific priorities; these plans do not, at present, include the required investments for their achievement and these municipalities are in the process of preparing sector investment plans.

Finally, Bulgaria has signed the Convention on Co-operation for the Protection and Sustainable Use of the Danube River (Sofia, 1994) and the Convention on the Protection of the Black Sea Against Pollution, ratified on 26.11.1992.

From this point of view, the measure is likely to have a positive Trans-border impact. For Ruse and Silistra, given the proximity of the Danube River, the new landfills will reduce the risk of leachate entering the river course. For Sozopol, given the proximity of the Black Sea, the new landfill will reduce the risk of leachate entering the sea.

6.3 Overall description of the measure

The measure comprises a group of 6 projects in the area of the following municipalities: Montana, Ruse, Pernik, Sevlievo, Silistra and Sozopol located in the Southeast, North-central, Northwest, Southwest and Northeast of Bulgaria (see the attached Annex I.b).

Four new regional landfills (Montana, Pernik, Sevlievo and Silistra) will be located at the existing sites, whereas the new landfills for Ruse and Sozopol will be built up at new sites.

In Sevlievo and Ruse separate disposal cells for hazardous waste are included and these new sites will provide the capacities for disposal and storage of hazardous, construction and production wastes, which are currently unavailable for these target areas.

The total population served by the new 6 regional landfills is estimated at 567,000 and the municipal waste volume is some 714,554 m3 for the year 2000. The life span for the new sites varies between 20 and 25 years.

Site	Population served	Area (ha)	Landfill capacity (000 m^3)	Life span (years)
Montana	67 000	8.7	950	25
Pernik	120 000	12	1560	25
Ruse	216 000	26,6 + 2,6**	2337	22/17
Sevlievo	38 000	6,7 + 1,3**	852	20/17*
Silistra	78 000	8	1223	25
Sozopol	48 000	9.7	1323	25
Total	567 000			

* This figure relates to the life of hazardous waste cells.

** This figure relates to the area covered by the hazardous waste cells.

Within the territory of the target areas, there are at present no landfills that comply with EC legal provisions. Therefore, the Municipalities are obliged according to the Bulgaria Regulation No.13/06.11.1998 on the conditions and requirements towards the construction and

operation of waste landfills (State Gazette No.152/1998), to find new solutions for the management of waste.

The measure will include the following components:

– External connections including power and water supply, pipeline for leachate discharge to the municipal sewerage system, access roads;

– Buildings and facilities at the front area including local Wastewater Treatment Plant (WWTP) - except for Sevlievo and Ruse;

– Cells including surrounding and partition dikes, bottom watertight sealing and drainage system for collection and discharge of leachate, gas wells and pipelines;

– Operation equipment;

– Monitoring system including wells for monitoring of ground water - outside the landfill and around the bio-gas purification and burning plant.

6.4 The individual projects

The following six projects are included in the measure. At the end of the description of each project is presented a list of the main indicators which will be used to monitor the physical progress of each project.

I. Montana landfill

The total area of the site (8.7 ha) is selected in an area that belongs to the Municipality. The site is designated for disposal of municipal, construction and industrial waste, and is situated about 8 km south-east from the Municipality. It is envisaged that it will host waste from Montana and 22 surrounding villages. The existing site of **Montana** is near depletion of its capacity.

The project comprises the following elements:

– External communications and services – access roads, water supply, power supply, drainage of leachate from WWTP to Montana sewerage and drainage of storm water to Shugla River;

– 5 cells including surrounding and partition dikes with road and fence, control drainage, bottom watertight seal and drainage system for leachate collection, gas pipeline in the surrounding dike;

– Front area including office, traffic control building, weigh bridges; garage with repair room and store, car wash; emergency generator plant; station for purification and burning of bio-gas;

– Wells for monitoring and control of ground waters - 3 outside the landfill and 3 around the station for purification and burning of bio-gas;

– Machinery and equipment including a bulldozer (front-end loader) for spreading and flattening the loose wastes, for applying the daily soil cover; a compactor for compacting the waste to threefold compaction, a dump-truck for transporting earth and other loose materials.

Physical Indicator	**Unit value** **(eg m^3, l.m., n^o)**	**Volume**

Pavement of access road	M²	7,800
Pipeline to sewerage	M	5,600
Office Civil construction works	M³	945
Drainage layer 0.3 m gravel	M³	21,420
Reinforced concrete retaining wall	M	883
Laying of 2 mm HDPE liner	M²	96,462
Laying of surrounding HDPE[2] pipe DN110 gas pipeline	M	1,230

II. Pernik landfill

The existing landfill used by the Pernik Municipality accounts for some 5 ha and hosts municipal and construction waste. The area for the proposed municipal waste landfill is 12 ha. The site is located North-east of the town of Pernik, some 4 km from the centre of the town in the vicinity of Teva District. The proposed landfill is designed to receive municipal and industrial waste generated on the territory of the municipality.

The project comprises the following elements:

– External communications – access roads, water and power supply, drainage of leachate from WWTP to Pernik sewerage system;

– 5 cells including surrounding and partition dikes with road and fence, control drainage, bottom watertight seal and drainage system for leachate collection, gas pipeline in the surrounding dike;

– Front area including office, traffic control building, weigh bridges; garage with repair room and store, car wash; emergency generator plant; station for purification and burning of bio- gas; a local WWTP;

– Wells for monitoring and control of ground waters - 8 outside the landfill and 2 in the waste cells;

– Machinery and equipment including: a bulldozer (front-end loader) for spreading and flattening the loose wastes, for applying the daily soil cover; a compactor for compacting the waste to threefold compaction, a dump-truck for transporting earth and other loose materials; computer.

[2] HDPE stands for High Density Polyethylene.

Physical Indicator	Unit value (eg m^3, l.m., n^o)	Volume
Pipeline to sewerage	M	2,120
Office Civil construction works	m^3	945
Drainage layer 0.3 m gravel	m^3	32,735
Reinforced concrete retaining wall	M	1,570
Laying of 2 mm HDPE liner	m^2	120,016
Laying of surrounding HDPE pipe DN110 gas pipeline	M	600

III. Sevlievo landfill

The designated site of the new landfill for municipal, construction and industrial waste plus a cell (includes 54 containers) for hazardous waste is located in the Cherakliiskoto region, about 4 km from the town of Sevlievo, next to the existing landfill. The existing landfill site is spread over an area of approximately 3.1 ha. An additional area of 8 ha is designated for the new landfill, with 6.7 ha are allocated to municipal, construction and industrial waste, while 1.3ha allocated to hazardous waste. The site designated for hazardous waste is adjacent to the newly proposed landfill and somewhat lower in elevation; thus providing a natural watershed between hazardous and non-hazardous cells. The proposed landfill will receive waste from the town of Sevlievo and municipal waste from nine settlements located in the vicinity.

The following elements will be covered by the project:

– Cells for municipal solid waste (3) and 1 cell for hazardous waste including 54 containers;

– Top cover layer for the existing site and monitoring wells for ground waters;

– Machinery and equipment including:

a) For municipal waste: compactor, dump-truck, excavator, bulldozer;

b) For hazardous waste: truck with sideboom, multilift vehicle.

The Municipality of Sevlievo has initiated construction of the following elements, which are not included in the scope of this measure:

– Front area and facilities including administrative building, garage and shelter for equipment, weigh-bridge, car-wash, disinfection pit, site water supply and sewage, tower transformer 20/0.4 kV and a power supply feeding line;

– Fence;

– Maintenance roads;

– 4 containers for hazardous waste (included in the 54 cited above).

Physical Indicator	Unit value (eg m^3, l.m., n^o)	Volume
Excavation for pipeline to the town sewerage	m^3	6,145
Laying of 2 mm HDPE liner in cells for municipal waste	m^2	57,660
Drainage layer, gravel 16/32 mm, d=0.5 m in cells for municipal waste	m^3	28,830

Laying of 2.5 mm HDPE liner in cells for hazardous waste	m²	24,000
Laying of 2 mm HDPE liner for re-cultivation of existing landfill	m²	24,650

IV. Silistra landfill

The site is located south-east of the town of Silistra, some 8 km from the center of the town. The existing landfill is to the North of the Silistra-Dobrich Road, Northwest of the Stracimir Hamlet, and south of the border between Bulgaria and Romania. The local region is known as "Arnaudchair". The existing landfill currently used by Silistra municipality covers an area of 4,6ha, whereas the site designated for the proposed extension covers an area of 8 ha. The new site is designated to host municipal, construction and industrial waste.

The project comprises the following elements:

– External communications – access roads, water supply, power supply, drainage of leachate from WWTP to Silistra sewerage system.

– 5 cells including surrounding and partition dikes with road and fence, control drainage, bottom watertight seal and drainage system for leachate collection, gas pipeline in the surrounding dike

– Front area including office, traffic control building, weigh bridges; garage with repair room and store, car wash; emergency generator plant; station for purification and burning of bio gas; a local WWTP;

– Wells for monitoring and control of ground waters - 4 outside the landfill and 6 in the waste cells;

– Machinery and equipment including: a bulldozer (front-end loader) for spreading and flattening the loose wastes, for applying the daily soil cover; a compactor for compacting the waste to threefold compaction, a dump-truck for transporting earth and other loose materials; computer.

Physical Indicator	**Unit value (eg m^3, l.m., n^o)**	**Volume**
Pipeline to sewerage	M	6,560
Office Civil construction works	m³	945
Drainage layer 0.5 m gravel	m³	21,012
Reinforced concrete retaining wall	M	2,090
Laying of 2 mm HDPE liner	m²	129,294
Laying of surrounding HDPE pipe DN110 gas pipeline	M	1,000

V. Sozopol landfill and Waste Transfer Station

A site with a total area of 9,7 ha has been selected on the territory belonging to the village of Ravadinovo in the "Choplaka" locality. The site, designed for disposal of municipal waste is situated about 8 km south-west from the town of Sozopol. It will serve the Sozopol, Primorsko and Tzarevo Municipalities. The project comprises a regional landfill and a Waste Transfer Station (WTS).

The construction of the new landfill will include:

– External communications – access roads, water supply, power supply, drainage of leachate from WWTP to Sozopol sewerage system;

– 5 cells including surrounding and partition dikes with road and fence, control drainage, bottom watertight seal and drainage system for leachate collection, gas pipeline in the surrounding dike;

– Front area including office, traffic control building, weigh bridges; garage with repair room and store, car wash; emergency generator plant; station for purification and burning of bio-gas;

– Wells for monitoring and control of ground waters - 3 outside the landfill and 3 around the station for purification and burning of bio-gas;

– Machinery and equipment including a bulldozer (front-end loader) for spreading and flattening the loose wastes, for applying the daily soil cover, a compactor: for compacting the waste to threefold compaction, a dump-truck for transporting earth and other loose materials; computer.

The second element of this project, the Waste Transfer Station, will be built since two of the municipalities served, Tzarevo and Primorsko, are located at a distance of 60 km from the landfill. This station shall be constructed on the territory of Tzarevo Municipality, in the area of the existing waste depositing site of the Kiten Village. The site selected for the WTS has a total area of 0.7 ha and belongs to the Tzarevo Municipality.

The following equipment will be installed in the building of the WTS:

– Press for waste – type KTK - MP 6080 (extended to 4 rollingpads);

– Ten press containers with exhaust gas heating (W = 1500 mm; H = 2300 mm, L = 6000 mm internal dimensions);

– Two trucks with trailing wagons: 25 ton, 4 axis, exhaust gas modification for container heating, equipped with hook loading system 6300 mm, KTK 20 tons capacity;

– Shovel loader – wheel machine with shovel volume 1.5 m^3 and width not more than 2200 mm;

The vehicles transporting the waste from the population are brought up through ramp in the transfer station. They unload the solid municipal waste on a concrete site, located over the press and are brought down. The waste is dumped into the press funnel and is pressed directly into the containers (volume 30 m^3). Special vehicles transport the filled containers to the landfill for Sozopol, Primorsko and Tsarevo.

Physical Indicator	**Unit value (eg m^3, l.m., n^o)**	**Volume**
Construction of new access road	m³	14,670
Pipeline to sewerage	M	3,320
Office Civil construction works	m³	945
Drainage layer 0.3 m gravel	M³	26,685
Reinforced concrete retaining wall	M	1,004
Laying of 2 mm HDPE liner	M²	88,950
Laying of surrounding HDPE pipe DN110 gas pipeline	M	1,240

VI. Ruse landfill

Ruse is one of the major cities in the North-east of Bulgaria, located on the south bank of the Danube River. The construction site for the solid waste landfill is about 2.5 km east of the last block of the Iztok residential area, and about 2.5km west of Nikolovo Village. The new landfill will be used for disposal of municipal, industrial and construction waste. There will be also a section for hazardous waste.

The present project includes the following elements:

- Front area and facilities;
- Technical water tank and drilling well;
- Vehicle wash;
- Wash yard for containers;
- Oil / Sludge separator;
- Leachate tank and pumping station;
- Disinfection pit;
- Guard house and administrative building;
- Auxiliary building;
- Garage and Workshop;
- Cells for municipal and industrial waste;
- A gas extraction system shall be constructed for the abstraction of the bio-gas from the landfill;
- Cells for construction waste - 3 cells with similar structures and installations on the bottom as in the item above but without gas extraction wells;
- Cells for hazardous waste - 2 buildings with underground concrete structures;
- Monitoring system - equipment for monitoring of atmosphere parameters, for other sampling and testing and installation of piezometers;
- 8 wells for monitoring of ground water;
- Machinery and equipment including compactor, bulldozer, excavator, dump-truck.

The Municipality of Ruse has initiated the construction of the following elements, which will not be included in the project:

- Access road – rehabilitation and widening;
- Telephone lines;
- Overhead power supply line and a transformer 20/0.4 kV;
- Water supply and sewage utilities;
- Technical water pipelines;
- Outdoor lighting;
- Surrounding fence and windbreak of trees;
- Inside service ring road;
- Channels for diversion of surface water.

Physical Indicator	**Unit value (eg m^3, l.m., n^o)**	**Volume**
Laying of 2.5 mm HDPE liner in cells for municipal waste	M²	182,400
Drainage layer, gravel 16/32 mm, d=0.5 m in cells for municipal waste	m³	43,700
Gas abstraction well	Nos.	20
Laying of 2.5 mm HDPE liner in cells for construction waste	m²	21,500
Laying of 2.5 mm HDPE liner in cells for hazardous waste	m²	3,310
Monitoring wells	Nos.	8

7. OBJECTIVES

The main objective of the measure is to achieve solid waste management in full compliance with EC and Bulgarian Regulations and thus avoid potential environmental damage from landfills.

The measure will meet the requirements of the following EC Directives:

1. Framework Directive on Waste 75/442 amended by EC Directive 91/556;

2. EC Directive on Hazardous Waste 91/689;

3. EC Directive on Landfill of waste 1999/31.

The measure will, in this way, serve to reverse the general tendency in Bulgaria to carry out waste disposal without dedicating strong attention to the environmental impact.

In the municipalities included in this measure, the capacity of the existing waste disposal sites will soon become totally exhausted.

The measure will achieve the following objectives:

– close some of the oldest and polluted disposal sites;

– allow the restoration of the areas occupied by the old disposal sites;

– build new regional landfills which will serve more extended areas with considerable advantages in terms of scale economies;

– build new landfills meeting the EC technical requirements;

– improve the state of the environment in the target areas;

– improve the human health of the population living in the target areas served by the new disposal sites;

– diminish the pollution into the Danube river given the new disposal sites to be constructed at Ruse and Silistra, and into the Black sea basin due to the new disposal site which will be constructed in Sozopol;

– improve the organisation and efficiency of the part of the Bulgarian solid waste disposal network;

– improve the monitoring and control of the solid waste disposal network in the target areas.

8. WORK SCHEDULE

MONTANA	**Start date**	**Completion date**
Feasibility study:	06/1999	08/1999
Financial analysis:	01/06/2000	25/06/2000
EIA	10/01/2000	26/02/2000
Design studies:	22/11/1999	26/02/2000
Tender documents:	22/11/1999	30/06/2000
Land acquisition:		26/04/1999
Construction:	Year 2001	Year 2003
PERNIK	**Start date**	**Completion date**
Feasibility study:	07/1999	10/1999
Financial analysis:	01/06/2000	25/06/2000
EIA	01/03/2000	27/04/2000
Design studies:	22/11/1999	26/02/2000
Tender documents:	22/11/1999	30/06/2000
Land acquisition:		09/09/1999
Construction:	Year 2001	Year 2003
RUSE	**Start date**	**Completion date**
Feasibility study:	10/01/1999	20/03/1999
Financial analysis:	01/06/2000	25/06/2000
EIA	12/03/2000	24/05/2000
Design studies:	05/04/1999	11/01/2000

Tender documents:	20/03/2000	30/07/2000
Land acquisition:		21/12/1998
Construction:	Year 2001	Year 2003
SEVLIEVO	**Start date**	**Completion date**
Feasibility study:	05.05.1997	02.08.1997
Financial analysis:	01.06.2000	25/06/2000
EIA	10/02/1999	20/03/2000
Design studies:	06/01/1999	10/02/1999
Tender documents:	20/03/2000	30/07/2000
Land acquisition:		10/02/2000
Construction:	Year 2001	Year 2003
SILISTRA	**Start date**	**Completion date**
Feasibility study:	02/09/1998	30/10/1998
Financial analysis:	01/06/2000	25/06/2000
EIA	01/04/2000	20/05/2000
Design studies:	22/11/1999	26/02/2000
Tender documents:	22/11/1999	30/06/2000
Land acquisition:		12/05/1999
Construction:	Year 2001	Year 2003

SOZOPOL	**Start date**	**Completion date**
Feasibility study:	03/09/1999	25/11/2000
Financial analysis:	01/06/2000	25/06/2000
EIA	02/03/2000	30/04/2000
Design studies:	22/11/1999	26/02/2000
Tender documents:	22/11/1999	30/06/2000
Land acquisition:		03/04/1999
Construction:	Year 2001	Year 2003

9. ECONOMIC AND SOCIAL COST-BENEFIT ANALYSIS

A standard cost-benefit analysis has not been undertaken in this case as there is no generally agreed methodology for estimating social and environmental benefits of waste disposal facilities. Given the need to comply with EC standards, a practical alternative to cost-benefit analysis is cost-effectiveness analysis. Cost effectiveness is the ratio between physical results and costs in money terms incurred in getting these results.

A cost-effectiveness analysis has been carried out for the six non-hazardous and two hazardous landfills the results of which are presented below:

	Costs (EURO/Year)	**Waste Quantity (m3/Year)**	**Costs (EURO/m3/Year)**
Non-Hazardous			
Montana	1,008,192	138,112	7.3
Pernik	1,113,728	207,039	5.4
Rousse	1,272,605	465,333	2.7
Sevlievo	299,705	63,540	4.7
Silistra	1,148,661	147,029	7.8
Sozopol	1,266,730	80,222	15.8
Hazardous			
Rousse	32,587	1,137	28,7
Sevlievo	144,525	2,143	67.5

The costs (€/m^3/Year) depicted in the right-hand column have been calculated by dividing the costs (€/Year) by the waste quantity (m^3/Year). Costs, in this instance, include capital costs, variable and fixed costs averaged over the life of the landfills.

Unit costs for the six non-hazardous landfills, with the exception of Sozopol, are rather similar, ranging between 2.7 and 7.8 EURO/ € /m^3/Year. The higher figure for Sozopol is explained by the relatively lower quantities of waste forecast and inclusion of the Waste transfer station.

Although the benefits of this measure are difficult to quantify, the proposed environmental and social benefits are considerable and will include the following:

- there will be significant improvements to the local state of environment and human health by reducing the environmental pollution from solid (and hazardous) waste.
- improved waste disposal infrastructure in the areas assisted by the projects will contribute to increased competitiveness through the reduction of local firms' production costs and business constraints, attract external business interests into the areas, and ultimately, contribute to generation of employment opportunities.
- there will be a reduction in the pollution of groundwater and soils, as well limiting the potential damage to bio-diversity in the project areas.
- the projects will help Bulgaria to meet the criteria for accession into the EU, meeting EC Regulations on environmental standards, and ultimately having a positive impact on macroeconomic growth;
- local economies will benefit from procurement of construction materials and from personnel employed during the construction and operation phase.
- additional income generated by job creation and procurement will have positive down-stream benefits via indirect employment and increased expenditure on goods and services.
- there will be some negative effects incurred during construction due to loss of land, negative impacts on landscape and wildlife and other infrastructures.

10. MAIN ELEMENTS OF FINANCIAL ANALYSIS

Cash flow statements for the hazardous and non-hazardous landfills have been produced under the two different scenarios (scenario 1: 0% profit margin; scenario 2: 10% margin).

The net present value (NPV) for each landfill under Scenario 1 and Scenario 2 are presented below:

	NPV* (EURO) Scenario 1		**NPV* (EURO) Scenario 2**	
	Without ISPA	**With ISPA**	**Without ISPA**	**With ISPA**
Non-Hazardous				
Montana	-4,889,230	2,997,471	-3,814,762	4,182,071
Pernik	-5,348,981	-65,357	-7,411,223	611,789
Rousse	-5,891,268	4,114,606	-4,555,880	5,586,872
Sevlievo	-3,302,523	851,050	-2,699,874	1,515,470
Silistra	-5,621,505	3,734,562	-4,374,379	5,109,518
Sozopol	-9,980,259	173,983	-8,970,553	1,287,184
Hazardous				
Rousse	-212,767	304,125	-131,499	393,722
Sevlievo	-1,194,793	621,934	-958,907	1,032,434

** The discount rate applied is 5 % .*

In the case of NPV, under both Scenario 1 and 2 (with the exception of Pernik) the net values are negative without ISPA funding.

The financial analysis of the landfills in Montana, Pernik, Rousse, Sevlievo, Silistra and Sozopol, indicates that a combination of ISPA funding and revenues generated from waste charges will ensure their financial sustainability. Without ISPA grants the projects could not be undertaken.

While the projects are not financially viable from a purely commercial perspective, their contribution to improvements in the state of environment, health and living standards, are likely to be significant.

Finally, quite apart from generating revenues, the use of charges will ensure the projects are consistent with EC Regulations in as far as the "polluter pays" principle is respected.

The proposed waste charges as a percentage of per capita income during the life time of the landfills vary between 0.21% and 0.97%.

Affordability rates for Montana, Pernik, Ruse, Silistra and Sozopol, under the two different scenarios, are summarised below:

	Scenario 1	**Scenario 2**
	Affordab. (%)	**Affordab. (%)**
Non-Hazardous		
Montana	0.55	0.60
Pernik	0.35	0.38
Ruse	0.21	0.23
Sevlievo	0.76	0.83
Silistra	0.60	0.66
Sozopol	0.88	0.97

Affordability rates are calculated by multiplying waste charges by the average norm of accumulation (1.5 m^3 / person / year) and dividing this amount by per capita income per annum (1800 €). While the waste charges form only a component of the total charges paid for public services, the landfills under both Scenario 1 and Scenario 2 would seem to be affordable.

11. ENVIRONMENTAL IMPACT ANALYSIS

The global assessment of the project from the environmental point of view shows that it will contribute significantly to the improvement of overall solid waste management in Bulgaria.

The Bulgarian policy for waste management is aimed at reducing the total number of disposal sites from nearly 700 old sites down to about 50 new sites. The new sites will fully meet the standards of the EC Directives in the field. In line with this aim, the measure proposed for ISPA financing will help reduce the number of landfills from 113 old disposal sites to 6 regional new sites. This will also ensure that this part of the Bulgarian landfill network will be better organised and more controllable in the target areas.

The Environmental Impact Assessments have been carried out in line with the principles of EC Directive 85/337 as amended by 97/11.

For Pernik, Montana, Silistra and Sozopol, the waste concerned covers municipal, construction and industrial waste. Therefore, Annexe II of EC Directive 85/337 applies. The EIAs have been carried out for each project including public consultations and the main recommendations have been taken into account.

For Sevlievo and Ruse, the landfills are subject to Annex I of EC Directive 85/337 as hazardous waste will be deposited in these sites. The EIAs have been carried out including public consultations and the main recommendations have been taken into account.

The new landfills included in the measure will meet the basic technical standards of the Directive, in particular the EC Framework Directive on Waste 75/442 as amended by EC Directive 91/556, the EC Directive on Landfill of waste 1999/31, and the EC Directive on Hazardous Waste 91/689.

There will also be a significant improvement concerning emissions to the atmosphere for the sites where the bio-gas is collected and either burned or flared. The proposed systems for purification and burning of bio-gas shall reduce the methane gas emissions in the atmosphere, and this will be in compliance with the Bulgarian policy regarding global climate changes.

The measure will have at the same time preventive and curative effects: preventive because its primary objective will be to prevent environmental damage from the landfills; curative because it will involve the closure and the restoration of the old disposal sites.

The measure is likely to have positive Trans-border impact. In particular, for Ruse and Silistra, given the proximity of the Danube River, the landfills will reduce the risk of leachate entering the river course. For Sozopol, given the proximity of the Black Sea, the new landfill will reduce the risk of leachate entering the sea.

In accordance with Article 11 in Article 15 EC Framework Directive on Waste 75/442 as amended by EC Directive 91/556 and Article 130r Treaty EC, the "polluter pays" principle of cost recovery will be respected as the measure operating and maintenance costs will be covered by tariffs charged to the waste generators.

12. COST AND ASSISTANCE (IN €)

Total cost	Private sector contribution	Non eligible expenditure	Total eligible cost	ISPA grant	Grant Rate %
62,775,837	0	2,198,324	60,577,513	45,433,135	75

The remaining 25 % of the eligible cost coming from national contribution will be provided by the following national counterparts : the State Budget amounting to € 4,748,116 and the National Environmental Protection Fund amounting € 10,396,262.

The resources from the State Budget will finance the construction of the regional landfills Rousse and Sevlievo, while the resources from the National Environmental Protection Fund will finance the construction of the regional landfills Montana, Pernik, Silistra and Sozopol.

The estimated costs of the individual disposal sites are as follows:

Montana	€ 8,945,826
Ruse	€ 11,907,324
Pernik	€ 10,130,092
Sevlievo	€ 7,085,145
Silistra	€ 10,591,972
Sozopol	€ 11,917,154
Total	€ 60,577,513

For an indicative cost breakdown of the Measure, please refer to the following Table.

Indicative Cost breakdown of the Measure

Measure	Euro

Item	Total costs	Expenditures incurred before application
Planning / design fees	0	226,828
Land purchase	0	0
Site preparation	4,295,865	0
Main works	42,958,672	1,971,496
Plant and machinery	3,188,654	0
Technical assistance*	60,000	0
Supervision	5,030,000	0
Contingencies	5,044,322	0
Tax / public levies	0	0
Other (specify)	0	0
TOTAL	**60,577,513**	**2,198,324**

** This item refers to the cost of Independent tender evaluators.*

13. INVOLVEMENT OF IFIS

No IFI involvement.

14. SPECIFIC CONDITIONS RELATED TO THE MEASURE

See Article 8 of the Financing memorandum.

15. IMPLEMENTATION AND PROCUREMENT

15.1 Implementation and monitoring

The measure will be implemented by the Ministry of Environment and Water (MOEW) which will be the Implementing Agency for several projects envisaged for ISPA.

Within the MOEW, a new Department entitled "Strategy, accession programs and projects" (SAPP) has been established. The Department is responsible for the co-ordination and management of ISPA projects. It closely co-operates with the experts from the National Environmental Protection Fund and from the Regional Environmental Inspectorates, both under the umbrella of MOEW. For each project envisaged for ISPA, there is an ad hoc team composed by three members : a project co-ordinator, an engineering consultant and a financial officer. The main tasks of the Department will be to:

– prepare the Terms of Reference in standard form approved by EC;

– maintain permanent contacts with the Beneficiaries of the projects during the all cycle of the measure;

– organise tenders for nomination of companies involved in the preliminary studies, the project preparation, the tender documents, and the execution of the measure;

– prepare and conduct tender procedures for nomination of contractors for the implementation and supervision of the project. In particular, the selected supervisor will be responsible for the operative control and monitoring of the implementation of the measure. The supervisor will submit reports to the SAPP and the reports will be approved by the special established Steering Committee. The regional inspectorates / regional bodies of MOEW will also control and monitor the physical progress during the measure implementation;

– prepare the physical and financial progress report for the purposes of reporting to the European Commission. The ISPA Task Force will be the responsible institution of the approval of this report and its presentation to the European Commission;

– participate in Tender Evaluation Committees. Experts from the sector departments of the MOEW, the National Environmental Protection Fund, specialists from municipalities and from other institutions and organisations, scientists and consultants from the respective field will participate in these Evaluation Committees;

– check all documents concerning the expenses made for the implementation of the projects with international funding, present them for approval by the National Fund in the Ministry of finance and prepare the financial reports;

– co-ordinate the experts from the National Environmental Protection Fund, which is a Department within the MOEW, for the participation in the control and monitoring during the whole cycle of the measure.

15.2 Procurement and Publicity

15.2.1 Procurement

The projects included in the measure will be tendered in the following manner:

i) one restricted international tender for works containing seven different lots;

ii) one restricted international tender for supervision containing one lot.

The tender dossier for works is under preparation according to the FIDIC Conditions of Contract for Construction including 7 lots as follows:

Lot 1: Landfill Sozopol

Lot 2: Waste Transfer Station for Sozopol

Lot 3: Landfill Pernik

Lot 4: Landfill Silistra

Lot 5: Landfill Montana

Lot 6: Landfill Sevlievo

Lot 7: Landfill Ruse

The cost for supervision is estimated to be around 8 % of the construction costs. With these resources, a consultant will be appointed in agreement with the Commission through international tender following a pre-qualification procedure and it will provide the supervision for all seven lots as “Engineer” according to FIDIC Conditions of Contract.

On the contractual point of view, the intention is to have for each of the eight contracts (7 separate contracts for construction of each landfill, one for the Waste transfer station plus 1 contract for supervision), a pre-qualification in March - April 2001 followed by all the tenders approximately in May 2001.

The works will be implemented according to the provisional procurement plan appended as Annex I.a.

15.2.2 Publicity

Concerning the publicity of the measure, the following activities are planned by the Bulgarian authorities:

– Presentation of the role of ISPA in the accession process through routine media and press releases at national and local level.

– Presentation of the measure through the national media and press releases after the signature of the Financing Memorandum for the measure.

– Publication of a brochure.

– Official ceremony for the signature of the contract for construction and supervision shall be organised with representatives of the European Commission, the Ministry of Environment and Water and the six Municipalities.

– the installation of billboards, containing the logo of the European Union and the abbreviation ISPA with the start of the construction works on the territory of the six Municipalities. In case a logo of the ISPA Pre –Accession Instrument is created before the start of the activities it will be included in the billboard.

oOo

Tables attached to Annex I

I.a Provisional Procurement plan of the measure.

I.b Location of the six new regional disposal sites.

Annex I.a

Provisional Procurement Plan

Tender N°	**Description of works and services to be tendered** (see chapter 6.4)	**Type of contract (works, supplies or serv.)**	**Provisional month of launch of tender (m. / year)**	**Rate of reimb. of invoices relat. to specific contract**
Contract № 1 – Reg. Landfill – Sozopol	Landfill and related infrastructures	Works	May 2001	75 %
Contract № 2 – Reg. Waste Transfer Station for Sozopol (WTS)	Landfill, and related infrastructures	Works	May 2001	75 %
Contract № 3 – Reg. Landfill Pernik	Landfill and related infrastructures	Works	May 2001	75 %
Contract № 4 – Reg. Landfill Silistra	Landfill and related infrastructures	Works	May 2001	75 %
Contract № 5 – Reg. Landfill Montana	Landfill and related infrastructures	Works	May 2001	75 %
Contract № 6 – Reg. Landfill Sevlievo	Landfill and related infrastructures	Works	May 2001	75 %
Contract № 7 – Reg. Landfill Rousse	Landfill and related infrastructures	Works	May 2001	75 %
Contract № 8 – Supervision of the 6 landfills and Sozopol WTS	Supervision services	Service	May 2001	75 %

The specific terms for the award of contracts will be made available in the Official Journal of the European Communities and/or the Internet.

Annex I.b: see file Bg1509mapbulg6sites.jpg

oOo