

ISPA Measure No:
2002 BG 16 P PE 015
doc. no. 02/ISPA/MC/034

FINANCING MEMORANDUM

**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**

**Popovo Wastewater Collection and Treatment
in Bulgaria**

FINANCING MEMORANDUM

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: 2002 BG 16 P PE 015

Title: Popovo Wastewater Collection and Treatment

Duration: **Start date:** The date of signature of the financing memorandum by the Commission

End date: 31 December 2007

Location: Popovo

Group: Danube river basin

Article 3

Commitment

1. The maximum public or equivalent expenditure which may be taken into account for the purpose of calculating assistance shall be € 11 860 433;
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 € 8 895 326;
4. An amount of € 7 116 261 is committed from the 2002 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 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 2007. 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 € 1 779 065, which shall be transferred as follows:
 - An amount of € 889 533 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 and the fulfilment of the other conditions specified in the 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. The final payment shall be subject to:

- a) the presentation of evidence that:
 - (i) The industrial wastewater is pre-treated in compliance with EC Directives and/or recycled as appropriate.
 - (ii) The pre-treatment and/or the recycling is monitored and enforced by the appropriate environmental authorities.
 - (iii) The industrial loads are not harmful to the designed technology of the treatment plant.
 - (iv) an appropriate charge will be introduced for industries, that is acceptable to the Commission, based on the quantity and quality of effluent produced and on the cost of treatment.
- b) the presentation of a final programme for the treatment, reuse and disposal of the sludge under terms acceptable to the Commission.
- c) the presentation of an updated masterplan for water management under terms acceptable to the Commission.

Article 9

The implementation provisions described in the Annexes to this financing memorandum form an integral part of it.

Non-compliance with the conditions and implementation provisions shall be dealt with by the Commission according to the procedure stipulated in Annex III.1. Section VIII.

Article 10

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

21.04.2003
Done at

[Signature]
For the recipient
National ISPA Coordinator
National Authorising
Officer

13-12-2002
Done at Brussels,

[Signature]
For the Community
M. Barnier
Commissioner

List of Annexes

Annex I	Description of measure
Annex II	Financing plan

Description of measure
Popovo Wastewater Collection and Treatment

Commission code No: 2002 BG 16 P PE 015

1. MEASURE TITLE

Popovo Wastewater Collection and Treatment

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

2.1. Name: "ISPA Co-ordination" within Directorate "Management of EU Funds, Ministry of Finance

2.2. Address: 102 Rakovski Str., 1000 Sofia, Bulgaria

2.3 E-mail: D.Krasteva@minfin.government.bg

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

3.1. Name: Strategy, Accession Programmes and Projects (SAPP), Ministry of Environment and Waters (Moew)

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

3.3 E-mail: Marianasir@moew.government.bg

4. FINAL BENEFICIARY (IN CASE IT IS A DIFFERENT BODY FROM THE AUTHORITY MENTIONED UNDER 3)

4.1 Name: Municipality of Popovo

4.2 Address: 1, Al. Stamboliski, str., 7800 Popovo

4.3 Contact: Mayor – L. Veselinov

4.4 Telephone: + 359 608 2 26 12

4.5 Telex/Fax: + 359 608 2 78 36

5. LOCATION

5.1. Beneficiary country: Bulgaria

5.2. Region: Danube river basin

6. DESCRIPTION

6.1. Background

Popovo has, currently, a population of approximately 20 000. Domestic and industrial wastewaters arising from the town are currently discharged without any treatment in a mixture with infiltration water, and when applicable storm-water flows, to the Cherny Lom river after its confluence with the Popovska river downstream of the Municipality of Popovo.

The river Popovska is a tributary of the Russenski Lom river, which in turn flows north into the Danube river next to the Municipality of Russe.

The measure is one of the set of measures approved or under preparation for ISPA which will affect the Danube River section crossing Bulgaria.

The Danube river forms an international border with Romania and therefore the measure will have a positive trans-border impact through a decrease of wastewater contamination and protection of the surface waters within the Danube River basin and finally the delta of the river where it enters the Black sea, an area designated as being of international importance for nature conservation.

6.2. Description

The overall project comprises the construction of a wastewater treatment plant for the treatment of wastewater generated in the city of Popovo, which will eliminate the discharge of untreated sewage into the Danube River, plus additional works relating to the existing sewerage network and to the connection between the networks and the future WWTP.

The infrastructures are designed to meet effluent standards of the EC Directive 91/271 concerning Urban Wastewater treatment which has been transposed into Bulgarian legislation with the adoption of Ordinance No 6/09.11.2000.

Project preparation was carried out by an international consultant firm using PHARE funds for Bulgaria.

The measure will consist of the following main items:

- (i) Extension of the existing Main Collector system;
- (ii) Connection of all the existing twenty-one wastewater outfalls to the new/existing main collectors so that the collected wastewater passes to the new urban wastewater treatment plant;
- (iii) Construction of a new urban wastewater treatment plant (wwtp) in Popovo.

Component 1: The Wastewater treatment plant

The new wastewater treatment plant will provide full biological secondary treatment in accordance with EC Directives. The process used, after a comparison with other possible alternatives, will be the activated sludge method incorporating anoxic zones for nitrogen removal and a separate aerobic digestion stage and associated sludge thickening and dewatering equipment. This technological option has been used to elaborate the conceptual design. The new plant will be built based on the flows and loads projected in the target year 2022.

The design of the WWTP proposed is, in an indicative way, the following:

- (i) Inlet pumping station (using centrifugal pumps);
- (ii) Inlet works (screenings and grit removal);
- (iii) Activated sludge plant including anoxic zones for biological nitrogen removal and a facility for easy incorporation of future phosphorus removal. Supply of air to tank via blowers and fine bubble diffusers;
- (iv) Settlement of activated sludge in clarifiers;
- (v) Pumping station for return of settled activated sludge treatment;
- (vi) Waste activated sludge is pumped to a pre-thickener before passing to sludge stabilisation tank;
- (vii) Aerobic stabilisation in separate aeration plant. Supply of air via blowers and fine aeration;
- (viii) Post thickening of stable sludge and intermediate storage;
- (ix) Dewatering to 25% dry solids for future disposal off-site to the Municipal waste disposal site in first years of operation until the quality and suitability of the sludge for other uses is established.

The new wastewater treatment plant is expected to consist of the following main components:

- Wastewater pumping station;
- Inlet and effluent discharge works;
- Wastewater treatment facilities including biological treatment;
- Sludge treatment facilities;
- Sludge storage facilities;
- Treatment and administrative buildings;
- Ancillary works.

The new wastewater treatment plant will serve a population of 22 640 for the year 2022. It will treat a flow of 7.081 m³/day and will be designed to meet the following parameters:

Design parameters for the Popovo WWTP

Parameters	Unit	Situation without ISPA measure (Inlet parameters)	Situation with ISPA measure (Outlet paramet.)
Total daily average flow	m ³ /d	7.081	
Population equivalent	p.e.	37.717	
BoD	mg/l	319	25
CoD	mg/l	639	125
Suspended solids (SS)	mg/l	320	35
Nitrates* - (N total)	mg/l	48	15
Phosphates* - (P total)	mg/l	7	5

* In the event of the Danube River and its tributaries being declared sensitive zones in terms of water quality, an additional project phase would become necessary to adapt the treatment process to provide for removing phosphorus in accordance with the cited EC Directive, meeting the standard for total phosphorus less than 2 mg/l. Provision has already been made in the conceptual design of the treatment process, in the layout plan of the new WWTP and in the site location of the current project to achieve this required upgrading at minimum cost.

Component 2: The Sewerage network

The sewerage network covers, at present, about 79 % of the population living in the municipality of Popovo and is 40 Km long. The sewerage network in 2022 is expected to cover 96 % of the municipality.

The Main Collector, that intercepts all the existing outfalls just before the river, has a general conceptual design; however, only a small section of about 900m is constructed. This collector, when completed as planned in this project, shall ensure interception and transport of the town's wastewater to the WWTP site.

The sewerage component of the investment will consist of the following items:

- [Primary and Secondary Main Collector 9 900 m](#);
- Connection of twenty-one outfalls to the Main Collector;
- Wastewater pumping station and two Bridge River Crossings.

Finally, for both the WWTP and the sewerage components, there will be only one tender, which will be done according to FIDIC design-build conditions of contract ("Yellow Book"). Accordingly, the final detailed list of the project components will depend on the results of the tender process.

Component 3: Technical Assistance

The technical assistance component will be mainly used to:

- as normal ISPA practice, hire independent technical expertise to participate in the international tendering process for supervision and works;
- provide management support to the project implementation unit created in the Implementing agency to carry out the measure;
- prepare feasibility studies, application form and tender dossier for an additional intervention which will be needed to cover complementary investments in the drinking water and sewerage network (to be proposed for future ISPA, Bulgarian and IFI co-financing);
- carry out the necessary information and publicity activities for the measure;
- prepare any other necessary studies to complement the implementation of the present measure.

7. OBJECTIVES

7.1. Overall Objectives

The overall objective of the measure is to protect the Popovska, Cherny Lom and Russenki Lom rivers and ultimately the Danube River, from pollution from discharges of untreated sewage and industrial wastewater, by the provision of a wastewater treatment plant to treat the wastewater to acceptable effluent quality standards and by the provision of ancillary infrastructures in the collection system.

In particular, the measure will:

- Enable the city of Popovo to achieve compliance with Urban Waste Water Directive;
- Reduce the risks to human health for the population living in the target areas served by the new WWTP;
- Reduce the pollution in the trans-border region, including the Danube River and Black Sea;
- Reduce the potential risk of groundwater contamination;
- Reduce the potential risk of soil contamination;
- Improve the protection of the environment of the river basin waters;
- Improve the state of the flora/fauna of the riverine environment;
- Build-up an effective ecological infrastructure to facilitate economic activity;
- Improve the conditions for the development of key sectors of the economy – tourism and agriculture;
- Improve the quality and quantity range of services for the population in the targeted area;
- Create new employment opportunities– temporary and permanent and stimulate local and regional development.

7.2. Physical Indicators

Key indicators, as illustrated in the following table, will be used to monitor physical progress of the construction of the project, but as final design of certain component will be left to the contractor, the figures presented in the table are only indicative.

Table 1 :

An indicative set of Physical Indicators for the ISPA Sewerage and Wastewater intervention in Popovo

Physical Indicator		Earth Works		Construction	
		Unit	Volume	Unit	Volume
I	SEWERAGE				
A.	MAIN COLLECTORS				
1.	New Main Collectors	m ³	30 747		
	<i>a. Main collector from the town boundary to the WWTP:</i>		17 633		
	Dia 800 mm			M	4337
	<i>b. Inside the town boundaries:</i>		15 114		
	Dia 1200 mm			M	300
	Dia 1000 mm			M	1450
	Dia 800 mm			M	603
	Dia 600 mm			M	1660
	Dia 400 mm			M	1200
	Sewerage pumping station pressure line dia 80 mm			M	350
	Bridge river crossings	m ³	40	No	2
2	Interceptor Chambers with Overflows:				
	Earthworks	m ³	2030		
	Interceptor chambers				
2.	Type A			No	3
	Type B			No	3
	Type C			No	2

II	WASTEWATER TREATMENT PLANT				
B.	ENGINEERING				
1.	Site Preparation	m ²	27 000	-	-
2.	Drainage System	-		-	-
C.	STRUCTURES OF WWTP				
1.	Inlet P.S. for incoming sewage with Grab Screens on the Entrance	m ³	1 030	m ³	980
2.	Fine Screens Chamber	m ³	170	m ³	900
3.	Aerated Grit Channels	m ³	1 020	m ³	470
4.	Stormwater Tank and Flow Meter	m ³	2 670	m ³	1 070
5.	Selector Tank	m ³	570	m ³	230
6.	Aeration Tanks	m ³	9 725	m ³	3 890
7.	R.A.S./S.A.S. P.S. (Return Activated Sludge/Surplus Activated Sludge Pumping Station) incl. Distribution Chamber	m ³	900	m ³	950
8.	Secondary Sedimentation Tanks	m ³	9 700	m ³	3 900
9.	Chlorine Contact Tank	m ³	1 250	m ³	500
10.	Outlet Channel	m ³	100	m ³	50
11.	Pre-thickener	m ³	220	m ³	540
12.	Aerobic Digester	m ³	1 200	m ³	1 900
13.	Post-thickener, Silo and PS to Sludge thickener	m ³	250	m ³	600
14.	P.S. (Pumping Station) for Supernatant Liquor	m ³	350	m ³	150

Physical Indicator		Earth Works		Construction	
		Unit	Volume	Unit	Volume
D.	BUILDINGS AND SERVICE EQUIPMENT				
1.	Building over Inlet Works P.S.	Included in Section C above			
2.	Building over Screen House	Included in Section C above			
3.	Building over Grit Tanks	Included in Section C above			
4.	R.A.S. Pumps and Blower Building	m ³	200	m ³	830
5.	Chlorine Building	m ³	100	m ³	500
6.	Transformer/Diesel Generator Building	m ³	-	m ³	1 260
7.	Administrative and Laboratory Building	m ³	400	m ³	1 920
8.	Technological Building/Boiler Room	m ³	300	m ³	1 350
9.	Building over Aerobic Digester	Included in Section C above			
10.	Pre- Post Thickener Building	Included in Section C above			
11.	Dewatering Equipment Building	m ³	240	m ³	1 080
12.	P.S. for supply of Technical Water	m ³	-	m ³	20
13.	Covered Area for Sludge Cake	m ³	-	m ³	1 500
E.	INFRASTRUCTURE AND SITE COMMUNICATIONS				
1.	Site Pipework	Included in MEICA Prices			
2.	Site Roads	m ²	3 600		
3.	Fence	m	700		
F.	EXTERNAL INFRASTRUCTURE				
1.	External Water Supply Main	m	100		
2.	Access Road	m ²	600		
3.	Electric Power Supply	m	50		
4.	Telephone	Included			

8. WORK SCHEDULE

<i>Category of work</i>	<i>Start date</i>	<i>Completion date</i>
Land acquisition* ⁽¹⁾ :	Completed	
Feasibility study:	January 2001	June 2001
Economic analysis:	July 2001	September 2001
Financial analysis:	October 2001	September 2002
Environmental impact assessment:	July 2001	October 2001
Design studies:	July 2001	September 2001
Tender documents:	October 2001	February 2003
Construction :	December 2003	January 2006

*⁽¹⁾ Land purchase completed by the Municipality

9. ENVIRONMENTAL IMPACT ANALYSIS

The type of infrastructure investment falls within the scope of Annex II of the Directive 85/337. The competent authority is the Ministry of Environment and Water.

The resolution on EIA, including full public consultation, was taken in August 2001 with a set of recommendations which will have to be followed before the start, during the construction and during the operation period of the plant. All parties involved in the implementation and operation of the plant are obliged to ensure that the EIA recommendations are carried out.

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

- 1) EC Directive 91/271 on Urban Wastewater Treatment; by ensuring that the wastewater discharges will comply with the requirements for discharges into less sensitive waters, for agglomerations exceeding 10 000 p.e.;
- 2) EC Directive 78/659 on Freshwater Fish needing protection or improvement in order to support fish life as amended by EC Directive 91/692; by treating the wastewater discharges, the measure will contribute to the improvement of the river basin waters and thus the conditions for the support of fish life;

- 3) EC Directive 80/68 on Groundwater Directive as amended by EC Directive 91/692;
- 4) EC Directive 76/464 on the pollution caused by certain dangerous substances discharged into the aquatic environment;
- 5) EC Directive 76/160 concerning the quality of bathing water;
- 6) EC Directive 75/440 concerning the quality required of surface water intended for the abstraction of drinking water;
- 7) EC Directive 80/778 relating to the quality of water intended for human consumption;
- 8) Water Framework Directive 2000/60 establishing a framework for Community action in the field of water policy.

10. COST AND ASSISTANCE (IN €)

Indicative Cost breakdown

Item	Total cost (Euro)	Expenditures incurred before application (Euro)
Land acquisition* and previous expenditure**		178 828
Works and Equipment	9 612 330	
Technical assistance and Supervision	1 446 618	
Contingencies	801 485	
TOTAL (Euro)	11 860 433	178 828

* The Municipality has acquired only a small part of the Land from private owners, the remaining part was already owned by the Municipality.

** Previous expenditure includes technical assistance for the feasibility study, the ISPA application, the preliminary design and contract documentation.

Total cost	Private sector contribution	Non eligible expenditure	Total eligible cost	ISPA grant	Grant Rate %
12 039 261	0	178 828	11 860 433	8 895 326	75

The national counterpart financing will be provided by the State Budget, National Fund.

11. INVOLVEMENT OF IFIs

No International Financial Institution is involved, at this stage, in the co-financing of this measure. However, discussions are ongoing with the EIB for the possible future co-financing of water projects in the target river basin in Bulgaria.

12. SPECIFIC CONDITIONS RELATED TO THE MEASURE

See Article 8 of the Financing Memorandum.

13. PROCUREMENT PLAN

The activities included in the measure will be implemented according to the procurement plan appended as annex I.a.

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Provisional Procurement Plan

Tender N°	Description of works and services to be tendered	Type of contract	Provisional month of launch of tender	Rate of reimburs. of invoices relating to specific contract
1	Technical assistance	Services	1 st Semester 2003	75 %
2	Supervision	Services	1 st Semester 2003	75 %
3	Construction of WWTP and sewerage elements according to FIDIC Conditions of Contract	Works	2 nd Semester 2003	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.

