ISPA Measure No:
2000/BG/16/P/PE/003

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

Construction of Wastewater Treatment Plants located in the Maritsa Basin (Stara Zagora and Dimitrovgrad) 2000/BG/16/P/PE/003

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:	2000/BG/16/P/PE/003
Title:	Construction of Wastewater Treatment Plants located in the Maritsa Basin (Stara Zagora, Dimitrovgrad).
Duration:	**Start date**: The date of signature of the financing memorandum by the Commission.
	End date: Until 31 December 2005.
Location:	Stara Zagora and Dimitrovgrad
Group:	Set of Wastewater Treatment Plants for the municipalities of Stara Zagora and Dimitrovgrad located in the Maritsa basin catchment area.

Article 3

Commitment

1. The maximum public or equivalent expenditure which may be taken into account for the purpose of calculating assistance shall be € 43,399,688.

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 € 32,549,766.

4. An amount of € 15,699,092 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 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 31st of December 2005.

   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 € 6, 509, 953, which shall be transferred as follows:

   – An amount of € 3,254,977 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. The second instalment of the advance payment is conditional on:

(a) Evidence provided that:

(i) The industrial wastewater is pre-treated and/or recycled as appropriate.

(ii) This pre-treatment is monitored and enforced by the appropriate environmental authorities.

(iii) The industrial loads are not harmful to the designed technology to the treatment plant.

(b) An agreement being reached between the beneficiary, the Commission and the EIB on the most appropriate technical solution for wastewater treatment.

(c) The updating of the existing Environmental Impact Assessments as required to take account of changes to the design of the wastewater treatment plants. This updating should include full public consultation.

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

(e) The preparation of an implementation work plan by the Project Implementation and Monitoring Unit (PIMU) to be agreed with the Commission and the EIB.

4. Condition relating to intermediate payments:

The first intermediate payment is conditional on:

a) The loan agreement with the EIB to secure the co-financing of the measure becoming effective.

b) The presentation of a programme for the disposal of the sludge generated by the WWTPs included in the measure.

c) The completion of a survey of the existing sewerage networks of the cities concerned and the development of a comprehensive rehabilitation programme to ensure compatibility with the new wastewater treatment plants.

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.

Done at

Done at Brussels, 18. 12. 2000

For the recipient

National Authorising Officer

Evg. Chachov

For the Community

M. Barnier
Commissioner

Michel BARNIER

List of Annexes

Annex I Description of measure

Annex II Financing plan

Annex III

- Annex III.1 ISPA Financial Implementation provisions
- Annex III.2 Provisions governing eligibility of expenditure for measures assisted by ISPA
- Annex III.3 Model for Payment Claims, for reporting on financial and physical progress and request for modification
- Annex III.4 Agreement on minimum requirements for financial control applicable to ISPA assisted measures
- Annex III.5 Agreement with respect to irregularities and recovery of sums wrongly received under ISPA
- Annex III.6 Information and Publicity requirements

ooOOOoo

ANNEX 1

Description of measure
(summary)

Commission code No: 2000/BG/16/P/PE/003

1. MEASURE TITLE

Construction of Wastewater Treatment Plants located in the Maritsa Basin (Stara Zagora, Dimitrovgrad).

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

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

2.2 Address: 17-19 Sv. Kiril i Metody str., Sofia 1000, Bulgaria.

2.3 E-mail: pharecbc@mail.bol.bg

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

3.1 Name: Joint Department- Ministry of Regional Development and Public Works and Ministry of Environment and Water.

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

3.3 E-mail: pharecbc@mail.bol.bg

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

4.1.1 Name: Water Supply Company – Stara Zagora

4.1.2 Address: 62a, Hristi Botev str., Stara Zagora

4.2.1 Name: Water Supply Company – Dimitrovgrad

4.2.2 Address: 36 zahari Zograf str., Dimitrovgrad

5. LOCATION

5.1. Beneficiary country: Bulgaria.

5.2. Region: South-central.

6. DESCRIPTION OF THE MEASURE

6.1 Overview

The measure forms part of a group of 3 projects for the construction of new wastewater treatment plants and related infrastructure to serve Stara Zagora, Haskovo and Dimitrovgrad. The cities are located in South-central Bulgaria on the Maritsa River or its tributaries. The measure is aimed at tackling the pollution of the receiving waters of the Maritsa River and ultimately of the Aegean, as well as improving the environment of the cities concerned and their surrounding region.

The proposal is to co-finance the project in parallel with the European Investment Bank: ISPA will finance two of the three wastewater treatment plants (Stara Zagora and Dimitrovgrad), while the European Investment Bank finances the third (Haskovo). Close co-operation between the Commission and the EIB has been maintained during the preparation of the projects and this will continue during all phases of implementation. While the ISPA assistance will be focused on the two projects cited, these should be considered within the wider context of the Maritsa basin.

Overall, the projects will treat the domestic, commercial and industrial effluents of a region with a population of around 280,000. The cities concerned have an extensive network of sewage collection but no wastewater treatment facilities.

6.2 Background

The measure is consistent with Bulgarian "National Priority Investment Programme for Construction of Wastewater Treatment Plants in Settlements with a Population Equivalent of over 10,000", whose principles are in line with the priorities of the Accession partnership 1999 and the National Programme for the Adoption of the Acquis 2000. This programme, attached to the Bulgarian ISPA Environment strategy, has been elaborated in order to contribute to the implementation of EC Directive 91/271 on Urban Waste Water Treatment.

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

Furthermore, the measure will make a significant contribution to the goals set out in the Helsinki "Convention for the Protection and Use of Trans-boundary Watercourses and International Lakes".

The municipalities concerned were identified as priorities for new WWTP facilities in a PHARE study entitled "Review of water pollution in the Cross border region of South Bulgaria" (final report October 1998) and another ad hoc Phare study entitled "Study of the WWTPs for Stara Zagora, Haskovo and Dimitrovgrad"[1].

Each town has an industrial concentration and sewage collectors for a large part of their domestic and industrial sewage. At present, none of the municipalities has an

1 Phare Framework contract – Environment, "Study of the WWTPs for Stara Zagora, Haskovo and Dimitrovgrad", Final report December 1998, OSS N° 2 (FWC), BG 9402 – 05 – 02 – 03 – 01.

operating WWTP. The whole of the sewage therefore passes in a raw state directly into the Maritsa River and its tributaries.

Only Dimitrovgrad has a partially built WWTP started in the middle 1980's, but whose construction ceased some years later because of the lack of financing. Given the poor quality of these partial works, it will be necessary to demolish most of the existing structure in order to guarantee the quality of the new WWTP. The cost of the demolition will be included in the cost of the measure.

The Government of Bulgaria has received a loan from the World Bank for restructuring and modernisation of the Water Companies. Investments are provided for water loss reduction and to improve water quality and wastewater discharges, so that they comply with the requirements of the relevant EC Directives.

6.3 Overall description of the Measure[2]

The Maritsa river basin has a catchment area of 21,314 sq. km and a length of 322 km within Bulgaria. The river flows through central Bulgaria to the South-eastern border with Greece. It then flows along the border between Greece and Turkey to discharge into the Aegean Sea (see Annex I.b).

The population of the catchment is about 1.75 million and the area contains important agricultural and industrial activities.

The three municipalities of Stara Zagora, Haskovo and Dimitrovgrad currently discharge untreated wastewater into the Maritsa River or its tributaries.

The present day population of the three municipalities is about 260,000 and the total mean dry weather flow of untreated wastewater is estimated to be in the order of 100,000 cm per day. The estimated BOD loading of the wastewater is 23,000 kg per day (8,000 Tonnes per year). The amount of pollution is particularly high in the Cities of Haskovo and Stara Zagora, since the wastewater is discharged into tributaries where there is very little dilution.

The measure, therefore, aims to tackle the most urgent problem of treatment via the construction of three new wastewater treatment plants in the cities concerned with associated infrastructure necessary for their functioning (intercepting collectors, secondary collectors, pressure mains, pumping stations, access roads, etc).

The new plants will provide full biological secondary treatment in accordance with EC Directives.

The municipalities concerned have existing wastewater collector systems, which were constructed in 1950's and 1960's. All are combined systems. The collector systems of the three cities are in a poor state. In order to tackle the problems, ISPA assistance will be conditional on the preparation of comprehensive sewerage rehabilitation programmes for the areas concerned and on the preparation of plans for extensions to the sewerage network where deemed necessary.

[2] In this document, Measure is defined as the group of two projects, Stara Zagora and Dimitrovgrad, as a whole.

The technical process recommended by consultants for each of the wastewater treatment plants is the Sequencing Batch Reactor (SBR). This process has been compared to other possible techniques, all of which comply with the standards of *EC* directive 91/271/EEC. A final decision on the most appropriate technical solution will be taken by the Bulgarian authorities in agreement with the Commission and the EIB.

6.4 The individual projects

The following two projects are presented for ISPA financing. 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 included in the measure.

I. Stara Zagora project

The City of Stara Zagora has a current population of approximately 150,000. The design horizon for the treatment plant is 2020 and the forecast is that the population will increase to 175,000 by the end of this period. Stara Zagora is an important regional administrative centre, with important commercial and industrial activities.

Stara Zagora is located in the plain of the Maritsa River Basin, at the foot of the southern slopes of the Sredna Gora Mountains. The average elevation is 165 m above median sea level.

The city sewers drain into the Bedechka River, which flows into the Sazliyka River, which is a tributary of the Maritsa River. Previous assessments of the water quality show the Bedechka River to be heavily polluted. The pollution loading increases during a drought period because of reduced dilution.

A site for the new wastewater treatment plant has been acquired and the location complies with the regulations set by the Bulgarian Ministry of Health.

A new collector will need to be constructed, as part of the project, to connect the existing sewerage system to the WWTP.

The new WWTP is to be designed to give full biological treatment in order to comply with the effluent standards for agglomerations of over 10,000 p.e. for discharge into less sensitive waters as specified in *EC* Directive 91/271.

Design parameters for the Stara Zagora project

Population equivalent (2020)	Number	251.000	
Total daily average flow	m3 / d	60.178	
Parameter	**Unit**	**Before the measure**	**After the measure**

BOD concentration	mg / l	230	25
Suspended solids concentration	mg / l	200	35
COD concentration	mg / l	285	125

The Stara Zagora project comprises the following main elements:

1. Main collector to connect existing network to WWTP- 2.0m diameter pipe approximately 1.1 km long;

2. Access road to connect site to nearest public road;

3. Wastewater Treatment Plant comprising:

   – Storm overflow

   – Inlet pumping station

   – Inlet Works for screening, grit removal, flow measurement and sampling

   – Interconnecting pipework

   – SBR Basins

   – Effluent discharge to river including flow measurement and sampling

   – Sludge treatment plant and storage

   – Building with control room, offices, laboratory etc

   – Workshop

   – Site roads and services

The main physical indicators of the Stara Zagora project

Physical Indicator	Unit	Quantity
Inlet chamber	m3	12
Screens	m3	1500
Influent pumping station	m3	900
Grit removal channels	m3	960
SBR Cells	m3	62500
Contact tank	m3	1800

Site drainage	m	560
Sludge tank	m3	800
Sludge Storage	m3	6400
Dewatering building	M3	2400
Service building	m3	600
Final effluent discharge with flow measurement	m3	24
Grading & landscaping	m3	53000
Site roads	m2	4100
Site communications	m	1600
Site Services	m	2200
Greenbelt setting	m2	9800
Fence	m	1300
Check point building	m3	80
Access road	m2	900
Delivery collector	m	1250
Discharge collector	m	50

II. Dimitrovgrad project

The Municipality of Dimitrovgrad is located on both banks of the Maritsa River. The town centre and the majority of the industries are located on the right bank. A few industries and four communities are located on the left bank. The average elevation of the city is 92 m above median sea level. Both the right and left banks discharge untreated wastewater directly into the Maritsa River.

The city currently has a population of about 53,000, with 43,000 people living in the city on the right bank on the river, and 10,000 people living on the left bank in the districts of Tchernokonevo, Vulkan, Mariino and Mlada Gvardia. The forecasted total population equivalent for the year 2020 is 68,500.

The proposed wastewater treatment plant is to be located at the site of a partially built treatment plant. The construction of this wastewater treatment plant was started in the mid 1980's, but construction was suspended in the early 1990's. The civil works for some of the major elements of the plant are at varying stages of completion. The standard of the civil works is very poor. The

civil works are not considered to be suitable for incorporation into the proposed treatment plant. Therefore, it will be necessary to demolish the existing works prior to commencing the new plant.

The new treatment plant is to be designed to give full biological treatment, in order to comply with the effluent standards for agglomerations of over 10,000 p.e., for discharge into less sensitive waters, in compliance with EC Directive No 91/271.

Design parameters for the Dimitrovgrad project

Population equivalent (2020)	Number	68.500	
Total daily average flow	m3 / d	16.520	
Parameter	**Unit**	**Before the measure**	**After the measure**
BOD concentration	mg / l	230	25
Suspended solids concentration	mg / l	200	35
COD concentration	mg / l	285	125

The Dimitrovgrad project comprises the following elements:

1. Preparation of site of existing works;

2. Wastewater Treatment Plant comprising:

   – Storm overflow;

   – Inlet pumping station;

   – Inlet Works for screening, grit removal, flow measurement and sampling;

   – Interconnecting pipework;

   – SBR Basins;

   – Effluent discharge to river including flow measurement and sampling;

   – Sludge treatment plant and storage;

   – Building with control room, offices, laboratory, etc.;

   – Workshop;

   – Site roads and services.

At present the districts on the left bank of the Maritsa River have no sewerage connection to the main collectors on the right bank. In order to remedy this, the project will include the following additional elements with an estimated cost of 8 M Euro:

i) construction of 2 sewage pumping stations located in Tcernokonevo and Mariino with capacities of 100 m3/h and 500 m3/h;

ii) two pressure collectors to collect and transport the wastewater to the new WWTP, including a river crossing. The required pipes are approximately 5 Km with diameter of 600 mm and 500 m with a diameter of 200 mm;

iii) secondary collectors of 31 km (Chernokonrvo – 8 Km, Vulkan – 4 Km, Mariino – 9 Km).

The scope of the work to be included in the extension of the network is to be carefully reviewed in agreement with the Commission.

The main physical indicators of the Dimitrovgrad project

Physical Indicator	Unit	Volume
Demolition & site preparation	M3	12,000
Inlet chamber	M3	8
Screens	M3	600
Influent pumping station	M3	400
Grit removal channels	M3	240
SBR Cells	M3	17600
Contact tank	M3	550
Site drainage	M	280
Sludge tank	M3	350
Sludge Storage	M3	4000
Dewatering building	M3	750
Service building	M3	680
Final effluent discharge with flow measurement	M3	24
Grading & landscaping	M3	23000
Site roads	M2	3000

Site communications	M	1300
Site Services	M	1800
Greenbelt setting	M2	7300
Fence	M	1200
Check point building	M3	80
Access road	M2	1800
Delivery collector	M	10
Discharge collector	M	60

7. OBJECTIVES

The overall objective of the measure is to reduce the pollution load of the Maritsa River and its tributaries, and ultimately the water quality of the Aegean Sea, resulting in improvements to the environment and reducing the potential risk to public health.

The construction of the new wastewater treatment plants, giving full bacteriological treatment, will significantly reduce the pollution of the receiving waters. The measure when fully implemented will reduce the BOD loading of the discharges by between 80 to 90%. Furthermore, there will be a reduction in the potential risk of polluting ground waters where they are hydraulically connected to the river.

The measure will contribute to the realisation of the following key objectives:

– improvement of the water quality in the Maritsa River basin;

– reduction of the potential risk of groundwater contamination;

– reduction of the potential risk of soil contamination;

– improvement of the protection of the environment of the river basin waters;

– improvement of the protection of the flora/fauna of the riverine environment;

– reduction of the risks to human health for the population living in the target areas served by the new WWTPs;

– reduction of pollution in the Trans-border region, including the Aegean sea.

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. The transposition of the relevant legislation is at an advanced stage and is expected to be in place by the end of the year 2000.

(2) EC Directive 78/569 on Freshwater Fish 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

The measure will minimise pollution of the receiving water, thus reducing the potential risk of polluting ground waters, where they are hydraulically connected to the river.

Moreover, the measure will contribute to meeting the requirements of the Helsinki Convention on the Protection and use of Trans-boundary Watercourses and International Lakes.

8. WORK SCHEDULE

Stara Zagora and Dimitrovgrad projects	Start date	Completion date
Feasibility study	Oct. 1998	Final Report Dec. 98
Feasibility Review and Report	17/5/2000	31/8/2000
Economic analysis	4/7/2000	26/7/2000
Financial analysis	4/7/2000	26/7/2000
EIA		
Stara Zagora	July 1996	Sept 1996
Dimitrovgrad	July 1998	Sept 1998
Design studies	17/5/2000	31/8/2000
Tender documents	15/8/2000	26/10/2000
Land acquisition		
Stara Zagora		31/8/2000
Dimitrovgrad		31/8/2000
Surveys & Designs	June 2001	May 2002

Construction	June 2002	May 2004
Operational Training	June 2004	June 2005
Operational phase	June 2004	

9. ECONOMIC AND SOCIAL COST-BENEFIT ANALYSIS

A standard cost-benefit analysis (CBA) has not been carried out in the case of this measure because there is no generally agreed methodology for quantifying and valuing the environmental benefits from wastewater treatment facilities. There are particular difficulties in attempting to estimate decreased costs of health care or the benefits from illnesses avoided because of the lack of statistical data or agreed valuation methods. Similarly, the benefits in terms of damage avoided to surface or ground waters to be derived from the construction of new treatment facilities are difficult to quantify and to put a reliable value on them.

Some of the non-quantifiable benefits (and costs) that might be expected from the measure are as follows:

- There will be significant improvements to the local state of environment and human health by reducing the environmental pollution from discharging sewage.

- Improved sewage collection in the areas assisted by the projects will contribute to increased competitiveness through the reduction of local firms' production costs (penalty charges) 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 soil, as well as a limitation of the potential damage to bio-diversity in the areas covered by the measure.

- The measure will help Bulgaria to meet the criteria for accession into the EC, 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 other infrastructure.

International consultants have, in addition, undertaken a cost effectiveness analysis comparing two alternative methods for wastewater treatment: extended aeration and Sequencing Batch Reactor. Both of these methods fully meet the required EC

standards. The results suggest that SBR may be the most cost-effective method taking into account the capital cost and running costs over the life of the assets. However, as indicated in section 6.3, a decision on the technical solution will be taken by the Bulgarian authorities in agreement with the Commission and the EIB. This will have to consider all relevant factors including costs and relative complexity of operation.

10. MAIN ELEMENTS OF FINANCIAL ANALYSIS

A financial analysis has been undertaken of the measure as a whole and of each of the component projects in order to establish the long-term viability of the measure and to help determine the appropriate rate of grant. The precise arrangements for recovering costs have yet to be determined between the Central Government and the municipalities concerned so that the results of these analyses are provisional. However, the Bulgarian authorities have confirmed their intention to respect the provisions of the EC Draft Water Framework Directive under which charges for water supply and wastewater treatment are required to reflect the "Polluter-Pays" and to move towards full cost recovery.

The main results of the financial analysis based on alternative tariff scenarios are as follows :

Maritsa basin group	Low tariff IRR	High tariff IRR
No ISPA grant	-10.2 %	4.5 %
With ISPA grant	-5.2 %	11.5 %

The high tariff scenario equates to a move to full cost recovery on completion of the projects, while the low cost scenario implies a more gradual progression towards full cost recovery.

The results show that, even under the high tariff scenario, there is a need for a substantial element of ISPA grant.

11. ENVIRONMENTAL IMPACT ANALYSIS

For Stara Zagora and Dimitrovgrad, the projects are part of the class of development covered by the Annex 1 of the EC Directive on EIA 85/337 as amended by 97/11.

The Environmental Impact Assessments for both projects, as required by the cited EC Directive were carried out between 1996 and 1998.

The EIA for Stara Zagora and Dimitrovgrad will be updated in order to take into account changes in the technical design the projects. In Bulgaria the municipalities are obliged to take into account the EIA recommendations.

The measure, in providing full biological secondary treatment in accordance with the EC Directives requirements will have the following estimated impact compared to the existing levels:

– a reduction of the Biological Oxygen Demand (BOD) of 89 %;

– a reduction of the Suspended Solids Concentration (SS) of 83%;

– a reduction of the Chemical Oxygen Demand (COD) of 56 %.

A comprehensive masterplan for Water and Wastewater for each of the municipalities concerned by the measure shall be prepared no later than 1.10.2001

The operators of the plants will carry out self-monitoring in accordance with Bulgarian legislation. This monitoring programme will include the following aspects: daily sampling, analysing and recording of the influent and effluent, sampling, testing and recording of sludge quality, control procedures for handling waste from grit and screening facilities, monitor noise levels.

The new Bulgarian Water Act (entered into force in Feb. 2000) will regulate the scope and the procedure s for the water economic plans development. In order to achieve its objectives the Bulgarian authorities are currently developing River basin Management Plans (with a programming period of 6 years). One of these Plans will concern the Maritsa basin river catchment area.

In accordance with the "polluter pays" principle; the operational and maintenance costs related to the projects included in the measure shall be recovered by the tariffs charged to the consumers.

12. COST AND ASSISTANCE (IN €)

Total cost	Private sector contribution	Non eligible expenditure	Total eligible cost	ISPA grant	Grant Rate %
43,399,688	0	0	43,399,688	32,549,766	75 %

For an indicative cost breakdown of the measure, please refer to the following Table:

Indicative Cost Breakdown of the Measure

Measure (stara and dimitrovgrad) **Euro**

Item	Total costs
Planning / design fees	1,788,873
Land purchase	0
Site preparation	692,316
Main works	21,576,558
Plant and machinery	12,637,001
Technical assistance (incl. supervision and operational training)	2,400,000
Contingencies	4,304,940
Tax / public levies	0
TOTAL ISPA Measure	**43,399,688**
Total Maritsa basin intervention (including Haskovo)*	**61,413,182**

** This figure is presented only for information.*

The estimated costs of the new WWTPs and related infrastructures are as follows:

Stara Zagora	€ 23,853,208
Dimitrovgrad	€ 19,546,480 [3]
Total	**€ 43, 399, 688**

In the financing plan of the measure, the national contribution will be made up of € 4,339,969 coming from the National Fund for Environmental Protection.

It should be noted that the ISPA grant represents **53 %** of the total estimated cost of the Maritsa basin intervention (including the Haskovo project).

[3] The total amount of the Dimitrovgrad project includes the infrastructure and facilities necessary to connect the left bank of Dimitrovgrad to the WWTP for an estimated cost of approximately 8 Meuro.

13. INVOLVEMENT OF IFIS

As shown in the Annex II, the measure includes in its financing structure a loan element.

ISPA will co-finance two of the WWTPs (Stara Zagora and Dimitrovgrad), while EIB will co-finance the Haskovo WWTP with the Bulgarian authorities and provide some of the counterpart finance for Stara Zagora and Dimitrovgrad plants. The European Investment Bank approved a loan of Euro 28 million for the "Maritsa Basin waste water project" at its Board of 22 June 1999. The finance contract was signed in July 1999 with the Deputy Prime Minister, the Minister of Regional Development and Public Works and the Minister of Environment and Waters.

14. SPECIFIC CONDITIONS RELATED TO THE MEASURE

See article 8 of the financing memorandum.

15. IMPLEMENTATION AND PROCUREMENT

15.1 Implementation

The measure will be implemented by the Joint Department of the Ministry of Regional Development and Public Works and Ministry of Environment and Water. The Joint Department (or "Project Implementing and Monitoring Unit") was created in 1998 and has been involved in implementing the EIB-financed "riverbank and coastline protection project". The core unit of the Joint Department will consist of 3 members of professional level and the equivalent of 2 support staff. It will be supported by an international consultant acceptable to the Commission and the EIB. It is proposed that this unit should prepare an implementation work plan to take account of the requirements of the measure.

The Water Supply Companies of the municipalities have currently little experience in operating wastewater treatment plants. For this reason it has been suggested that the relevant contracts are prepared in a way that the contractor will have to retain the operating responsibility over a fixed initial *period of 3 years* after the commissioning of the plants (ISPA may finance up to 1 year of the related costs). This operational training will aim to ensure that the staff of the water supply companies will be able to guarantee that the operating and maintenance responsibilities will be successfully taken over by the water supply companies at the end of the contractor's initial period.

15.2 Procurement

Concerning the procurement of the measure, the plan is composed by two sections.

i) The first section concerns the works planned.

The tender documents will be prepared for launching international tenders for the Stara Zagora and Dimitrovgrad projects according to the Phare - DIS manual rules for procurement (as updated). The conditions of contract will follow the FIDIC - Conditions of Contract for Plant and Design-Build (Yellow Book-1st Addition 1999).

It is planned that the tender documents for the two lots of works will be ready for tendering by the end of October 2000.

ii) The second section concern the supervision contracts planned.

The tender documents will be prepared for launching international tenders for the site supervision of the construction of each of the two cited projects.

The tender documents will be prepared for each of the wastewater treatment plants, as two separate lots and they will apply the Phare DIS Manual General Conditions for Service Contracts (as updated).

It is planned that a pre-qualification for each lot of supervision will take place and the two tender documents will be ready for tendering by the end of October 2000

The lots concerned will be tendered according to the provisional procurement plan appended as annex I.a.

Tables attached to Annex I

I.a Provisional Procurement plan of the Measure.

I.b Location of the Maritsa basin new WWTPs and related infrastructures.

Annex I.a

Provisional Procurement Plan

Tender N°	Description of works and services to be tendered	Type of contract (works, supplies or services)	Provisional month of launch of tender (month/ year)	Rate of reimbursement of invoices relating to specific contract
	Design and build contracts			
LOT 1, Stara Zagora WWTP	WWTP and related infrastructures	Works	February 2001	75 %
LOT 2, Dimitrovgrad WWTP	WWTP and related infrastructures	Works	February 2001	75 %
	Supervision			
LOT 3, Stara Zagora	Supervision service	Service	February 2001	75 %
LOT 4, Dimitrovgrad	Supervision service	Service	February 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 a Map with the Location of the Maritsa basin new WWTPs and related infrastructures.

oOo