Terms of Reference

BG 9810-02-01 (003)

Preparation of ISPA application form for the project

"Establishment of a National Hazardous Waste Management Centre"

1. Background

1.1. General background

Since the start of restructuring of the political and economical systems in the countnes in Central and Eastern Europe in 1989, the EU Commission has on behalf of the member states of the European Union provided support and assistance to the restructuring of the economies. The primary instrument for this support has been the Phare programme mainly aiming at providing technical assistance and know-how to the countries in Central and Eastern Europe.

At the moment, ten Central and Eastern European countries are candidate countries for membership of the European Union. These are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania. Poland, Romania, Slovakia and Slovenia. At present, these countries are undertaking various measures to comply with the acquis communataire.

In order to advance this process further, the member states of the European Union have decided to further support the applicant countries by preparing them for accession. Part of this preparation will be implemented by the ISPA initiative (Instrument for Structural Policies for Pre-Accession) managed by the EU Commission (DG XVI and DGIa). The ISPA initiative covers the environment and transport sectors.

The overall objectives of ISPA in the environment sector are:

Assisting the countries in meeting the environmental acquis; and

Assisting the countries adapting to EU environmental legislation The

priorities are:

waste water;

drinking water;

solid waste management; and

air pollution

ISPA is planned to be implemented in the period 2000-2006 with an annual budget of 1 Billion Euro to be distributed among the 10 candidate countries and between the transport and environment sectors. ISPA will finance up to 85% of public expenditure for specific projects.

For each project, the country will, through a designated central authority, provide an application based on a standard application form (Annex 1 to the TOR).

1.2. Project background

Bulgaria has identified " Establishment of a National Hazardous Waste Management Centre " as a possible measure to be financed by ISPA.

- The Ministry of Environment and Water is the main stakeholder in the project realization. The implementation of the project will be carried out in a close co-operation with the Consultant, sub-consultants, the local authorities, NGO's and relevant local /public and private companies" producing and/or dealing with hazardous waste collection, separation and treatment. The Ministry of Environment and Water will co-ordinate the selection of relevant co-operation partners in co-ordination with the Consultant.

- In 1997 the Reduction of the Harmful Impact of Waste upon the Environment Act was approved by Bulgarian Parliament. It incorporates definitions on "hazardous waste", and in the secondary legislation developed in connection with the Waste Act, a framework for the reporting of generated waste by waste producers was established (Regulation N 10/1998). In addition the transportation, treatment and final disposal are guided by Decree No. 53/1999 (The Transportation and Treatment of Industrial and Hazardous Waste).

- In the period 1995 - 1997 approximately 1.2 million tones of hazardous waste was generated per year. It is estimated that around 40 % of this amount belongs to 11 types of common hazardous waste like pesticides, used oil, sludge from WWT of industrial plants, hospital waste etc., generated in minor quantities by various sources. Waste originating from mining are not included in these figures.

- Data from Ministry of Environment and Water demonstrates, that more than 500 industrial plants generate less than 1.000 tones / year, approximately 40 plants generate in the range of 1.000 to 10.000 tones / year, and that 14 plants generate more than 10.000 tones / year. More than 30 % of the hazardous waste generated are disposed at the existing municipal landfill areas designed for municipal solid waste only. However, the above outlined pattern of generation of the waste from Bulgarian industry adds to the possibility that the Ministry of Environment and Water will achieve environmental control of significant quantities of hazardous waste targeting a relatively small number of waste producers.

The proposed project entitled "Establishment of National Hazardous Waste Management Centre" aims at bringing Bulgarian hazardous waste management in compliance with EU standards introducing the following eight inter-linked elements:

- The establishment of a national hazardous waste collection system

- The establishment of a number of local hazardous waste collecting and handling sites sub-centers)

- The establishment of a central incinerator designed and devoted for incineration of hazardous waste

- The establishment of hazardous waste treatment facilities to carry out refining of collected hazardous waste for subsequent re-use / re-cycling and / or to secure proper end-disposal at a devoted landfill of especially non-thermically degradable and not refinable hazardous waste

- The establishment of a central landfill area devoted for hazardous waste

- A laboratory equipped with adequate laboratory facilities to perform needed analysis for control of waste deliverances

- The establishment of a National Centre for Treatment of Hazardous Waste. This Center will manage and operate the above mentioned systems and facilities. All treatment facilities are expected to be located at the same geographical site (The Center area)

- In addition, the National Center for Treatment of Hazardous Waste will act as a focal point for dissemination of preventive measures in the whole country, e.g. training in and information on cleaner production, re-use / re-cycling etc. in order to introduce preventive measures within the industry, to minimize the amount of waste generated by industry and to secure proper utilization of resources. The Center will be responsible for the public information on hazardous waste issues as well.

It is to be noted that Bulgaria has signed the Basel Convention, and that the implementation of the proposed project is to be seen as the operational implementation of the convention together with the Bulgarian compliance to relevant EU directives for subsequent accession.

In 1996 the detailed study "A Hazardous Waste System Study and Institutional Building Project for Bulgaria" was prepared by ICF Kaiser International, USA, and POVVIK-EP, Bulgaria. However, no comprehensive feasibility and financial study on hazardous waste issues has been undertaken yet.

The establishment of a National Centre for Hazardous Waste represents a priority investment project according to the National Waste Management programme. It is expected that the development of a national hazardous waste management programme will benefit not only to the environment but give rise to financial and socio-economic benefits as well. In addition, such a programme is expected to facilitate privatization of government-owned industry.

The present Terms of Reference address technical assistance aimed at assisting with preparing an ISPA application for " Establishment of a National Hazardous Waste management centre " including all supporting documents to the normal standards of preparatory documents prepared for the EU Commission.

2. Objectives

The overall objective of the technical assistance covered by the present TOR is to prepare the project for implementation in accordance with international standards and EU requirements. The technical assistance will also provide help to the Bulgarian authorities in preparing an application for ISPA financial assistance, including help with completion of the application form and preparation of supporting documents, so as to meet the requirements of the ISPA Regulation.

In order to fulfil this overall objective of the assistance, the Consultant will fulfil the following sub-objectives:

Prepare a draft version of the main part of the ISPA application for final processing by the ISPA Task Force

Update/prepare all needed supporting documents for assessment of the project impact and readiness including a feasibility and financial study, design and technical description, public-tender / procurement documentation and definition of external technical and management supervision of project implementation.

3. Scope of work

The Consultant will undertake the following tasks:

Phase 1 of the project:

- 3.1. Technical feasibility study and economic and financial analyses;

Phase 2 of the project:

- 3.2. Design and technical specifications of the project, according to FIDIC Conditions of Contract for Design - Build and Turnkey
- 3.3. Public procurement documentation for the project
- 3.4. Scope of Work for Definition (TOR-preparation) of External Technical and Management Supervision of Project.
- 3.5. Preparation of draft version of an ISPA application;

To facilitate communication and co-ordination between the Ministry of Environment and Water and the Consultant (and his sub-consultants) during preparation of the project, a proper project management system and organization will be defined and established by MEW in corporation with the Consultant.

For each of these tasks, a number of activities to be covered are defined in the following.

Phase 1 of the project, including tasks in 3.1. and 3.2.

3.1. Technical feasibility study and economic and financial analyses

3.1.1. **Collection of infra-structural and operational data and project** definition

The Consultant will collect data about the present infrastructure situation in the study area. This includes infra-structural parameters as well as operating characteristics.

The Consultant will describe the project and project alternatives (extent and timing). The Consultant will define an appropriate "do-nothing" option against which the project alternatives will be analyzed.

It shall be specified that the Project is a part of a larger physical project with phased implementation. It shall also be specified how the scope of work for consultancy services shall cover the entire Project.

The state-of-affairs comprising the following infrastructure element and operating characteristics will be taken into account:

- Organisational set-up for collecting of hazardous waste data and for approval of application for hazardous waste handling (collection, transport, treatment and disposal)
- The existing system for hazardous waste management including sorting, collection, interim storage, reuse / recycling, treatment and disposal. The information gathered must be organized according to type of facility or plant and must contain data for capacities, waste categories and quantities handled and indicate localization of facilities and plants
- The existing hazardous waste tariff system for the present hazardous waste management solution
- The existing economic incentives applied to reduce the waste generation or to direct the waste streams to the preferred treatment or disposal option
- The existing Bulgarian legislation for hazardous waste and the conformity to the relevant EU directives and the Basel Convention.

3.1.2. **Regional Co-ordination**

The regional development plans and master plans within the relevant geographic areas, e.g. the local authorities (Municipalities, Regional Inspectorates) in question, shall be reviewed in order to verify if the master planning is followed for other projects of similar nature within the relevant geographic area in order to assure a balanced progress of implementation and thereby get maximum benefit of

the invested capital. The Consultant will prepare an overview of the relevant geographic area regarding other facilities, needs for action at other facilities, planned action at other facilities and financing sources and timing for such actions. This will ensure the project fits into an overall planning and that an appropriate master plan is in operation.

3.1.3. Hazardous Waste Study

Collection of general background data

In order to support the later development of prognosis of amounts and types of hazardous waste, the Consultant must gather background information on the economic situation and expected economic development. This part of the data collection will rely on existing documentation provided by the Ministry of Environment and Water from e.g. national statistics and existing reports, information etc. Based on these sources, the Consultant will derive scenarios for the likely future development in industrial material use, changing consumer habits/consumption of consumer goods and industrial production. Three scenarios will be prepared reflecting: Low growth; medium growth; and high growth.

Needs Assessment

The Consultant must conduct a need assessment:

- Hazardous waste flows relevant for the project categorized into groups according to the European Waste Catalogue

In addition, the Consultant must organize the hazardous waste into groups reflecting the possible alternative management solutions, like:

- waste minimization / cleaner production,
- re-use / re-covery,
- treatment (divided according to applied technology, like incineration, pyrolysis, chemical treatment etc.)
- disposal (landfills, secured long time storage)

The Consultant must in his assessment take into account that some waste streams may be treated on-site in the future.

- Geographical distribution of the waste flows (flows according to the management solutions)
- An assessment of potential geographical site(s) for the Center
- If needed the Consultant must arrange supplementary surveys to complement / update already available data as e.g. in "Hazardous Waste System Study and Institutional Building Project for Bulgaria" prepared by ICF Kaiser International, USA, and POVVIK-EP, Bulgaria, 1996.

Preparation of waste prognosis

Based on the collected waste data and the three development scenarios the Consultant must prepare three scenarios for the future hazardous waste generation.

3.1.4. Financial and economic analyses

Costing for projects

For ¦ each of the alternatives, reflecting the three scenarios, conceptual design (preliminary engineering) will be made if detailed design is not yet available. Based on these conceptual designs, precise cost estimates are prepared. This activity must be closely co-ordinated with the task on 3.4 Design and technical specifications.

The possibilities for timing of introduction of various measures are also included in the design through possible staging.

The costs should e.g. include construction costs, supervision costs, design costs, capital costs during construction, costs of environmental mitigation and training during project implementation and commissioning. The costs should furthermore be broken down as detailed in section 9 of the standard ISP A application form (Annex 1).

Further, the employment impact of the project will be assessed in terms of jobs created / lost in respectively construction phase and operation phase as detailed in section 12 of the standard ISPA application form (Annex 1).

Cost-benefit analyses of projects

Based on the costs of the projects, detailed cost-benefits assessments are prepared.

The benefits to be included in the analyses should comprise factors such as operational efficiency improvements e.g. reduced pollution risk and energy savings Also the possible improved health and safety in connection to especially proper handling of hazardous wastes should be taken into account and should form part of the cost-benefit assessment - as a minimum through a qualitative discussion of the issues.

In general, the assessments should be based on unit costs for plants, facilities and equipment parts adjusted to the local conditions.

For each type of benefit, the beneficiaries must be identified and the benefits must be quantified for different beneficiaries.

A standard Net Present Value criterion should be applied as measure of feasibility. Further, first year rates of return, internal rates of return and the cost/benefit ratio should be calculated to supplement the NPV criterion.

Sensitivity analyses are required. They should demonstrate the robustness of the proposed projects. Further, sensitivity analyses should be applied to investigate, if some projects are more sensitive towards changed assumptions etc. than other. Areas to be investigated are: Construction costs, waste quantities, interest rate, timing of investment etc.

In view of the difficulty of valuing environmental benefits, the European Commission may accept other forms of quantified analysis, such as cost-effectiveness analysis, where justified on a case by case basis. In cost-effectiveness analysis the objective is to demonstrate that the technical option chosen provides the most cost-effective solution to meeting the required environmental standards as specified, for example, in relevant EU directives. The consultants shall consider whether such an approach is appropriate in the case of this project.

Assessment of financial impact of projects

An assessment of the financial impact of undertaking the various projects are required. This includes preparation of a detailed cash flow analysis for the project in its operational stage.

For projects generating financial income, e.g. through user charges, the financial NPV and IRR should be calculated with and without ISP A assistance to the project.

The financial sustainability of the project shall be examined. The consultants shall determine if the projected income stream from user charges is sufficient to cover the operating and maintenance costs of the project over its economic lifetime.

The purpose of the financial analysis is to demonstrate the long-term sustainability of the project, and to help determine the appropriate contribution of grant aid to capital costs in the light of different assumptions about charges or other key variables.

3.1.5. **Reporting for feasibility and financial analyses**

A separate report presenting the derived results is required. The report must comprise technical - documentation for the analyses leading to the recommendations enabling the EU Commission to fully understand the technical aspects, and economic and financial impact of the project. The report should clearly present all assumptions and the method lying behind the analyses.

3.1.6. Discussion and selection by MoEW of the most feasible variant

At this stage the MoEW would review and select the most feasible variant which will proceed to Phase 2 of the project on the basis of the technical aspects, economic and financial criteria, derived from the implementation of the above tasks and the performance of the Environmental Impact Assessment.

*Phase 2 of the project including tasks **from** 3.2.. 3.3., 3.4. and 3.5.:*

3.2. Design and technical specifications

The procurement documentation shall be based on FIDIC's "Orange book" The Conditions of Contracts for Design and Built (Turnkey Contracts).

3.2.1. Preparation of design and technical specifications

If the design process leads to changes in cost estimates for construction and operation, the feasibility analyses prepared in the task on 3.1. - Feasibility study and financial analysis should be updated. This includes changes both due to timing e.g. a longer construction period, and in the level of the costs e.g. a lower construction cost estimate.

The Consultant will have the following principal duties and responsibilities for the services under the detailed design of the project:

Review the feasibility study and suggest changes as desirable

Review the results of previous investigations and surveys and make recommendations for additional investigations, if needed

Make topographic surveys and prepare maps

Conduct the necessary hydrogeological investigations

Perform necessary horizontal and vertical surveys for public access roads

Establish the basic data for the design of collection, transport, treatment and disposal facilities

Establish the detailed design criteria based on the review of the feasibility study and other reports. The design criteria shall include optimum safety of structures and installations

Prepare detailed design, including technical specifications

Prepare a design report containing design assumptions, criteria, calculations, reference to standards

Prepare reproductible detailed design drawings in suitable scales

Prepare tender documents for civil works and for procurement of equipment

Prepare a detailed quantity and cost estimate for the project

Prepare unit price cost estimates for each supply/construction contract divide into local and foreign currency

Prepare a program of work, construction schedule, cash flow and utility relocation plan

Prepare detailed specifications for every item of the project.

3.2.2. **Reporting for design and preparation of technical specifications**

The design shall be reported in a final report, which shall include the basis for design of each element of the works, calculations supporting the final designs and references to standards adopted.

The specifications will form part of the tender documents.

3.3. **Public procurement documentation for the project**

3.3.1. **Preparation of Tender Dossier**

The preparation of the tender dossier shall follow the FIDIC procedures according to the Conditions of Contracts for Design, Build and Turnkey, First Edition 1995 ("The Orange Book") and the relevant EU Directives on public procurement including 93/36, 93-38 and 93/38. The basis for the works contract shall be one or more of the following FIDIC Conditions of Contract:

- Conditions of Contracts for Design, Build and Turnkey, First Edition 1995 ("The Orange Book")
- Conditions of Contract for Civil Engineering Works, Fourth Edition, 1987, with amendments in 1992 ("The Red Book").
- Conditions of Contract for Mechanical and Electrical works, Third Edition 1987 reprinted with editional amendments ("The Yellow Book")

If the relevant EU directives are not fully complied with, this must be clearly stated and explained in section 13.1 in the standard ISPA application form.

The content of the legal part of the tender documents shall be:

Notice of Invitation to tender;
Instructions to Tenderers;
Form of Tender, Appendix to tender;
Form of Tender Security;
Questionnaire;
Form of Contract;
Conditions of Contract, Part I: General Conditions of Contract;
Conditions of Contract, Part II: Conditions of Particular Application;
Form of Performance Security;
Form of Advance Payment Security (if applicable);
Form of Final Report; and
Form of Retention Money Security

The content of the technical part shall be:

Technical Specifications;
Bill of Quantities;
Drawings; and Other
relevant documents

3.3.2. Reporting for public procurement documentation

The reporting shall be separate for each phase:
The preparation of the Tender Dossier will result in a complete set of Tender Documents

3.4. Scope of Work for Definition of External Technical and Management Supervision of Project.

The Consultant shall assist the ISPA Task Force during preparation of Terms of References for scope of work of the external technical and management supervision of the project, including but not limited to the following:

- Prepare of guidelines for setting up the Project Implementation Unit (PIU) responsible for the technical and economical supervision of the project implementation
- Preparation of general site supervision procedure for civil works, mechanical and electrical works
- Preparation of a QA manual, including QA procedures for the technical site supervision
- Preparation of guidelines for accounting systems and financial control systems to be used by PIU
- Preparation of physical and financial Progress Reports
- Preparation of guidelines and standard forms for "Inspection reports", "Test of Completion Certificates" and "Taking Over Certificates"

3.5. Preparation of draft version of ISPA application form

The Consultant will prepare a draft version of the ISPA application form for the project in full accordance-with the standard application form (Annex 1) including:

The application form, including all required information (detailed time schedule, financial and economic analysis, cost-benefit analysis, etc.);

short summaries of technical documentation needed to facilitate the assessment.

The following paragraphs and Annexes of the draft ISPA application are outside the scope of work of the Consultant:

- Paragraphs 1, 2, 3, 4, 18 and 19; and
- Paragraphs relating to administrative matters and arrangements for project management, monitoring and publicity.

ISPA Task Force will cover the above specific issues.

In the preparation of the draft ISPA application the Consultant will work closely together with the ISPA Task Force and with the Ministry of Environment and Water in Bulgaria.

The ISPA Task Force will further process this draft application before being forwarded to the EU Commission.

4. Expected outputs and time schedule

The Minister of Environment and Water will appoint a Steering Committee, including representatives from the Ministry of Environment and Water, Ministry of Industry, Ministry of Health and Ministry of Regional Development and Public Works.

During the implementation of this project, bi-monthly progress reports will be submitted to (one copy each):

- European Commission, DG Regional Policy, art. Mr. Colin Walker
- CFCU - Ministry of Finance, att. Mr Stefan Sotirov, Director
- EC Delegation in Bulgaria, att. Mrs. Teodora Mircheva;
- Ministry of Environment and Water, attention to Deputy Minister Neno Dimov, and
- ISPA Task Force, att. Mrs. Vesselina Lyubenova

The progress reports will address the following issues:

Progress on individual tasks and expected finalization of individual task as well as whole assignment;

produced reports with short summaries of all task reports/output;

any delays encountered/foreseen;

any other problems encountered/foreseen and suggestions for overcoming these problems;

All task reports and progress reports will be produced in English and the Final report should be presented both in English and Bulgarian to the Ministry of Environment and Water. Each progress report will be approved by the Steering Committee and the Final report will be preliminary approved also by the Steering Committee and a representative of the selected municipality where will be located the National Centre. The official approval will be done by the Supreme Expert Council of the MoEW.

The assistance will start not later than May 2000 and will be finalized within 9 months. All task-reports must be delivered in draft version one month prior to the date of completion. The involved

parties will provide comments within two weeks, and following this a final version of the task report must be delivered no later than the date of completion.

Duration of the project: 9 months

5. **Staffing and budget Estimated budget: 500,000 EUR.**

An approximate allocation of man-months is presented in the table below.

Table 1: Indicative budget *(up to Constructors award of contract)*

Activity	**Man-months**
3.1. Technical feasibility study and economic and financial analysis;	40.0
3.2. Design and technical specifications of the project	42.0
3.3. Public procurement documentation for the project	18.0
3.4. Preparation of ToR for External Technical and Management Supervision of Project	2.0
3.5. Preparation of draft version of ISPA application	3.0
Total	**105.0**

The Consultant is to propose the staff categories needed to undertake the assignment.

The expertise of the Consultants staff to be involved under the listed activities includes but is not limited to:

- Team leader, Hazardous Waste Management expert
- Hazardous Waste Disposal expert (Landfill areas)
- Hazardous Waste Incineration expert
- Hazardous Waste Treatment expert (Chemical Engineer)
- FIDIC Contractual expert
- Construction Engineers

- Mechanical and Electrical Engineers
- Financial experts.

All experts should have at least 15 years of experience in similar projects with command of English language, both written and oral.

The Consultant is encouraged to utilize the local resource a local sub-consultants or experts in the field of waste management.

The Consultant will include in their budget under reimbursable an amount for office accommodation.

6. Monitoring and evaluation of the project

The monitoring of the implementation of the project will be done through the Steering Committee and representatives of the EC Delegation in Sofia. The final evaluation will be done following the decision of the Supreme Expert Council of the MoEW, by the Steering Committee and the representatives of the EC Delegation in Sofia.

7. Assumptions and risks

- Smooth cooperation with other governmental institutions in Bulgaria
- Sufficient support from the public
- Completion of tasks according to time schedule and budget
- Public acceptance of the pilot application of hazardous waste management in Bulgaria
- Coordination of the implementation of the present project with the carrying out of the EIA, which will be done in parallel.
- Delays in the EIA procedure will impose extension of the duration of the present project.

8. Available reports and information

A number of relevant reports and notes have already been prepared. These include the following:

- A Hazardous Waste System Study and Institutional Building Project for Bulgaria" prepared by ICF Kaiser International, USA, and POVVIK-EP, Bulgaria. 1996.
- Reduction of the Harmful Impact of Waste upon the Environment Act. Government of Bulgaria. 1997.

. Environmental Strategy for ISPA. Ministry of Environment and Water. Republic of Bulgaria. First Draft. 12 February 1999. . National development p,an until the year 2006. Sector program "Environment. Republic of Bulgaria. April 1999.

The Ministry of Environment, and Water will assure the Consultant has full access to the above mentioned reports.