PHARE 2002

STANDARD SUMMARY PROJECT FICHE

1. Basic Information

1.1 Desiree Number: RO-2002/000-586.04.08

1.2 Title: Assistance to the energy sector: improvement of energy efficiency, electricity internal market and development of Trans European energy networks

1.3 Sector: IN – Infrastructure (Energy, Transport, Telecom)

1.4 Twinning Component: N/A

1.5 Location: Romania

2. Objectives

2.1 Overall objectives

Improved progress towards harmonisation with the energy sector Acquis (including improving the effectiveness of energy markets and energy efficiency), and development of Trans European energy networks.

2.2 Project purpose

- Improving energy efficiency and compliance with the energy efficiency Acquis:
  - Institution building at the local level.
  - Operation of a hot water boiler testing laboratory to comply with the energy efficiency Acquis.
- Further development and consolidation of the electricity market.
- Development of Trans European energy networks through the development of a project to construct an oil transit pipeline from Constanta (Romania) to Omisalj (Croatia).

2.3 Accession partnership

NPAA 2001 – short term priorities: Growth of efficiency for electricity and heat generation and distribution.
2001 AP – short term priorities:

- Develop and implement an energy strategy in line with EU energy policy objectives. In addition to the main energy sources, the strategy should also focus on improved energy efficiency, in particular in the sector of heating, and the use of renewable energy.

- Advance the alignment process in the internal energy market (electricity and gas), including preparation for continuing the progressive opening of the market.

3. Description

3.1 Background and Justification

Sub Project 1: Supporting energy efficiency at the local level

A lesson that has clearly emerged in the EU Member States and also in Central and Eastern Europe is that national action to improve energy efficiency must also be accompanied by regional and local actions. Cities or sub-regions are the other scale at which energy efficiency actions can be effectively implemented, and at which energy efficiency institutions can make an important impact on energy use at the local level. City or town or sub-regional authorities have many influences on energy use through their ownership of district heating networks; their management of the buildings of the municipality, and funding of municipal institutions – schools, hospitals, old peoples homes, sports centres; and the operation and planning of local transport.

Local energy agencies work to promote energy efficiency in housing; small and medium sized businesses; local development and planning; transport planning; local energy supply (including the use of local renewable energy or waste energy resources); and the local government's buildings and infrastructure. A Local energy efficiency agency (whose creation has been supported by the SAVE Programme, for which Romania is eligible) has been set up in Iasi, and the proposals for Ploiesti and Harghita (region) are on the reserve list for funding. Such local energy efficiency agencies are small in scale with an average staffing level of 2-3 per agency. However, in order to support further the development and strengthening of these local energy efficiency agencies it is proposed to support the activities of these local agencies.

The purpose of the project is to provide complementary support to these agencies in order to help the agencies to develop services – energy audits or energy project development for example which will enable them to become sustainable when the core SAVE funding ends. The project would provide training, technical assistance, information and limited equipment to the agencies to develop these services which meet the needs of local energy users. The agencies will not receive direct funding from Phare, since the SAVE programme is already supporting part of their operating costs.

In addition the national energy efficiency agency, ARCE, has regional branches in the following cities: Cluj, Timisoara, Suceava, Iasi, Galati, Constanta, Bucharest, Brasov. These branches have 2-3 staff each (though Suceava and Galati have only 1 person each). The objective of these local branches is to provide 'outreach' to (in the past) industrial energy users, and

increasingly also to building owners to promote energy efficiency. They provide a link between the national agency and major energy users. However these local branches suffer from two major problems. Firstly the number of local branches has been cut by half in the last year due to budget cuts, leaving each agency to cover an area twice as wide as previously, thus the agencies are spread thinly. Secondly they lack manpower, equipment, and training.

Concerning the local ARCE branches the purpose of the project would be to provide institutional strengthening through the provision of necessary equipment (technical and office equipment), training, and information resources.

These national agencies have a co-operative relationship with the local agencies, and the two are complementary. Local agencies are established to promote energy efficiency in that particular city, while the ARCE branches are responsible for promoting energy efficiency in a much wider area – up to 8 counties per branch. As in the Member States the local energy efficiency agencies can support the work of the ARCE branches.

Sub-project 2: Harmonisation with energy efficiency Acquis.

In order to implement the requirements of Directive 92/42/ EC on efficiency requirements for new hot water boilers fired with liquid or gaseous fuels, a 'notified body' will be established in order to provide the facilities to test boilers to ensure that boilers which fall within the terms of the Directive (from 4 kW to 400 kW) meet the efficiency standards set out in the Directive. This Directive has been transposed to Romanian Law (through Government Decision 270 of 21.03.2002) , and energy efficiency labelling (as foreseen under the Directive) for such boilers will be introduced. Testing of the minimum efficiency standards in order to allow for this labelling requires investment in the testing equipment, and the preparation of the laboratory (including, a/o, fire proofing, ventilation equipment).

The notified body to be developed will be the National Authority for the Control and Approval of Boilers (ISCIR). This organisation has a long experience in testing and approving boilers and burners. The Authority has approximately 380 staff (including 15 regional branches)

In addition, a recent government Decision has modified the responsibilities of ISCIR in relation to safety and efficiency testing of boilers, by including market surveillance and inspection of small household boilers to their responsibilities. Previously ISCIR had inspection responsibilities only for industrial boilers, and in order to prepare ISCIR to take on this new responsibility, a technical assistance component will be required.

Sub-project 3: Consolidation of the Electricity Commercial Market Operator

The commercial market operator which has been established as part of the overall restructuring of the Romanian power market is in the process of developing the market system for the physical power exchange market, with the necessary IT investment being funded under RO0005.01 and a financial exchange, for which initial funding is to be provided under RO0107.10.

However, experience gained in the last year in developing and operating a power market, together with a clearer conception of the path of future development of the Romanian power market, have indicated the need for further assistance to consolidate the electricity commercial market operator. As part of the preparation for the RO0005.01 funded project consultants (funded under Phare project RO9805.01-06) have concluded that in addition to the support already given there are important needs for additional hardware and software and a related simulation system for training purposes for the introduction and operation of the financial market power market. This financial power market will serve both the internal Romanian power market, but also will assist in the development of a regional power market.

In addition there is a need for the development and improvement of demand forecasting (which the Phare funded TA has identified as a key weakness at present). The development of medium and long-term electricity forecasts is an essential issue in the substantiation of portfolio contracts, seasonal operation scheduling, and general market surveillance. An improvement in the quality of medium and long term demand forecasts will benefit both the operation of the market, and more generally the development of energy strategy (the responsibility of the Ministry of Industry and Resources).

This need has only emerged in recent months, based on the experience gained with the actual operation of the market, and a much clearer picture of the areas of weakness where difficulties are being, or are likely to be encountered. Such a picture was not clear one year ago, because of the early stage of development of the market. This explains why the proposed assistance was not included under RO0107.10. Moreover, the timely implementation of the previous Phare project confirms the usefulness of such an additional assistance.

Sub- project 4: Technical and economic study for oil transit pipeline

The proposed construction of an oil transit pipeline from Constanta in Romania to the Croatian port of Omisalj is fully in line with the objectives of the Inogate Programme, which is to help to facilitate investment in oil and gas transmission networks from East to West, and to establish the appropriate institutional framework for such investments.

Based on the output of the Phare Project RO9805.01-01-02 (Development of the Objectives of the Inogate Programme) a Protocol to the Inogate Umbrella Agreement on the establishment of a interstate oil transport system from Constanta (Romania) to Omisalj (Croatia) was prepared and initialled by the three governments concerned (Romania, the Federal Republic of Yugoslavia, and Croatia). This Protocol establishes the institutional background and

provides a framework for the development of the project through the establishment of an Interstate Committee and Emergency Committee, the nomination of Competent Entities (in the case of Romania this is the Ministry of Industry and Resources) and their activities. The Protocol also includes the commitment to a uniform legal environment for the project together with the procedures for the settlement of disputes. The Protocol is an important building block to towards the development of the pipeline project.

In addition the three parties have signed a Memorandum of Co-operation in Belgrade in June 2001 which established a technical working group. This Memorandum also established the need for a detailed technical and economic study to be carried out. The proposed project would undertake this study for the section of the oil pipeline project (and associated port facilities) in Romania.

Although Phare is not expected to finance the investment project at a later stage the proposed contribution will guarantee the realisation of the necessary preparatory works and will substantially contribute to attracting potential investors.

As far as the Federal Republic of Yugoslavia and Croatia are concerned, similar studies are expected to be made under the CARDs Regional Programme. In particular, a Regional Study on oil and gas networks in the Balkans should be launched by mid 2002 (estimated budget: € 0.7 million), and its finalisation is expected for mid 2003. This general study should confirm the interest of the Constanta – Omisalj project, and its results will serve as a good basis for the preparation of the Romanian technical and economic study. Following this regional study, a more detailed study on the Croatian and Yugoslavian sections Constanta – Omisalj pipeline might be proposed under the CARDs Programme.

Sub-project 5: Technical Assistance in Programme Implementation

The proposed programme involves close collaboration with the energy industry and other actors, and close monitoring to ensure that the objectives of the programme are met. For this reason the implementing authority, the Ministry of Industry and Resources will require technical assistance to implement and monitor the programme.

3.2 Linked activities

Phare has been providing policy advice for several years, and co-operating with USAID, the World Bank, and the EBRD in developing the conditions for IFI investment in the energy sector.

RO9805.01 – 4.6 MEUR	
Privatisation in the electricity distribution sector	Implementation
Assistance in the development of secondary legislation for the regulation of electricity and heat markets	Completed
Assistance for the establishment of a gas regulatory authority	Completed
Technical assistance to the electricity commercial market operator	Completed
Phare (Bangkok facility) financed through EBRD	
Preparation of a business plan for the National Electricity Company (organised as a transport-dispatch company)	Completed
RO0005.01.01.02 – 28.9 MEUR	
Further technical assistance to the Electricity and Heat Regulator	Preparation
Further development of secondary gas sector regulator and assistance to the gas regulatory authority	Preparation
Further electricity distribution privatisation	Preparation
Gas distribution privatisation	Preparation
TA for programme implementation	Implementation
Transmission Grid Investment Project (jointly funded with EBRD and EIB)	Preparation
RO0107.10 - 2.8 MEUR	
1. Strengthening of the electricity commercial operator	Preparation
2. Development of competitive gas markets	Preparation
3. Harmonisation with oil stockpiling and crisis management rules Acquis	Preparation
4. Assistance to the restructuring of Termoelectrica	Preparation
RO0108.04 - 5 M EUR	
Energy efficiency improvement in district heated housing	Preparation

3.3 Results

- Improvement of energy efficiency at the local level through strengthened and sustainable local energy efficiency institutions.
- Progress towards the harmonisation of Romanian energy efficiency norms and standards with the Acquis (Directive 92/42/EC).
- Improved functioning of the power market.
- Completed technical and economic study (as required for financing institutions) for the construction of the Constanta to Omisalj oil transit pipeline in Romania.
- Timely implementation of the sub-projects within the programme.

3.4 Activities:

Sub Project 1: Supporting energy efficiency at the local level

In order to support further the development and strengthening of local energy efficiency agencies it is proposed to support the activities of these local

agencies in order to ensure that they are fully sustainable. This would be achieved through a knowledge transfer from the Member States (from either consultants or from existing 'SAVE' local energy efficiency agencies, who would compete on an equal basis) to the local agencies in Romania, and the local branches of ARCE.

Training actions to be undertaken would comprise technical training, awareness raising, and training in energy efficiency project development. This would involve providing technical assistance to the local energy efficiency agencies to help to develop information materials; to develop the skills necessary to provide energy audits and to carry out such audits in the buildings and facilities of the cities concerned; and to provide assistance in the development of 'bankable' energy efficiency and local energy development projects.

In addition limited logistical support will be given to ensure that the necessary equipment (e.g. energy auditing equipment) is available to the local energy efficiency agencies.

Activities: Technical assistance will be provided which will undertake training for local energy efficiency agencies and for the regional branches of ARCE in (a) energy auditing and energy efficiency technologies; (b) information dissemination and awareness raising; (c) development of 'bankable' proposals for energy efficiency projects. In addition limited support will be given for the procurement of necessary equipment for the local energy efficiency agencies.

Each Save agency (existing or under creation) and each branch of ARCE will benefit from approximately the same level of technical assistance.

<u>Sub-project 2: Harmonisation with energy efficiency Acquis.</u>

The proposed project includes both investment in testing equipment (equipping of the testing laboratory to allow the National Authority for the Control and Approval of Boilers (ISCIR) to operate as the 'notified body' under the terms of the Directive 92/42). The activities to be undertaken for the investment component comprise tendering, procurement, installation, testing of the laboratory equipment and training for the people of the laboratory (around 12 persons). The equipment to be procured includes gas and NOx analysers, heat exchangers, and other testing equipment. Funding is also required for the preparation of the laboratory including gas supply, fire proofing, and installation of ventilation equipment.

The equipment will be installed in the premises of ISCIR, and will be co-financed by ISCIR. The responsibility for verifying and monitoring market compliance with the directive is the sole responsibility of the National Authority for Control and Approval of Boilers (ISCIR).

The institution building component will provide technical assistance to ISCIR in the organisation and development of their new responsibility for market surveillance and inspection of small (household level) boilers.

Activities: The principal activity is the procurement, installation and commissioning of laboratory equipment for boiler efficiency testing, together with the preparation of the laboratory (electrical works, fire proofing). In addition technical assistance will be provided to ISCIR in the development of their inspection and market surveillance functions for small boilers.

Sub-project 3: Consolidation of the Electricity Commercial Market Operator

The proposed project would provide investment in hardware and software, and related implementation technical assistance and training in order to consolidate the electricity commercial market operator in three key areas:

(a) The development and implementation of the administration of a financial power market. This will require investment in hardware and communication equipment, including, a/o: workstations, databases, data and information exchange links, user interfaces, and Ethernet, Extranet, and Internet switches, and routers. Software applications for the data processing, exchange and archiving operations are required for the operation of the financial power market administration.

(b) A simulation system for the financial power market (both for the Romanian internal market for regional electricity market transactions) is required to reproduce, on a smaller scale (for training purposes) the financial market operations performed by the full financial market system. In addition training will be required for OPCOM staff in the operation and functioning of this simulation training system.

(c) In order to improve the market surveillance, portfolio contract surveillance, and seasonal operation and scheduling, a medium and long-term demand-forecasting module is required. This will involve technical assistance in analysis of the market structure and design of the forecasting module, system acquisition and commissioning (hardware and software) and staff training.

Activities: Investment is required in IT and communication system hardware and software for the introduction of a financial power exchange, together with investment in a simulation system of the financial power market for training purposes. Investment is also required for the acquisition of a medium and long term electricity demand forecasting module In addition technical assistance is required to provide training and assistance in the introduction and operation of the investment components.

Sub- project 4: Technical and economic study for oil transit pipeline

The envisaged investment project consists of strengthening the capacity for oil transport from the Constanta oil terminal to the oil terminal at Omisalj in Croatia, together with the construction of approximately 425 km of new pipeline from Pitesti in Romania to Pancevo in FR Yugoslavia. The SEEP transit route would use existing pipelines (reinforced and expanded as

required) from the Constanta port to Pitesti, and existing pipelines (also modernised and expanded as required) in FR Yugoslavia and Croatia, but reversing the present design flow from the Adriatic to Pancevo to an East to West direction.

The purpose of this sub-project is to undertake a technical and economic feasibility study for the proposed oil transit pipeline from Constanta to Omisalj, on the territory of Romania.

The proposed study would cover (as foreseen in the Memorandum of Co-operation signed by the three countries involved, prepared under the framework of the Inogate Programme) the technical, financial, institutional, legal, commercial, environmental parameters in detail. This will prepare the project for full commercial financing and development, and will be the basis for attracting private or institutional investors into the project. The proposed study will not cover the full technical design for the investment project, since such a study would cost far more, but will identify the proposed pipeline route in Romania (among the three options which have been identified) and will prepare a preliminary project execution plan.

The co-ordination of this study with the two other countries concerned, the Federal Republic of Yugoslavia, and Croatia, will be ensured by the implementing authority, the Ministry of Industry and Resources through the Interstate Committee which has been established and through their oversight of the work of the legal and technical working groups which have been established by the three countries. The selected company will liaise with the two partner countries only for the technical aspects of the project.

Draft Terms of References for the study are given under Annex 4.

Activities: The project will comprise the provision of technical assistance to prepare a technical and economic study for the construction of the proposed oil transit pipeline on the Romanian territory (with limited analysis of the commercial and financial issues relating to the pipeline on the territory of FR Yugoslavia and Croatia). This technical and economic study will include examination of the technical, financial, institutional and legal, commercial, and the environmental parameters of the proposed pipeline.

Sub-project 5: Technical Assistance in Programme Implementation

This sub-project will provide technical assistance to the Ministry of Industry and Resources to prepare and implement the institution building and investment sub-projects within this programme.

Activities: Technical assistance will be provided to the Ministry of Industry and Resources in order to assist the Ministry (as Implementing Authority for this programme) to prepare Terms of Reference, and to monitor implement the sub-projects within this programme.

4. Institutional Framework

Sub Project 1: Supporting energy efficiency at the local level

The institutions involved in the implementation of this project are:

(i) The Ministry of Industry and Resources, with overall responsibility for the development of energy strategy (including energy efficiency). It will prepare the ToR for this component with the assistance provided under sub-project 5, and ensure the proper implementation of this centrally managed assistance contract.

(ii) Local energy efficiency agencies and the Romanian Energy Conservation Agency (ARCE) at both the national and territorial branch level will be the beneficiary of this assistance and will become the owner of the proposed equipment.

Sub-project 2: Harmonisation with energy efficiency Acquis.

The institutions involved in the implementation of this project are:

(i) The Ministry of Industry and Resources, with overall responsibility for the development of energy strategy (including energy efficiency)

(ii) National Authority for Control and Approval of Boilers (ISCIR) which is the beneficiary of the project, and which will become the notified body. ISCIR also has responsibility for monitoring market technical compliance with the relevant energy efficiency standards (relating to boiler efficiency).

Technical specifications will be prepared by ISCIR (investment component) and ToR for the institution building component will be prepared by the Ministry of Industry and Resources with the assistance of ISCIR.

Sub-project 3: Consolidation of the electricity commercial market operator.

The institutions involved in the implementation of this project are:

(i) The Ministry of Industry and Resources which is responsible for overseeing the restructuring of the energy sector, and which exercises the right of owner over the electricity industry; and

(ii) The commercial electricity market operator OPCOM S.A will be the beneficiary of the assistance, and will become the owner and operator of the investment component.

Terms of Reference will be prepared by the Ministry of Industry and Resources with the assistance of OPCOM.

Sub- project 4: Technical and economic study for oil transit pipeline

The institutions involved in the implementation of this project are:

(i) The Ministry of Industry and Resources, which is responsible for the development and implementation of energy policy and will be the beneficiary of this project. The Ministry of Industry and Resources is the authorised entity representing the Romanian Government on the

Interstate Committee established to ensure the interstate co-ordination of the SEEP project.

(ii) The oil companies concerned in Romania (Petrom, Conpet, and the Constanta Oil Terminal) who jointly make up the Romanian membership of the technical working group of the Interstate Committee.

Sub-project 5: Technical Assistance in Programme Implementation

The institution involved in the implementation of this project is the Ministry of Industry and Resources, as the implementing authority for this overall project. It will prepare the ToR for this sub-project

5. Detailed budget

(in MEUR)

COMPONENT	Phare support		Total Phare (=I+IB)	National co-financing*	IFI	TOTAL
	Investment Support	Institution Building				
1: Supporting energy efficiency at the local level		0.90	0.90			0.90
2: Harmonisation with energy efficiency Acquis	1.20	0.25	1.45	0.40		1.85
3. Consolidation of the electricity commercial market operator	1.50	1.00	2.50	0.50		3.00
4: Technical and economic study for oil transit pipeline		2.10	2.10			2.10
5. Technical assistance in programme implementation		0.30	0.30			0.30
TOTAL	2.70	4.55	7.25	0.90		8.15

(*) co-financing will be provided by ISCIR for sub-project 2 and by OPCOM for sub-project 3

6. Implementation Arrangements

6.1 Implementing Agency

The Implementing Agency is the Central Finance and Contracts Unit (CFCU) within the Ministry of Public Finances, which retains overall responsibility for the implementation of the project (preparation of tender documents, organisation of clarification meetings, preparation of evaluation criteria, bids evaluation, signature of contracts, authorisation and payments of invoices).

The Implementing Authority is the Ministry of Industry and Resources, which is responsible to the Implementing Agency for the preparation of Terms of

Reference and participation in the evaluation process, and the operational management of the project. The Ministry of Industry and Resources will be assisted by external assistance (sub-project 5).

6.2 Non-standard aspects

There are no 'non-standard aspects'. The Practical Guide to Phare, Ispa, and Sapard contract procedures will be strictly followed.

6.3 Contracts

Sub Project 1: Supporting energy efficiency at the local level

This sub-project will be implemented through one service contract (institution building), which will also include limited supply of equipment. According to the PRAG, this sub-project will be tendered through the restricted tender procedure. The "advanced" SAVE agencies will be invited to tender, and they will have to compete with private consulting companies.

Sub-Project 2: Harmonisation with the energy efficiency Acquis

This sub-project will be implemented through two supply contracts (investment) and one service contract (institution building). One supply contract will be Phare funded, and the second will be financed by the local contribution from beneficiary own funds (ISCIR). According to the PRAG, the service contract will be implemented through the restricted tender procedure.

Sub-Project 3: Consolidation of the electricity commercial market operator.

This sub-project will be implemented through three contracts: two supplies contracts (investment) and one service contract (institution building). One supply contract will be financed by Phare and the second will be financed by beneficiary own funds (OPCOM). According to the PRAG, the service contract will be implemented through the restricted tender procedure.

Sub-Project 4: Technical and economic study for oil transit pipeline

This sub-project will be implemented through one service contract (institution building). According to the PRAG, this sub-project will be tendered through the restricted tender procedure.

Sub-project 5: Technical Assistance in Programme Implementation

This sub-project will be implemented through one service contract (institution building). According to the PRAG, this sub-project will be tendered through the restricted tender procedure.

7. Implementation Schedule

COMPONENT	Start of tendering	Start of project activities	Completion
1: Supporting energy efficiency at the local level	May 2003	November 2003	January 2005
2. Harmonisation with the energy efficiency Acquis - IB component	March 2003	September 2003	April 2004
Investment component	July 2003	October 2003	June 2004
3. Full Development of an operational financial exchange for the power market (IB component)	March 2003	September 2003	March 2005
Investment component	April 2003	October 2003	April 2004
4: Technical and economic study for oil transit pipeline	April 2003	October 2003	March 2006
5. Technical assistance in programme implementation	January 2003	July 2003	December 2004

Considering the envisaged timeframe foreseen for component 4, a two-year disbursement period (i.e. until 30/11/2006) will be necessary for that project. The explanation for this long implementation period is that the definition and agreement on the technical, financial, institutional, legal, commercial, and environmental parameters for an oil pipeline project (and associated port facilities) that crosses several countries is unlikely to be achieved within one year.

8. Equal Opportunity

Equal opportunity for men and women to participate in all the components of the project will be ensured. The Implementing Authority will develop parameters to monitor the ongoing equal opportunity to participate in the projects, and where unequal opportunity for participation is observed, will take necessary and appropriate actions.

9. Environment

No adverse environmental effects are foreseen. The investment component of sub-project 2 is the equipment to be used for testing boilers to ensure their compliance with the minimum efficiency standards as set out in the requirements of Directive 92/42/ EC. Since the objective of this Directive is to improve the energy efficiency level of small boilers, the project will contribute

towards such a result in Romania, and hence consequently reduce the air pollution caused by the burning of gaseous fuels in such boilers.

The investment component of sub-project 3 is hardware and software for the operation of a financial power exchange, which has the objective of improving the market based efficiency of the Romanian power market. No direct environmental effects are related to this investment.

Sub-project 4 (economic, technical and environmental study of oil transit pipeline) includes a preliminary environmental assessment of the proposed pipeline (and related oil terminal investments) project which should recommend measures to mitigate any negative environmental effects of the pipeline, and which should set a framework for the environmentally sound and sustainable development of the project.

10. Conditionality and sequencing

- ISCIR and OPCOM will provide the necessary co-financing for sub-projects 2 and 3
- ARCE and the SAVE Agencies will support the operating and maintenance costs of the equipment that will be provided under sub-project 1.
- ISCIR will support the operating and maintenance costs of the equipment that will be provided under sub-project 2.
- OPCOM will support the operating and maintenance costs of the equipment that will be provided under sub-project 3.

ANNEXES TO THE PROJECT FICHE

1. Logical Framework matrix

2. Detailed implementation chart

3. Contracting and disbursement schedule by quarter

4. Draft ToR for sub-project 4

Annex 1 : Logframe matrix for project: Assistance to the energy sector: improvement of energy efficiency, electricity internal market and development of Trans European energy networks		Contracting period expires: 30/11/ 2004 Total budget : 8.15 MEUR	Disbursement period expires : Phare budget : 7.25 MEUR
Overall objectives	**Indicators of Achievement**	**Sources of Information**	
• Improved progress in harmonisation with the energy sector Acquis • Development of Trans European Networks	• Improved energy efficiency • Improved functioning of the power market • Progress in the funding of the oil transit pipeline from Constanta (Romania) to Omisalj (Croatia)	• Commission regular report • Ministry of Industry and Resources	
Project purpose	**Indicators of Achievements**	**Sources of Information**	**Assumptions**

• Improving energy efficiency and compliance with the energy efficiency Acquis:
  • Institution building at the local level.
  • Operation of a small boiler testing laboratory to comply with the energy efficiency Acquis.
• Further development and consolidation of the electricity market.
• Development of Trans European energy networks through the development of a project to construct an oil transit pipeline from Constanta
	• Continued operation of local energy efficiency agencies after the ending of SAVE Programme support at end 2003.
	• Accreditation of ISCIR as a notified body for the implementation of Directive 92/42/ EC capable of testing boiler efficiency, by May 2004..
	• Operational physical and financial wholesale power markets in Romania
	• IFI/commercial bank consideration of funding for the
		• ARCE,
		• Ministry of Industry and Resources
		• Certificate of accreditation as a notified body
		• Ministry of Industry and Resources
		• Commission regular report
		• Ministry of Industry and Resources
		• Ministry of Industry and Resources
			• Co-operation of local authorities..
			• Achievement of the 'Transmission grid investment project' co-financed by Phare RO 0005.01-06
			• Commitment to the continued market based reform of the power sector
			• Co-ordination between the three countries concerned.

(Romania) to Omisalj (Croatia).	construction of the Constanta - Omisalj pipeline.	• Commission regular report	• Funding for the feasibility study in Serbia and Croatia • Industry commitment to the project.

Results	Indicators of Achievement	Sources of Information	Assumptions
Sub-project 1 Supporting energy efficiency at the local level. • Improvement in energy efficiency at the local level • Sustainable local energy efficiency agencies (after SAVE programme funding ends).	• Continued operation of the local energy efficiency agencies after SAVE funding ends at end 2003. • Local funding for energy efficiency agencies.	• Reporting of energy efficiency agencies • ARCE	• Support of local authorities • Support of local industry and energy suppliers
Sub-project 2. Harmonisation with the energy efficiency Acquis • Accreditation of notified body for the testing of small boilers in conformity with Directive 92/42/EC.	• Accreditation certificate	• Commission regular reports • Ministry of Industry and Resources	• Transposition of Directive 92/42/ EC into Romanian Law
Sub-project 3. Consolidation of the electricity commercial market operator • Functioning of the power market in line with design and regulatory requirements.	• Fully operational power market, including both physical and financial markets in line with regulatory design and requirements	• ANRE, OPCOM, Transelectrica	• Continued government commitment to reform of the energy sector • Achievement of the Phare 2000 funded investments in hardware and software for the commercial market operator
Sub-project 4. Technical and economic study for oil transit pipeline • Completed oil transit pipeline feasibility study which meets the	• Completed feasibility study • Application made to financial institutions for financing for the investment in the oil transit	• Ministry of Industry and Resources • Oil industry	• Co-ordination between the three countries concerned • Oil industry support

needs of project financiers. • Proposals made to financing institutions for the necessary investment funds.	pipeline.		• Funding for the feasibility study on the territory of Croatia and F.R. Yugoslavia.
Sub-project 5. Technical assistance in programme implementation • Successful preparation and implementation of the sub-projects within this programme realised through technical assistance to the Implementing Authority	• Outputs/ results of projects are realised on schedule.	• SMSC Monitoring reports, evaluation reports.	• Assumptions and risks related to all projects within this programme.

Activities	Means		**Assumptions**
Sub-project 1 Supporting energy efficiency at the local level. • Technical training • Training in awareness raising and information dissemination • Training in energy efficiency project development • Limited support for necessary equipment	• Technical assistance • Limited support for equipment purchase		• .Energy efficiency agencies and regional branches of ARCE have and retain adequate staff • Co-operation of local authorities
Sub-project 2. Harmonisation with the energy efficiency Acquis • Procurement and installation of laboratory testing equipment and laboratory infrastructure • Technical assistance in the development of inspection and market surveillance functions	• Technical assistance • Supplies (laboratory and testing equipment)		• No change in the responsibilities for inspection and market surveillance .
Sub-project 3. Consolidation of the electricity commercial market operator • Investment in hardware and software for the operation of modules of the financial power market • Investment in simulation (training) software for the financial power market • Training and TA in the introduction and operation of the investment in the financial market system	• Technical assistance • Supplies (hardware and software)		• Continued progress in the development of the wholesale power market • Successful implementation of the Phare 2000 funded investment project for the basic IT system.

Sub-project 4. Technical and economic study for oil transit pipeline • Technical, financial, institutional, legal, and environmental feasibility study for the oil transit pipeline (on the Romanian territory).	• Technical assistance		• Co-operation between the three countries. • Funding for the feasibility study in Croatia and F.R. Yugoslavia.
Sub-project 5. Technical assistance in programme implementation • Technical assistance for the Ministry of Industry and Resources to prepare and then implement the sub-projects within this programme	• Technical assistance		• Delays caused by risks to the sub-projects supported through this project.

Annex 2 – Detailed implementation chart

Assistance to the energy sector: improvement of energy efficiency, electricity internal market and development of Trans European energy networks

Components	2002	2003													2004												2005												2006			
	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
1: Supporting energy efficiency at the local level			D	D	D	D	C	C	C	C	C	C	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	R														
2: Harmonisation with energy efficiency Acquis – investment component		D	D	D	D	D/C	C	C	C	C	C	I	I	I	I	I	I	I	I	I	I																					
IB component	D	D	D	D	C	C	C	C	C	C	I	I	I	I	I	I	I	I																									
3. Full development of an operational financial exchange for the power market – investment component		D	D	D	D	C	C	C	C	C	C	I	I	I	I	I	I	I																									
IB component	D	D	D	D	C	C	C	C	C	C	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I													
4.Technical and economic study for oil transit pipeline	D	D	D	D	D	C	C	C	C	C	C	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
5. Technical assistance in programme implementation	D	D	C	C	C	C	C	C	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I																

D = Design/Tender preparation C = Contracting I = Implementation/works R = Review/evaluation

Annex 3 – Contracting and disbursement schedule by quarter

Assistance to the energy sector: improvement of energy efficiency, electricity internal market and development of Trans European energy networks

Components	Cumulative contracting schedule by quarter in Meuro (planned)														Total Phare Allocation
	2003			2004				2005				2006			
	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	
1: Supporting energy efficiency at the local level			*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	***0.90***
2: Harmonisation with energy efficiency Acquis – investment component			*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	*1.2*	***1.2***
IB component		*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	***0.25***
3. Full development of an operational financial exchange for the power market – investment component			*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	***1.50***
IB component		*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	***1.00***
4: Technical and economic study for oil transit pipeline			*2.10*	*2.10*	*2.10*	*2.10*	*2.10*	*2.10*	*2.10*	*2.10*	*2.10*	*2.10*	*2.10*	*2.10*	*2.10*	***2.10***
5. Technical assistance in programme implementation		*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	***0.30***
Total contracting:		***1.55***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***

Components	Cumulative disbursement schedule by quarter in Meuro (planned)															Total Phare Allocation
	2003			2004				2005				2006				
	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	
1: Supporting energy efficiency at the local level			*0.18*	*0.324*	*0.468*	*0.612*	*0.756*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	***0.90***
2: Harmonisation with energy efficiency Acquis – investment component			*0.24*	*0.72*	*1.20*	*1.20*	*1.20*	*1.20*	*1.20*	*1.20*	*1.20*	*1.20*	*1.20*	*1.20*	*1.20*	***1.20***
IB component		*0.05*	*0.12*	*0.187*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	*0.25*	***0.25***
3. Full development of an operational financial exchange for the power market – investment component			*0.30*	*0.90*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*	***1.50***
IB component		*0.20*	*0.333*	*0.466*	*0.599*	*0.732*	*0.865*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	***1.00***
4: Technical and economic study for oil transit pipeline			*0.42*	*0.607*	*0.794*	*0.981*	*1.168*	*1.355*	*1.542*	*1.729*	*1.916*	*2.10*	*2.10*	*2.10*	*2.10*	***2.10***
5. Technical assistance in programme implementation		*0.06*	*0.108*	*0.156*	*0.204*	*0.252*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	*0.30*	***0.30***
Total contracting:		***0.31***	***1.701***	***3.36***	***5.015***	***5.527***	***6.039***	***6.505***	***6.692***	***6.879***	***7.066***	***7.25***	***7.25***	***7.25***	***7.25***	***7.25***

Annex 4 : draft terms of reference

Technical and Economic Study for Oil Transit Pipeline in Romania

1. BACKGROUND INFORMATION

1.1 Beneficiary country: Romania

1.2 Contracting Authority: CFCU

1.3 Current state of affairs in the relevant sector:

The development of transit routes for Caspian oil and gas to Western Europe has emerged as an important factor not only in the energy development of the Member States and the candidate countries concerned, but also as an important factor in developing economic integration and stability in South Eastern Europe. The development of such transit links is the central objective of the Inogate Programme, which has the aim of helping to facilitate investment in oil and gas transmission networks from East to West, and to establish the appropriate institutional framework for such investments.

Based on the output of the Phare Project RO9805.01-01-02 (Development of the Objectives of the Inogate Programme) a Protocol to the Inogate Umbrella Agreement on the establishment of a interstate oil transport system from Constanta (Romania) to Omisalj (Croatia) was prepared and initialled by the three governments concerned (Romania, the Federal Republic of Yugoslavia, and Croatia). This Protocol establishes the institutional background and provides a framework for the development of the project through the establishment of an Interstate Committee and Emergency Committee, the nomination of Competent Entities (in the case of Romania this is the Ministry of Industry and Resources) and their activities. The Protocol also includes the commitment to a uniform legal environment for the project together with the procedures for the settlement of disputes. The Protocol is an important building block to towards the development of the pipeline project.

In addition the three parties have signed a Memorandum of Co-operation in Belgrade in June 2001 which established a technical working group (made up of Jadranski Naftovod (Janaf) for Croatia, NIS Petroleum Industry of Serbia for FR Yugoslavia, and Petrom, Conpet, and the Constanta Oil Terminal Company for Romania).. This Memorandum also established the need for a detailed technical and economic study to be carried out, and this proposed project would undertake this technical and economic study for the pipeline in Romania.

1.4 Related programmes and other donor activities:

Romania is developing the 'Rehabilitation of the National Pipeline Transport System for Crude Oil', as a key component of the modernisation of the oil sector. The overall programme for the modernisation of the sector is partially financed by the World Bank (with loans totalling 64.7 million USD) and is currently close to

completion. The principal goals of this modernisation programme are the rehabilitation of pipelines; the automation and modernisation of pumping stations; efficiency improvements and cost reduction; and mitigation of environmental impacts. The main components of the rehabilitation project are:

- Pipeline system rehabilitation;
- Automation and optimisation of the processes developed within the pumping stations;
- Introducing modern control and surveillance technologies compatible with the SCADA system;
- Installation of an own communication system;
- Installation of an SCADA system;
- Modernisation of certain pumping facilities.

This modernisation programme is complementary to, and indeed assists the objectives of the Constanta – Omisalj pipeline project, through the rehabilitation and improvement of the existing Romanian pipeline network.

2. CONTRACT OBJECTIVES

The main objective of the South East European Pipeline Project (Constanta – Omisalj pipeline) is the supply of crude oil supply from the Caspian basin to European and world markets through both the use of existing transport systems and the construction on new pipeline systems.

The overall objectives of the study are:

- Identification of potential markets;
- Evaluation of the necessary transport capacity and identification of new investments and repairs / upgrades;
- Assessment of the financial and technical feasibility of the construction / integration and operation of the new pipeline system;
- Evaluation of the provisional tariff structures which would apply for various destinations;
- Preparation of reference documents which will acquaint potential investors with the anticipated technical features, economic parameters, financial characterisations, legal structures, operating structures and environmental features of the pipeline project.

3. ASSUMPTIONS & RISKS

3.1 Assumptions underlying the project intervention

The project is based on the assumption of a continuing interest in the project by the governments of the three countries concerned; on the assumption of a satisfactory co-ordination of the project through the mechanisms established between the three countries, and the funding and implementation for the parallel economic and technical feasibility studies on the territory of FR Yugoslavia and Croatia.

3.2. Risks

The project faces political risks (commitment of FR Yugoslavia and Croatia to the project) and technical risks based on the complexity of the information to be gathered, and the potential for delays caused by difficulties in one aspect of the inter-related technical and financial study.

4. SCOPE OF THE WORK

4.1 General

The overall purpose of this study is to identify the market for the pipeline and thus to identify the necessary transport capacity; to examine the technical issues relating to the use of existing transit facilities and the requirements for investment in upgrading and in new construction; to select the route for newly constructed pipeline in Romania; to prepare a cost and economic analysis of the project; to examine the legal issues relating to the construction and operation of the pipeline; and to study the environmental issues relating to the overall project.

4.2 Specific activities

Task 1. Market Study

Sub-Task 1.1. Identification and assessment of quantities and crude oil supply sources from the Caspian region

The first sub-task within the scope of the market study is the identification and assessment of the quantities of crude oil supply from the Caspian region, based on forecasts over a 20 year timescale. This study should consider the following:

- Assess the available crude oil quantities at the entrance to the SEEP System (Port of Constanta) bearing in mind, but not limited exclusively to the following:
  - export potential of the Caspian region countries,
  - export potential of the Russian Federation,
  - export capacities of the Black Sea ports,
  - capacities of the existing and planned transport systems,
  - Bosphorus capacity.

(Not to exclude the possibility of crude oil supply into the system from destinations outside the Black Sea.)

- Identify the directions of oil coming in Constanta;
- Assess the oil price at the entrance to the SEEP System as a parameter for the calculation of the competitiveness of the transport corridor, with SEEP being its integral part.
- Identify the companies with production activities in the Caspian region that may be potential users of the SEEP and the types and quality of crude oil produced from the Caspian fields.

The output of this sub-task should be a sub-task report setting out the assessment of the potential crude oil supplies from the Caspian region.

Sub-Task 1.2. Identification and assessment of SEEP system potential market and demand

The second sub-task in the overall market assessment (within the context of the sizing of the pipeline) is an assessment of the potential markets and their demand for the crude oil to be transported through the SEEP system. This demand analysis should cover a 20 year time period, and should consider the following factors:

- Assess, bearing in mind crude oil and oil products consumption, the potential of markets which may use SEEP for oil transport to their refineries and/or import ports, with the markets being the following:
  - World markets which may be supplied through SEEP via the Omišalj Tanker Port,
  - Western European market supplied through TAL (Transalpine Pipeline),
  - Central European market,
  - Market of the countries participating in the Project, i.e. refineries along the SEEP route.
- Identify the directions of oil coming into refineries, which are at the same time potential off-takers of SEEP.
- Examine the implications of ownership of production (in the Caspian region and in the transit countries) and of the refineries (as a factor influencing demand from the SEEP)
- Examine the need for additional infrastructure (e.g. additional pipelines) to enable the delivery of crude oil from the SEEP to the potential markets.
- Identify the origin and quality of imported crude refined, and planned to be refined, in the refineries who are potential off-takers of SEEP and compare them with the research results from the market issues.
- Identify the price of oil coming to the potential markets as a parameter for determining the price competitiveness at the same off-takers who may use SEEP for supply.

The output of this market study will be a sub-task report setting out the findings of the market and demand analysis undertaken, and the conclusions for the forecast market from the SEEP pipeline.

Task 2. Technical Study

The overall purpose of this task is to examine the technical factors relevant to the construction of the SEEP. This requires study of the capacity, condition, and investments required in the existing oil import facilities and pipelines in Romania, together with a study of the technical issues concerning the construction of new pipeline infrastructure (including the recommended route for the new pipeline) in Romania. This task will be implemented through two sub-tasks, as follows:

Sub-Task 2.1. Analysis of existing infrastructure

The purpose of this sub-task is to examine the capacity, and present and forecast capacity utilisation of the existing oil import and pipeline infrastructure in Romania, including:

- Determine the present crude oil throughput potential of the Port of Constanta considering the availability of berths, crude oil storage, port efficiency, and ship berthing time.
- Estimate the maximum and minimum amount of oil that could be transported from Constanta to Pitesti through the existing pipeline system without exceeding the maximum hydraulic and unallocated capacity.

Sub-Task 2.2. Assessment of investment needs in existing infrastructure

The consultants should study the technical condition of the existing infrastructure at the Constanta Oil Terminal and the pipeline from Constanta to Pitesti and should examine if investment is required to comply with the environmental or operational requirements of the SEEP. In Constanta the consultants should examine the findings of the technical assistance study financed under RO9910.01 concerning the identified investment needs in environmental improvements, which should take account of:

- Emergency and fire protection equipment requirements
- Spill containment equipment requirements
- Water and air treatment equipment and facilities requirements
- Telecommunications and control and monitoring equipment requirements
- Environmental concerns and mitigation strategies.

If investment needs are identified in Constanta and in the existing pipeline network, the consultants should propose, if applicable:

- Additional moorings
- Additional sub-sea pipelines (and their routing)
- Any off-shore platforms
- Pumping stations
- Metering stations
- Cargo check facility requirements
- Stand by power generating equipment
- Tankage

The output of this sub-task should be a sub-task report setting out the identified investment needs in the existing infrastructure in Romania.

Sub-task 2.3 Selection of the route of the SEEP in Romania

The purpose of this sub-task is to examine the options for the route of the new pipeline to be constructed in Romania, and to make recommendations concerning the preferred route, based on the least cost solution. Three possible routes have been identified for the new pipeline, each with advantages and disadvantages but all with the same starting point, the ARPECHIM refinery in Pitesti. These three routes are as follows:

- The Northern route: starts from ARPECHIM refinery and directs westward, along the corridor of the existing pipelines part of DPLS which transfers crude production from Ticleni oil fields to Ploiesti refineries. Close to Barbatesti the route re-directs southwards down to Filiasi area where turns again westwards towards Drobeta Turnu Severin. Here starts the mountain area – not very high – and the route directs north on the Cerna valley up to Herculane area. The route then redirects westwards close to Nera valley and continues downhill to Romania – Yugoslavia border. The main advantage of this route is availability of utilities along the parallel route. Disadvantages associated with this route compared to the other alternatives are the rugged terrain and the length.
- The Southern route: the starting point is the ARPECHIM refinery and directs south-west to Slatina and Craiova, then continues from Filiasi on the same route as the Northern Route. This route crosses a plain terrain but is longer.
- The Middle route: represents an alternative to above presented routes and is the straight link between Pitesti and Filiasi. The main advantage of this alternative is the shortness of the route but there are also associated disadvantages with this route, such as many populated areas and water and valley crossings.

In examining the three routes, the consultants should take account of the requirements for

- Pipeline
- Metering stations
- Pumping stations
- Telecommunication and monitoring equipment requirements
- River crossing locations
- Above ground requirements
- Environmental mitigation requirements

The consultants should examine the three route options, and make estimates of the construction and operation cost of each of the three options (to provide input to the following economic analysis task). The output of this sub-task should be a sub-task report setting out the results of the analysis of the three routes with the estimated construction and operation costs of the three options.

Task 3. Economic Analysis

Sub-task 3.1 Economic appraisal of pipeline route in Romania

Based on the technical analysis of the three options undertaken in sub-task 2.3, and using the cost data gathered through that analysis, the consultants should carry out an economic appraisal of the three possible routes, and should prepare a fixed and variable cost estimate for the three options (based on a 20 year time period).

The output of this appraisal (which uses the technical data as its starting point) should be a recommendation for the optimal route for the construction of the pipeline in Romania. The output of this task will be presented in a sub-task report.

Sub-task 3.2 Project investment cost appraisal

Based on the output of sub-task 3.1 (selection of the proposed route for the new pipeline), together with the output of the sub-task 2.2 (investment need appraisal in existing infrastructure), the consultants should undertake an appraisal of the investment requirements of the SEEP in Romania, as follows:

- Prepare a capital expenditure and operating cost estimate for the selected transfer solution. As a minimum, the estimate should be broken down to indicate those elements that will be constructed in each country.
- Prepare a 20 years fixed and variable operating cost estimate. Variable costs will be used in conjunction with capacity factors to determine time-based operating costs. The operating costs should be in sufficient detail to allow analysis of primary components, such as operations costs, maintenance, etc.
- Estimate start up costs;
- Estimate working capital requirements;
- Estimate debt service charges based on advice from major financing sources. Lender requirements necessary to facilitate financing will be highlighted.
- Recommend a debt/equity structure for the Project, taking into account industry practices for similar projects
- Develop the basis for taxes to be applied in the economic analysis.

In order to estimate the investment costs for the SEEP project as a whole, the consultants should additionally undertake a preliminary cost appraisal of the investment costs for the section of the pipeline on the territory of FR Yugoslavia and Croatia, together with the associated investment costs at the port of Omisalj.

The output of this sub-task is to be used as the input for the economic analysis in the following sub-task.

Sub-task 3.3 Economic analysis

Based on the investment cost appraisal generated in the previous sub-task, the consultants should proceed to the economic analysis of the SEEP project using a model (over a 20 year time period). This model should be flexible enough to allow a number of sensitivity analyses to be performed. The model should also produce the information required to satisfy the requirements of the potential investors, lenders, and potential off-takers of the crude oil to be transported through the SEEP. The economic analysis should include the following elements:

- As part of this analysis the consultants should examine the structure of fees charged by the Ports of Constanta and Omisalj for tanker unloading/loading, transport, storage and ballast water treatment.

- The consultants should also propose the structure of pipeline tariffs and the proposed methodology for setting pipeline tariffs. This methodology and structure should be reviewed with potential lenders to confirm that the tariff setting mechanism is acceptable under the assumed debt financing scenario. The consultants should also recommend a reasonable IRR (Internal Rate of Return) and should derive pipeline tariff levels based on this IRR.

- Estimate the tariff that will be paid to transit countries in exchange for their granting right–of–way for the pipeline. Transit tariffs charged by other countries for similar right–of–way use derived from similar pipelines should be taken into account.

- Develop the economic analysis as follows:
  - Estimated revenues considering capacity factors over 20 years,
  - Estimated costs considering the components developed above,
  - Estimated IRR and payback period

- Tariff as a result of backwards calculation of the IRR to tariff considering all other cost factors,
- Develop Total Tariffs by adding IRR based tariff to estimated transit based tariffs payments,
- Develop port handling fees,
- Develop ballast water treatment fees.
- Present a detailed financial model over a 20 years period including: Cash flow with NPV & IRR, Profit and Loss, Source and application of fund statements, Debt service ratios, Pro forma Balance Sheet
- Carry out sensitivity analyses on capacity factors, tariffs, capital requirements, debt structure and terms schedule.

The output of this task should be a task report presenting the findings of the economic analysis of the SEEP project.

Task 4. Legal and Regulatory Analysis

The Phare funded study under RO9805.01.01-02 (Development of the objectives of the Inogate programme in Romania) was concerned with the legal and regulatory framework for the project at a national level. The outputs of this project should be reviewed by the consultants, but the primary focus of this task is to examine the legal and regulatory issues concerned with the more specific question of the investments required in existing infrastructure (the Constanta oil terminal and pipelines) and in the new pipeline and associated facilities to be constructed in Romania. The consultant should perform this task through the following sub-tasks:

Sub-task 4.1 Progress review of legislative and regulatory framework

The previous Phare study examined changes required in the primary and secondary legislation to allow the proposed SEEP project, and developed draft revised legislation, and a timetable for the implementation of those changes. The consultants should examine firstly the outputs produced under the RO9805.01.01-02 study, and should review the progress made in actually implementing the changes and revisions recommended and drafted under this earlier study.

The consultants should produce a brief summary sub-task report setting out the progress made in implementing the outputs of the earlier study, and should highlight any areas or necessary changes where proposed changes have not in fact been implemented. The consultants should propose a revised timetable for the implementation of any changes, if still required.

Sub-task 4.2 Legal and regulatory analysis of the proposed investment project

The consultants should undertake a preliminary legal review of the proposed investment project, including any investments in the Constanta oil terminal and the proposed pipeline investment. This analysis should examine the issues relating to rights of ways, and permits and other authorisations required for the proposed investments. In particular the consultants should examine the number of authorisations required, the body delivering these authorisations, and the estimated time required for the application and granting of these authorisations (not including environmental permits, which are the subject of the following task).

The output of this sub-task will be a report setting out the findings in relating to rights-of-way issues and planning and construction permits and authorisations necessary for the proposed investments.

Task 5. Preliminary Environmental Analysis

The consultants should undertake a preliminary environmental assessment of the SEEP project in Romania. This preliminary assessment should be undertaken through the following sub-tasks:

Sub-task 5.1 Environmental regulations

The consultants should undertake a study of the national, regional and local environmental regulations which apply to the planning stage of the project, indicating the environment related permits and authorisations that must be obtained, and the issuing authority for these.

The output of this study should be presented in the preliminary impact assessment (following sub-task).

Sub-task 5.2 Preliminary environmental impact assessment

The consultants should prepare a preliminary assessment of the direct and indirect environmental impacts of the construction and operation of the port and pipeline infrastructure, including consideration of: water quality, air quality, fauna / flora, landscape, forested areas, wetlands, marine life and aquatic environment, noise, emergency response, human health, and the preservation of cultural heritage. In addition the consultants should comment on worker health and safety issues relating to the construction and operation of the port and pipeline. In particular, the consultants should comment on ways of preventing or mitigating potentially unhealthy or harmful conditions.

The consultants should also evaluate risk assessment and mitigation measures for preventing or mitigating negative impacts and incorporating environmental benefits into the Project. Examples of special areas of concern might include river and stream crossings, sub-sea installations, oil spills, catastrophic incidents, erosion prevention, or replanting of trees or vegetation.

The consultants should prepare an outline environmental action plan which sets a framework for the environmentally sound and sustainable development of the project.

The output of this sub-task should be a preliminary environmental impact assessment (including the list of permits and regulations produced through the preceding sub-task) and an outline environmental action plan.

Task 6. Preparation of preliminary project execution plan

The consultants should prepare a preliminary project execution plan including the following:

- A logic diagram based on schedule indicating primary critical paths and milestones. The schedule should recognise staged completions and partial turnover if necessary.
- The schedule analysis should include a cash flow and cash commitment schedule to be used for estimating funding timing and interest during construction.
- The overall schedule should be summarised in a Level I presentation with Level II schedule supporting the Level I. A Level III schedule should be prepared for the following stages:
  - Financing activities
  - Front – end Engineering and Design
- Identify long lead procurement items
- Recommend the organisational chart for the operation of SEEP. This organisational structure and personnel count will be used to estimate the operating expenses.

4.3. Project management & Contractor's tasks & responsibilities

<u>Contracting Authority:</u>

The Central Finance and Contracts Unit (CFCU) within the Ministry of Finance will be the Contracting Authority for this project, and as such responsible for all procedural aspects of the tendering process, contracting matters and financial management (including payments) of the project activities.

Implementing Authority:

The Implementing Authority for this project will be the Ministry of Industry and Resources, which is responsible for the implementation of this project, and for the co-ordination of the project with the authorised entity of the Government of FR Yugoslavia (NIS) and the authorised entity of the Croatian Government, through the Interstate Committee which has been established to ensure such co-ordination.

Industry responsibility

The three Romanian companies concerned with the SEEP project – Petrom, Conpet, and the Constanta Oil Terminal, are each responsible for setting up a counterpart team of its staff comprising: economists, accounting/financial staff, and technical staff who will work in close collaboration with the Consultant on the relevant parts of the work programme. The purpose of these teams will be to:

- to provide assistance to the Consultant in a timely manner.
- to ensure a close and continuous dialogue with the Consultant, and to identify and help overcome obstacles to progress

In addition the three companies are jointly Romanian representatives on the technical working group which has been formed (with representatives of Croatia, FR Yugoslavia and Romania) in order to ensure the technical co-ordination of the SEEP project.

Contractor

The contractor is responsible for the timely execution of the project and of the work tasks set out in this Terms of Reference. The consultant will be responsible for the translation of all documents to be distributed to bidders into the English language.

5. LOGISTICS AND TIMING

5.1 Project location

The project will be undertaken in Romania, in FR Yugoslavia, Croatia, and at the home offices of the consultant. Not more than 10% of the total man days to be input to the project may be spent in FR Yugoslavia and Croatia.

5.2 Project period

The forecast project start date is September 2003. The duration of the project is 30 months.

6. REQUIREMENT

The budget for this project is 2.1 M EUR (global price method). The consultant is expected to provide the necessary personnel, equipment and supplies, and office space to allow for the full performance of the services required. No purchase of office equipment or supplies is foreseen to be necessary within the scope of this project.

Any subsistence allowances to be paid for missions undertaken under the contract must respect the current per diem rates published on the Web site http://europa.eu.int/comm/europeaid/index_en.htm.[1]

The consultant should provide experts with the following expertise and experience:

- Market analysis/ forecasting of oil supply and demand (including knowledge of Caspian oil development).
- Technical knowledge of the construction and operation of oil terminal facilities (including a/o: berthing requirements/ tankage / pumping needs/ metering)
- Technical knowledge of the construction and operation of oil transit pipelines (including, a/o: pipelines, metering stations, pumping stations, telecommunications and monitoring).
- Knowledge and experience with environmental mitigation of oil transit facilities including ports and oil transit pipelines including the undertaking of environmental impact analysis within the context of the development of oil transit facilities.
- Knowledge and experience of economic analysis of oil transit facilities (including both port facilities and pipelines) including experience with the development and use of computer models for such analysis.
- Knowledge and experience of legal and regulatory issues relating to the construction and operation of oil transit facilities.
- Experience in the management of complex investment preparation studies.

7. REPORTS

7.1. Reporting requirements:

An Inception report, four weeks after starting work for comments and approval by the Implementing Authority, to include:

- the results of discussions and preliminary investigations;
- main issues identified;

- priority actions and necessities;
- the confirmed timetable for the implementation of the project, including key milestones, and the critical points/ critical path in this timetable.
- work programme for the remainder of the project.

The Consultant should prepare and submit Task Reports for Task 1 (separate reports for sub-tasks 1.1. and 1.2), Task 2 (sub-task 2.2 and sub-task 2.3), Task 3 (separate reports for all sub-tasks), Task 4 (separate reports for sub-tasks 4.1 and 4.2), Task 5. The reports shall incorporate the relevant deliverables described in Section 4 for that task. These reports will be reviewed by the Ministry of Industry and Resources, and the consultant should be prepared to present these task reports if required.

In addition to these task reports, the consultant should also prepare brief six-monthly progress reports, setting out the overall progress of the project, highlighting any difficulties encountered, and detailing any delays or changes to the timetable of the project. These reports should be submitted 6, 12, 18, and 24 months after the start of the project.

In addition to task and progress reporting, the overall objective of the project is to inform the Romanian authorities (together with the authorities of FR Yugoslavia and Croatia) the oil industry in the three countries, and potential investors and potential off-takers/ crude oil marketers. These different audiences have different needs for information and outputs of the study, and for this reason the consultants should, in addition to the progress and task reports required above, produce final reports which group together tasks in order to satisfy the information needs of each audience, as follows:

- Volume 1 – Project Reference Documents

This should be an executive summary report which includes summaries of: the objectives, project technical characteristics, economics, probable financial structure, provisional tariff structure, legal and regulatory issues, markets to be served by the pipeline, environmental mitigation strategies and other issues relevant to offtakers and potential investors.

- Volume 2 – Economic and Financial Analyses

In sufficient detail to satisfy the requirements of potential institutional lenders.

- Volume 3 – Preliminary Environmental Assessment

- Volume 4 – Preliminary Project Execution Plan and Technical Report.

7.2. Submission & approval of reports:

Reports should be submitted to the Implementing Authority (for circulation) in 6 printed copies plus electronic version (in MS Word format) in the English language, and in six copies plus electronic version (in MS Word format) in the Romanian language.

One copy of all reports (draft and final) should be submitted directly to the EU Delegation.

One copy of all final (approved) reports should be submitted to the CFCU, the Contracting Authority.

8. MONITORING AND EVALUATION

Definition of indicators

The timely completion of the key milestones in the project will be the basis for the monitoring of the progress of the project.

The timetable for the completion of the work tasks is as follows:

Task 1 should be completed within 9 months of the start of work on the project (including the inception period.

Task 2 should be completed within 18 months of the start of work on the project (including the inception period.

Task 3 should be completed within 26 months of the start of work on the project (including the inception period.

Task 4 should be completed within 10 months of the start of work on the project (including the inception period.

Task 5 should be completed within 16 months of the start of work on the project (including the inception period.

Task 6 should be completed within 28 months of the start of work on the project (including the inception period).