

REPUBLIC OF MOLDOVA



APA CANAL CHISINAU

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## CHISINAU WATER SUPPLY & SEWAGE TREATMENT - FEASIBILITY STUDY



## PROCUREMENT AND IMPLEMENTATION STRATEGY

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A Subsidiary of



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 **European Bank** for Reconstruction and Development and EU Neighbourhood Investment Facility

## LIST OF ABBREVIATIONS AND ACRONYMS

ACC	Apa Canal Chisinau
CAPEX	Capital Expenses
PIP	Priority Investment Plan
EBRD	European Bank for Reconstruction and Development
ESAP	Environmental and Social Action Plan
O&M	Operation and Maintenance
OPEX	Operation Expenses
PIU	Project Implementation Unit
PIC	Project Implementation Consultant
PMU	Project Management Unit
ToR	Terms of Reference
PS	Pumping Station
WWTP	Waste Water Treatment Plant
WTP	Water Treatment Plant
O&M	Operation and Maintenance

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## 1. BACKGROUND

As the entity ultimately responsible for the water and wastewater service, the Municipality of Chisinau has commenced a program of works intended to rehabilitate the city's water supply and wastewater collection and treatment assets.

In the framework of the European Union Neighborhood Initiative, the European Bank for Reconstruction and Development, together with co-funders: KfW Entwicklungsbank and the European Investment Bank, support the initiative through a phased investment program, provided within the European Union Neighborhood Investment Fund.

Seureca Consulting Engineers, in association with their local Moldovan partners, has carried out a feasibility study covering all the facilities and works operated by Apa Canal Chisinau (ACC). The output of this study consists in an investment plan for the next 25 years, from which a priority investments plan (PIP) has been more particularly defined.

This report presents a general implementation procedure, adapted to the various item of the PIP, and taking into account their technical characteristics, the legal and administrative context in Moldova and the EBRD's procedures.

The PIP represents a total investment of 56,676,000 €; it includes various kinds of investments, with a wide span of magnitude, in terms of capital expenditure.

These investments can be sorted out in three categories:

- First category: Construction projects for new plants

This first category includes one major project: the first phase of upgrading of the wastewater treatment plant (This project accounts for 44.6 % of the total CAPEX of the PIP) and a smaller one: construction of new small treatment plants at Ialoveni, Ghidighici, Petrucani.

- Second category: civil works projects

This second category includes one major project: the rehabilitation of 190 km of water pipes and 3270 block connections (This project accounts for 20.9 % of the total CAPEX of the PIP).

And several smaller ones:

- Civil works for an electrochlorination plant at the main water production plant (STA)
- Small rehabilitation projects

- Third category: equipment or goods purchasing.

Good purchasing includes mainly O&M equipment, pipes and fittings, and equipment to be replaced as per the initial design.

In addition, the implementation of the PIP will require contracting one or several specialized Consultant to assist the PIU in the tendering procedures and works supervision.

## 2. LEGAL AND ADMINISTRATIVE CONTEXT:

Under terms of reference, “*the Procurement and Implementation Strategy should be based on EBRD procurement rules and take into account binding provisions of the Moldovan law and existing international treaties*”

### 2.1. MOLDOVAN REGULATIONS

To respect the Moldovan regulations, ACC will have to produce those documents minimum before floating a tender:

- Investment plan
- Necessities report with specification conditions and application forms
- General Director approval on initiating the tender

According to the Regulation regarding the organization and execution of purchasing goods tenders/auctions, ACC will have to take the following obligations:

*Extract from Regulation:*

*“11. Prior publication - press release in mass media or on the official website of the enterprise, [www.acc.md](http://www.acc.md), about the performance of the tender/auction, accomplished in accordance with the provisions of the present Regulation;*

*- Ensuring free access to the auction for all the people, except those deprived of this right according to the present Regulation (exception - in case of restricted auction with limited participation);*

*- Ensuring equal rights for all bidders;*

*12. The auctioneer (organizer), depending on the importance and complexity of the production presented at the auction, can use one of the following organization forms:*

*- Open (outcry) auction (hereinafter - auction)*

*- Restrained /limited access auction”*

For the acquisition/purchase of goods, works and services, the preferred method is the open tender.

Other procurement methods can be used only according the terms established by the present Regulation, as:

- Restrained auction: in emergency situation, when ACC is faced to unplanned events, when the company which provides the service is in monopoly situation or when it is simply impossible to fulfil the condition for the open tenders.

- For **products**, the following thresholds apply:
  - < 100,000 MDL, there is no obligation to organize a tender and a head of Department may decide to purchase (with signature of the General Director)
  - < 200,000 MDL, there is no obligation to organize a tender and the Board of Directors may decide to purchase
- For **services**, the thresholds are :
  - < 150,000MDL, there is no obligation to organize a tender and a head of Department may decide to purchase (with signature of the General Director)
  - < 1,000 000MDL , there is no obligation to organize a tender and the Board of Directors may decide to purchase

## 2.2. APA CANAL INTERNAL PROCEDURES FOR PURCHASING AND CONTRACTING

ACC has some internal procedures for purchasing and contracting that must be respected.

### Technical specifications

According the specific "Procurement" procedure CODE: PSAA-33-01 under the General Director Order no. 2 from 11.01.2012: Technical specifications will have to be prepared by departments / sections / subdivisions Head of ACC.

### Approval procedure

According the specific "Procurement" procedure CODE: PSAA-33-01 under the General Director Order no. 2 from 11.01.2012, the approval procedure will have to follow the steps described here below:

- The Branch Director and the Economic Director - examine the necessities report and the specification conditions, approve or return them for changes, if necessary.
- The General Director - examines the necessities report/document and the specification conditions, approves or returns them for changes, if necessary.

### Extract from Order:

*"4.1. Branch Directors are required to ensure the presentation of the Procurement (acquisition) Reports to the Administrative and Procurement Department, on a yearly basis until the 25<sup>th</sup> November.*

*The Procurement Reports have to be drafted according the specified in the given order procedures. The branch directors will appoint the structure and the responsible staff to develop procurement reports, in the form of a strict computer application - table type (excel).*

4.2. The Head of administrative and Procurement Department will ensure the elaboration and presentation for General Directors' approval the ACC Annual Procurement / Acquisition Plan, until the 15<sup>th</sup> of January.

4.3. The Economic Direction will anticipate definite sufficient financial sources within the budget for the next year and the annual procurement plan, in order to ensure 100% of financial support.

4.3.1. The Economic Direction confirms the possibility to cover financially the Annual Procurement Plan, in case of insufficient financial sources the Administrative and Procurement Department and the Branch Directors will adjust the Procurement Plan according to annual approved "Revenues/Expenses Budget".

4.3.2. In case of Procurement Plan modifications during the year, the changes will be made in accordance with "Revenues/Expenses Budget" limits. Some of the foreseen acquisitions might be excluded or covered by other extra budgetary sources (Technical Investment and Supervision Division being responsible for this).

4.5. Head of Administrative and Procurement Department:

4.5.3. Will ascribe the types of acquisition to the Annual Procurement Plan, as follows:

CMV – Low Contract Value

COP – Price offers demand Competition

OSS – unique source

LPD – open public auction

LPR – public restrained auction

4.5.4. Will apply the procurement procedures to ensure the constant functioning of the technological processes of ACC.

4.7. Pending the approval of specific procurement procedures, until December 25 - each year, Branch Directors will draft and present the Administrative and Supply Department the reports on the foundation of the necessary acquisitions for the next year, produced strictly in a computer application, type table (Excel), which will include:

- Name of goods and Services, in Romanian, from statistical or customs classifications if possible, to which reference will be made;
- Specification of acquisition types (goods, services or works, based on character, unique acquisition, in batches/lots or mentioning the generating acquisition necessity factors);
- Annual quantity and time based distribution of necessary goods, services or works (months or even bounding time limits)
- Total or/and unit assessed value, with reference to the sources of information regarding similar existing on MD market products/services. In case the planned procurement value was taken from external sources, the final assessed value, which will include Import expenses, will be calculated by the Administrative and Procurement/Acquisition Department.
- The list of potential suppliers/executors (of services/works) especially of those ACC already had or currently have contractual relationships;
- Argumentation/Reasoning of the Procurement necessity and the services/goods/works planned implementation/usage proceeding.



*In case acquisitions refer to Capital Investments (capital and current repair works) as well as the maintenance of fixed assets, Department Heads will coordinate and draft the Procurement Foundation Reports (Investments and Technical supervision Division, Production organization and Monitoring Division, Economic Direction.*

*4.8. On a yearly base the Administrative and Supply Department will present for approval, until the 25<sup>th</sup> of December, the Fundamental Procurement Necessity Plan for the next year to the ACC Management Board/Committee.*

## 2.3. EBRD PROCEDURES

The EBRD procedures will be respected for the implementation phase.

In general, the EBRD requirements are quite open. The main principle is to insure open and fair competition; some basic rules are stated, mainly aimed at avoiding favoritism or restricted competition liable to result in collusive practices and excess prices.

Therefore, as a basic rule:

- Open tender is mandatory if the estimated value of the contract exceed:
  - 250,000 € for goods and services
  - 7.5 M€ for works.
- Restricted tender are allowed under some specific conditions, for highly specialized and complex product or service, with a limited number of suppliers
- Exceptionally, and subject to a set of restrictive conditions, direct tendering may be used.
- For small amount, shopping may be agreed by the EBRD, under some conditions

The EBRD rules require as far as possible international competition, and forbid discrimination between local and foreign products. However, for small amount, if it can be justified as the most economic and efficient procedure, local competitive tendering may be used.

Within this general frame, the procedure recommended by the EBRD are very classical; investments require to be consistent with a general procurement planning; prequalification of contractor may be used, or not; detailed design may be carried out before tendering (and then, the tender documents includes Bills of Quantities) or after tendering by the selected contractor (Design and build contract).

The EBRD procedures are flexible enough to be smoothly implemented in each particular case, provided that the basic principles are respected; they are consistent with the Moldovan regulation and the internal procurement rules of ACC.

## 3. TYPES OF CONTRACTS AND TENDERING PROCEDURE

### 3.1. TYPE OF CONTRACTS

For each particular investment, the entire implementation procedure, from the tendering stage to the final reception, depends on the *type of contract* which is signed between the Employer and the Contractor.

The contract defines the splitting of scopes of work and responsibilities between:

- The Employer
- The Contractor
- The Consultant (if any)

Standard models of contract have been prepared by the FIDIC (Fédération Internationale des Ingénieurs Conseil – Swiss), based on past experience of projects. These standards can be easily adapted to each particular project. The EBRD recommends using such kind of standards, or equivalent.

In the current case, two models of contracts are relevant:

- Design and Built contract (known as “FIDIC Yellow book” )
- Work contract (known as “ FIDIC Red Book”)

#### 3.1.1. DESIGN AND BUILD CONTRACTS

Adapted to “Design and Build” projects, the Yellow Book contract puts the detail design in the scope of the Contractor. In this procedure, the bidders are fully responsible for:

- The assessment of the exact quantities (quantities of concrete, length of pipes, number, and characteristics of valves, fittings, pumps, motors, etc.)
- The global process performances of the plant.

Therefore, it is adapted to projects involving complex process works; it enhances competition, as it encourages the bidders to find the most efficient technical solution, in order to get the lowest prices. In the other hand, it requires a very precise definition of the warranted performances, and of the minimum technical requirements.

Moreover, the construction companies specialized in water (and wastewater) treatment have developed patented processes and optimized designs, which can only be proposed within an open competitive tender based on “design and build” Contract.

Finally, the transfer of process responsibilities to the Contractor also entails the transfer of detailed design responsibility, and then on quantities – therefore, it is a simpler

procedure for the Employer, who has not to prepare bills of quantities during the tender preparation phase, and avoid the risk of additional costs during the construction phase.

This transfer of quantities responsibility to the Contractor may result in higher prices, but this is balanced by the advantage of competition on technical solutions, and not only on unit prices, as for a BoQ or shopping list type of tender.

Content of the Tender Documents:

In the case of a Design and Build Contract, the Tender Documents must include:

- Employer's requirements:
  - General presentation of the project – goals and limits of supply
  - Detailed warranted performances, with conditions of validity and tests procedures
  - Basic design, presented as a reference solution
  - Particular technical specifications for electromechanical equipment
  - General technical specifications (for electromechanical equipment ,electrical equipment, civil works)
- Model of Contract (adapted from FIDIC Yellow Book)
  - General conditions
  - Particular conditions
- Instruction to tenderers (general rules, dates, bonds, prices schedules, etc. )

### 3.1.2. WORKS CONTRACTS

With the Red Book procedure, the detailed design is in the scope of the Employer (often subcontracted to a consultant). In this case, the tender is based on general technical specifications and on a Bills of Quantities with unit prices to be proposed by the bidders.

The “Red book” procedure must be selected when there is no process stake (no advantage for the Employer to use then specific know-how of the bidders in terms of process designing) as it limits the risk of the Employer. Even if the initial quantities have been approximately defined only (as it can be for civil works rehabilitation, for instance), the unit prices list allow an adjustment of the global price without any abusive prices or claim. The magnitude of variation order without rebidding must be defined in the Contract (usually 10 to 15 % of the original quantities).

In the other hand, it protects the Employer from excessive technical risk that could have been taken by the bidder offering the lowest price (as it may happen in a Yellow book procedure).

This type of procedures makes also easier the comparisons of offers received from the different bidders.

Content of the Tender Documents:

In the case of a works contract, the Tender documents must include:

- Technical specifications
- Bills of quantities
- Model of contract, adapted from Red Book – general and particular conditions of contract.
- Instructions to tenderers

### **3.1.3. PURCHASING CONTRACT**

In case of equipment direct purchasing, a specific contract (much simpler than for D&B or works contracts) must be prepared for each order. Depending on the type of goods, it shall define at least:

- The time schedule
- The minimum technical performances (usually detailed in the initial supplier proposal)
- The condition of acceptance
- The conditions of payments

A standard document (to be adapted for each order) should be prepared by the purchasing department of ACC.

## **3.2. PIP PROJECTS PACKAGING**

Various kinds of works and supply are included in the PIP. A packaging in several projects is proposed hereafter. This proposal has been defined according to the following principles:

- Propose large enough packages in terms of amount in order to interest international companies
- Respect technical consistency of each package

### **3.2.1. REHABILITATION OF THE WWTP**

The renovation project of the WWTP includes two different kinds of works:

- Construction of new process works: pretreatment, sludge treatment
- Renovation of existing works: primary settlers, aeration tanks, secondary clarifiers

It is recommended to have one Contractor only for this complex project. Therefore, the best solution will be to launch one tender, including two parts:

- One part on “design and build” procedure ( the construction of the new works)
- One part on “bill of quantities” procedure (all the renovation works)

In such a case, the methodology to evaluate the offers from the bidders must be clearly explained before bidding.

As it is a rehabilitation project, it will be difficult to transfer to the Contractor the whole process responsibility; for the water treatment line, he cannot be responsible for the initial design (which will be partly reused); and for the sludge treatment, he can claim that the performance of the treatment depends on the quality of the sludge, which depends on the adjustment of the water treatment. Therefore, intermediate and particular warranties only shall be asked in the tender documents.

### **3.2.2. CONSTRUCTION OF NEW WTP**

The construction of the new treatment plants at Laloveni, Petrucani, Ghidighici and Baliveski should be grouped in one project, and implemented following the “Design and Build” procedure.

The bidders will be responsible for the detailed designing of the treatment line. A base solution, including aeration, biological filtration for ammonia treatment and final disinfection will be presented as a reference.

The warranted performances shall cover:

- The quantity of produced water
- The quality of the water after aeration (as, in emergency situation, a part of the produced water will undergo aeration and disinfection only)
- The quality of treated water (compliance with the Moldovan standards)

### **3.2.3. CONSTRUCTION OF AN ELECTROCHLORINATION PLANT FOR STA**

The construction of an electrochlorination plant at STA WTP includes civil works and procurement/supply/installation of equipment.

After discussion with ACC, we propose to implement this project following the “Design and Build” procedure.

### **3.2.4. REHABILITATION WORKS**

Rehabilitation works will be implemented under works contract. This mainly concerns the following subprojects:

- Pipework

- Rehabilitation and/or laying of 190 km of water pipes and 3,270 block service connections meters
- Implementation of water pipe (500m)
- Rehabilitation of sewers (15 km).
- Rehabilitation of reservoirs
  - Rehabilitation of the reservoirs of Ialoveni + Tohatin + Valea Dicescu + Ghidighici + Telecentru + Buiucani + Ciocana + Schinoasa + Airport + Balsevsc + Petricani + Codru MDK + Colonita + Independenta + Sîngera + Stauceni
  - Rehabilitation of the reservoirs of STA Chisinau
- Wells Rehabilitation
  - Rehabilitation and/or construction of wells at: Ialoveni (Rehabilitation of 21 wells), Ghidighici (Rehabilitation of 11 wells), Petricani (Rehabilitation of 9 wells), Balisevsc (Rehabilitation of 6 wells), New wells field (Construction of 15 wells)

Water pipework and wastewater pipework have been grouped in a single package. Detailed designs for pipework, rehabilitation of connections, of wells and for the implementation of pressure reducers on the water supply system shall be carried out by the contractor itself. The contract will include design, supply and works. On one hand, bidders will take into account in their offer all the contingencies and risks that might occur, which may lead to as significant increase of the cost of the package. But on the other hand, this will also limit the risk of claims during the implementation of the works, the contractor being in charge and therefore responsible of the design. This request comes from ACC, which does not want to support any claim in case of disagreement between the Consultant in charge of the design and the contractor in charge of the works. They have experienced such critical situation in the past, which has cost money for ACC. Detailed design shall include precise hydraulic section, implementation of all civil works to be rehabilitated with precise studies of old concrete analyzed by specialized firms, civil works specifications, equipment and electricity specifications, bill of quantities of pipes and fittings.

These packages are large enough to interest international companies. Then, all network renovation works may be contracted by international competitive bidding.

For the other projects, namely Civil Works of small rehabilitation projects (reservoirs, PS, ...), contracts include only Civil Works consisting of building and repairing. Detailed design are to be developed by institute specialized Consultant, including implementation of all civil works to be rehabilitated with precise studies of old concrete analyzed by specialized firms, bill of quantities and specification for civil works.

For those projects, all renovation civil works may be contracted by local competitive bidding.

### 3.2.5. PURCHASING OF EQUIPMENT

Purchasing of equipment concerns:

- O&M equipment and machinery,
- Valves and fitting
- Pumps to be replaced as per original design
- Instruments (flowmeters, pressures gauge, etc.)
- Pipes for network rehabilitation
- Electrochlorination plant for STA

ACC shall prepare technical specifications and bills of quantities.

Concerning the electromechanical equipment, namely electro chlorination equipment, new pumps for pumping stations, flow and water meters and pressure sensors purchasing should include the development of technical and/or electromechanical specifications based on performance requirements prepared by ACC. or a sub-contracted local design institute.

ACC has experience in the installation and maintenance of most of those equipment. Nevertheless it is foreseen to include in the procurement contract also adequate training from specialists.

The supplier shall give the functional guarantee for his product and be responsible for supervision of commissioning and startup of the installations (only in special cases such like installation of large scale pumps, electrochlorination equipment etc.).

Some equipment can be procured locally from national suppliers or on the base of competitive shopping list where national and international suppliers are invited to bid. The supplier shall be made responsible to control that his supply complies with the design.

### 3.2.6. CONSULTANCY

A Project Implementation Unit (PIU) is usually the means through which the procurement process can be effectively carried out. The PIU ensures that the funds allocated for the project are correctly allocated to the project.

The general lack of experience in administering contracts using international practices also means that external expertise will have to be brought in to help with this task. Contract documents, outline design, functional requirements and specifications have to be prepared and it is not expected that this expertise will be available within ACC. It is recommended that a Project Implementation Consultant (PIC) be engaged to assist the PIU. In order that knowledge transfer is effectively carried out, it must be stressed that the role of the PIC should be limited to carrying out the design and managing the supervision and approval stage. The PIC must not be expected to carry out the supervision or approval process which should be carried out by the PIU.

ACC will however require assistance in obtaining the services of a PIC. The terms of reference of the PIC have been prepared within this Feasibility Study and are attached to this report.

The Project Implementation Consultant will assist the PIU in matters as required in the procurement process described below:

- Notification of opportunities for tendering;
- Preparation of detailed design for Works Contracts
- Preparation of tender documents, including general and particular technical specifications
- Prequalification where appropriate;
- Invitation to tender and issuance of tender documents;
- Receipt of tenders, evaluation of tenders and contract award;
- Work supervision
- Contract administration.

The PIC is expected to be an engineering consultant with staff covering the wide range of skills required in successful implementation of the project.



### 3.3. SYNTHESIS - APPLICATION TO THE PIP

A preliminary procurement plan with definition of each package with their own type of contract is displayed in table 1 here below.

**Table 1: List of Packages with their description**

Package #	Name of the package	Procurement Process	International / local	Description	Estimated cost	Party in charge of the detailed Design	Implementation period (in months)
1	First phase of upgrading the WWTP for Chisinau	Design & Build <sup>1</sup> + Works	International	D&B: New pretreatment facilities including PS Separated thickeners for biological excess sludge Digesters for anaerobic digestion with energy generation Centrifuges for sludge dewatering Works: Light rehabilitation of primary settling Light rehabilitation of biological tanks Light rehabilitation of secondary clarification Electrical work	25,310,000 €	D&B: Contract based on the FIDIC Yellow Book  Works: Contract based on detailed design & BoQ made by the Consultant	24
2	New Water Treatment Plants for well fields	Design & Build <sup>1</sup>	International	Treatment of the water produced from Ialoveni, Petrucani, Ghidighici and Baliveskii well fields	1,260,000€	Contractor based on the FIDIC Yellow Book	12
3	New Electrochlorination Plant	Design & Build <sup>1</sup>	International	Implementation (equipment & civil works) of an Electrochlorination Plant at the WTP STA	820,000 €	Contract based on the FIDIC Yellow Book	12
4	Rehabilitation and construction of wells	Design <sup>2</sup> , Supply & work	International	Rehabilitation of the wells for the Emergency Plan: Ialoveni (21 wells), Ghidighici (11 wells), Petricani (9 wells), Balisevsc (6 wells) Construction of one new well field (15 wells)	2,410,000 €	Contract based on intermediary design prepared by the Consultant	12
5	Civil works for some water supply and production facilities	Work	Local	Civil Work for the implementation of a new Pumping Station at Tohatin Rehabilitation of some civil works at STA Rehabilitation of the tank n°5 in the Water Treatment Plant and 4 other tanks at STA Rehabilitation of 16 existing tanks	3,980,000 €	Contract based on detailed design & BoQ prepared by the Consultant	12
6	Rehabilitation of the drinking water and wastewater networks	Design <sup>2</sup> , Supply & work	Local or International	Design, supply of sewers and pipeworks including trenches, laying of sewers, construction of manholes for urgent renewal of sewers (15 km) Design, supply of water pipes and pipeworks including trenches, laying of pipes, installation of valves and fittings, construction of manholes (190 km of drinking water network rehabilitation+New pipes to be laid for the Emergency Plan+new pipes & fittings for the adaptation of the water distribution system to the new production scheme) Supply of hydraulic fittings for the repairs	12,820,000 €	Contract based on intermediary design prepared by the Consultant	36
7	Rehabilitation of connections	Design <sup>2</sup> , Supply & work	international	Procurement of fittings and installation/replacement of 3,270 steel connections for buildings (blocks)	2,130,000 €	Contract based on intermediary design prepared by the	24

<sup>1</sup> D&B includes procurement of equipment's & goods

<sup>2</sup> The detailed design will be made by the contractor in charge of the work, based on preliminary BoQ determined by the Consultant

Package #	Name of the package	Procurement Process	International / local	Description	Estimated cost	Party in charge of the detailed Design	Implementation period (in months)
8	O&M equipment <sup>3</sup>	Supply of Goods	Local or International	Equipment for operating both water supply and wastewater networks including vehicles, public works machinery, leak detection equipment, CCTV, safety equipment, automated tools, ...	3,360,000 €	Consultant Technical specifications based on performance requirements prepared by the Consultant	6
9	Pressure reduction on the network	Design <sup>2</sup> , Supply & work	Local or International	Implementation of pressure reducers, flowmeter, pressure sensors, boosters	300,000 €	Technical specifications based on performance requirements prepared by ACC	12
10	Pumping Stations for both drinking water and sewerage systems	Supply of Goods	International	New pumps for the water PS (Tohatin, Buiucani Z3 PS, Buiucani Z4 PS, Independenta Z3 PS, Independenta Z4 PS & Treapta II a raw water) New pumps for the wastewater PS (Vatra 1, Vatra 2, Codru 2, Codru 1 & 3, Vieru 1 & 2, V.Lupu 1 and Vatra 3 + PS where odour problems are observed) Pumps for the Emergency Plan	1,980,000 €	Technical specifications based on performance requirements prepared by the Consultant	12
11	Water treatment equipment	Supply of Goods	Local or International	Chlorination system at the PS: Telecentru, Tohatin, Valea Dicescu, Buiucani, Ciocana, Schinoasa, Airport, Codru MDK, Colonita, Independenta, Singera and Stauceni	120,000 €	Technical specifications based on performance requirements prepared by the Consultant	3
12	Instrumentation and control Equipment	Supply of Goods	International	MIS: Implementation of a full ERP system SCADA: Upgrading or renewal of the existing equipment <sup>4</sup>	1,480,000 €	Technical specifications based on performance requirements prepared by the Consultant	12
13	Enhancement of the existing SCADA	Consultancy	Local or International	<u>Data Storage</u> : i) redirect data arriving on the LOVATI server and on the Russian server and on the Termocom server to a server computer service; ii) transfer selected data from the WTP to a server computer service (50 days) <u>Development</u> of a specific tool or adaptation of an existing tool for <u>data processing</u> (100 days)	150,000 €	ToR to be prepared by the Consultant (see package 16)	12
14	Electrical works	Supply of Goods & Works	Local	Supply and installation of new electrical panels in PS Replacement of the electrical lines in STA, SAN, SESE, SSP	550,000 €	Technical specifications based on performance requirements prepared by the Consultant	24

<sup>3</sup> International bidders must have a local branch in Moldova

<sup>4</sup> Installation of equipment to be done by ACC

Package #	Name of the package	Procurement Process	International / local	Description	Estimated cost	Party in charge of the detailed Design	Implementation period (in months)
15	Consultancy	Consultancy	International	Detailed design <sup>5</sup> Intermediary design with preparation of BoQ <sup>6</sup> Preparation of performance requirements for all equipment & goods to be purchased Preparation of ToR for the SCADA Consultancy Project (package 14) Preparation of tender documents for all packages (1 to 15) Supervision of all the works (packages 1 to 15)	3,010,000 €		36
					<b>59,680,000 €</b>		

<sup>5</sup> It includes: the rehabilitation works at the WWTP (package 1), the rehabilitation of the reservoirs (package 5), the pumping stations (package 5) and the electrical works (package 15)

<sup>6</sup> Detailed design will be made by the contractors. However an intermediary design with preliminary BoQ are required for the evaluation of the bids. It includes the rehabilitation of wells (package 4), water pipes (package 6), sewers (package 7), connections (package 8), implementation of hydraulic fittings (package 10)

We propose **15 packages** with amounts ranging between 150,000 € and 25.3 M€.

The biggest package concerns the first phase of upgrading the WWTP (package 1). It has to be noted that two types of procurement process are proposed for this package: “Design & Build” for the new facilities to be constructed (pretreatment, digesters, ...) and “Work Contract” for the facilities to be rehabilitated (primary settling, biological tanks, ...).

As shown on the followings graphs, different types of procurements are proposed.

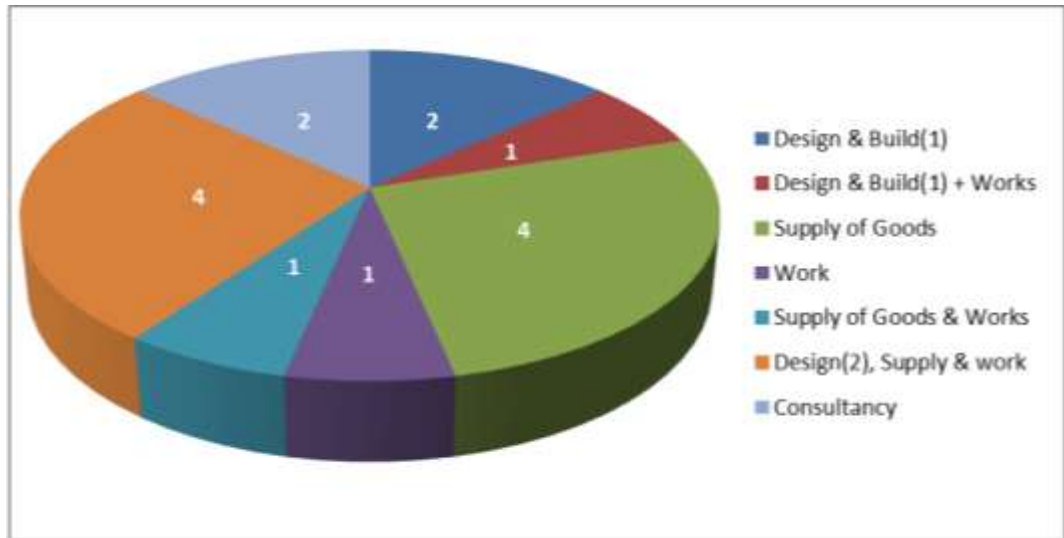


Figure 1: PIP - Number of Packages & Type of Procurement Process

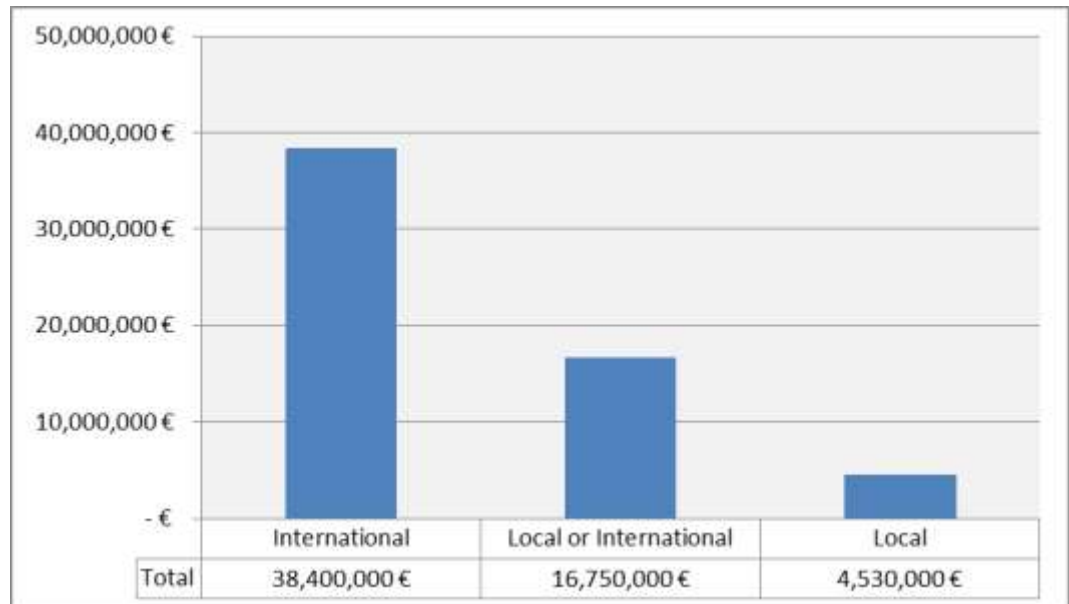


Figure 2: PIP - Type of Procurement

## 4. TOR FOR PROJECT IMPLEMENTATION CONSULANT

### 4.1. BACKGROUND

The financing plan for the proposed project is as follows:

**Table 2: Financing Plan (EUR million)**

EBRD loan	EUR 15.1 million
BEI loan	EUR 15.1 million
KfW loan	EUR 15.1 million
Donors	EUR 14.1 million
<b>Total</b>	<b>EUR 59.4 million</b>

The investments of the project will be procured in accordance with the EBRD Procurement Policies and Rules for Public Sector Projects. ACC, via a Project Implementation Unit (“PIU”), will manage procurement, as well as installation, construction and implementation of the investments.

*A PIU is already established, physically located in ACC in Chisinau, and staffed with local personnel. This PIU already manages the project.*

The PIU will co-ordinate all activities between representatives of the Company and the contractors, as well as acting as the overall Project Manager. To support the Company, ACC and the PIU in all aspects of Project implementation, including preparation of design, technical specifications, tenders documentation, assistance to tendering, tender evaluation and contract finalization, administration and supervision of the contract implementation, as well as set up of the disbursement system, ACC intends to hire a reputable firm or consortium of firms (hereinafter the “Consultant”).

These Terms of Reference cover the scope of the Consultant’s services.

### 4.2. OBJECTIVES

The overall objective of the Consultant is to facilitate the timely and effective implementation of the Project by rendering assistance to ACC in the implementation of the Project, including design, all aspects of procurement and disbursement.

With the involvement of the Consultant the Company will have access to the best practice in the implementation of the Project and procurement of works, as well as advice on specific technical issues. The Consultant will provide assistance in procurement of works and goods completely in accordance with the procedures, specifications and documentation of the Bank and pursuant to all other agreements stipulated in the Loan Agreements signed between ACC and EBRD.

## 4.3. SCOPE OF WORK

The Consultant shall perform the following main tasks:

- Overall project management support;
- Prepare all necessary design the works and technical specifications for goods, according to the Procurement procedure for each package;
- Arrangement of preparation of the prequalification, if any, and tender documents for procurement of works and goods;
- Arrangement of the tendering procedure for works and goods, including evaluation of tenders and drafting tender evaluation reports;
- Administration of contract implementation including, where appropriate, works supervision or assisting ACC with works supervision
- Arrangement of timely disbursement under the contracts.

### 4.3.1. INTRODUCTION

The Consultant shall support the PIUs with the following tasks:

- Assist the Company to set up the PIUs;
- Monitor the Project Implementation Plans;
- Design and prepare the Technical Specifications;
- Assist the PIUs in drafting tender documents, carrying out tender procedure, preparing evaluation report and contract, and submit the necessary documents to the EBRD, when requesting the issue of “no objection” as required;
- Provide project management support to the PIUs to co-ordinate, supervise, manage, monitor and evaluate all aspects of the Projects, including project implementation and the procurement of contracts, appropriate design and preparation of technical specifications; contract supervision and administration;
- Assist the PIUs in building their capacity to implement projects in accordance with EBRD’s Performance Requirements (“PRs”)<sup>7</sup>;
- Assist the PIUs in building their capacity to take into account gender issues where relevant and appropriate;
- Ensure that the PIUs will arrange payments to the contractor, to whom payment has been certified, to ensure that all such payments are made in due time, and

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<sup>7</sup> EBRD’s 2008 Environmental and Social Policy and Performance Requirements are available here:

<http://www.ebrd.com/pages/about/principles/sustainability/policy.shtml>

that appropriate control and record systems are in place to ensure compliance with financiers and the country reporting requirements;

- Ensure that all reports required by the EBRD for implementation of the Projects and the loans, including annual environmental and social reports, are submitted on schedule;
- Prepare an integrated time schedule for progress meetings with the various parties; attend meetings together with the PIUs to support the Company' overall programme as a whole, seek responses to reports, and discuss project issues on a regular basis with the PIUs and other key people; prepare and circulate minutes of the meetings, including follow-up actions required to ensure progress;

### **4.3.2. SUPPORT TO THE PIUS**

#### **4.3.2.1. *Definition of the required PIU structure***

The Consultant provide a description/work breakdown structure for the PIUs to be set up, as required for each Project and prepare job specifications and key qualification requirements for PIU personnel.

#### **4.3.2.2. *Identification of PIU staff needs***

The Consultant will identify job descriptions and key qualifications of PIU staff that are required for the Projects. The PIUs should as a minimum have the following experts: PIU director/Project Manager, Construction and Procurement Manager, Accountant/Disbursement Specialist and PIU Office Manager. It is expected that the input of PIU staff will vary over time as different skills are needed at different times throughout the project implementation period.

#### **4.3.2.3. *Development of a training plan***

The Consultant will identify any training needs required for the Projects. Appropriate training techniques, including both formal and informal techniques, will be identified. A training plan summarizing the needs and training will be drawn up. Following approval of this training plan by the Company, the Consultant will undertake the required training.

It is envisaged that training may be required in the following areas: e.g. procurement; project control and reporting; contracting; project accounting and disbursement; utility operations; management of environment, health and safety issues; addressing gender issues in service provision and HR practices, and public consultation. It is envisaged that training will include both formal training workshops and informal on the job training. The training will be designed to ensure that following the end of the assignment, the PIU is able to fulfil its responsibilities without additional assistance.

#### 4.3.2.4. *Development of PIU operating procedures*

The Consultant will develop, implement and document all PIUs operating procedures and systems. These systems will include, inter alia:

- A Project Procedures System, setting out the responsibilities, duties and authorities of the parties involved in the design and construction of the Project, together with all necessary procedures for communications, meetings, reporting, change control, quality control, etc. as are necessary for the efficient running and control of the Projects.
- A Financial Management System, which will include: (i) project accounting and budget management systems; (ii) procedures for payment to suppliers of services, goods and works; (iv) management of a project and debt service reserve accounts and preparation of the appropriate documentation as required by EBRD; (v) systems for financial reporting to EBRD meeting reporting requirements specified in the EBRD loan agreements.
- A Project Management System, by which all relevant parties are made aware and reminded regularly of the existence and timing of important milestones and events. This should include a Project Decision Matrix for all project stakeholders, showing the dates for all decisions and approvals over the forthcoming six months.

All systems will be documented in a full but simple Project Procedures Manual. An initial manual will be completed mid-way through the assignment; this will be amended to reflect practical experience and the evolution of the PIUs, and re-submitted at the end of the assignment.

### 4.3.3. **MONITORING OF THE PROJECT IMPLEMENTATION PLAN**

#### 4.3.3.1. *Establishing, reviewing and updating the Project Implementation Plan*

The Consultant, in consultation with the Company will establish, review and update the Project Implementation Plans (PIP) for the Projects acceptable for EBRD. The PIPs will cover all aspects of project implementation, and will include, inter alia:

- Project program - a detailed Project program (using appropriate presentation format: e.g. linked activity program, etc.) for completion of each Project - showing all activities and key events for design, approvals, construction, commissioning, completion, etc. In the process of developing this program, the Consultant will verify that all planning, construction and operation approvals and permits have been identified; and that the project program fits with city planning.
- Project budget - a detailed cost budget as well as cash flow forecast for each Project. This will be based on existing proposals of cost estimates.



- Procurement - a procurement plan. The Consultant, if necessary, will advise on the best contract approach.
- Project risk matrix - A risk matrix outlining the key challenges and risks associated with the Projects and the measures proposed to deal with them.
- The Consultant will submit the updated PIPs to the Company approval.

#### ***4.3.3.2. Obtaining approvals for any changes to the plan in good time***

Following approval of the PIPs, the Consultant will closely monitor progress against the planned program, budget and procurement plan. Where the Consultant and the relevant PIU identify the need to change any aspect of the PIP, a request for approval, accompanied by a clear outline of the need for such a change, will be submitted to the respective Company. This will continue throughout the assignment.

#### ***4.3.3.3. Any other activities***

The Consultant will ensure that all applicable environmental and social requirements, including implementation of ESAP and SEP, required by the financiers are being adhered to and that the PIUs are duly informed about the procedures. The Consultant will also work with EBRD to implement good practices adopted in other Bank projects in the Moldovan which have piloted good practices in gender mainstreaming in the areas of consultation service provision and human resources.

### **4.3.4. DESIGN AND PREPARATION OF TECHNICAL SPECIFICATIONS**

#### ***4.3.4.1. Initial data collection***

The Consultant shall review available and collect missing initial technical data with regard to the contract to be implemented under the Projects.

#### ***4.3.4.2. Development of employer's requirements***

The designs shall be sufficiently detailed to allow the works to be procured and to enable an accurate cost estimate to be made. The designs shall provide such details as location, size, number, capacity, strength, equipment specifications. The design assumptions and criteria used to develop the designs shall be clearly documented.

For the contracts to be tendered on Supply and Installation concept, the Consultant shall review the required design and technical specifications and complete them in the detail sufficient for inclusion in tender documents. All design specifications shall meet requirements of Moldovan Law and international standards, where appropriate. It is anticipated that the Consultant will sub-contract a local design institute. The local design institute will do the design and ensure that the final design meets the requirement of the

local construction legislation. The Consultant will provide continuous supervision of the design works, as well as quality assurance.

The Consultant shall base his technical solutions on the best industrial practice and innovative solutions.

Consultant shall prepare technical specifications and bill of quantities in accordance with the "Guidelines for Preparation of Technical Specifications and Bill of Quantities", for works portion and "Notes for Preparing the Schedule of Requirements" for goods portion.

#### ***4.3.4.3. Obtaining of approvals by authorities***

The Consultant shall assist the PIUs with obtaining necessary approvals and permits by authorities for design prepared by the Consultant.

### **4.3.5. PROCUREMENT SUPPORT**

#### ***4.3.5.1. Monitoring of procurement***

The Consultant will oversee all activities and ensure that all procurement is carried out in accordance with EBRD Procurement Policies and Rules.

#### ***4.3.5.2. Advice on procurement strategy***

The Consultant will provide advice with respect to all aspects of the procurement strategy. This will include, inter alia: Forms of Contract, Interface Management, Optimum contracting timetable, Supervision Requirements selection of Dispute Resolution Procedure.

#### ***4.3.5.3. Support during the preparation of Tender Documents:***

The Consultant will support the PIUs to prepare the tender documents. To this end, the Consultant will, inter alia:

- Review available technical specifications and documentation.
- Ensure that the technical specifications are converted into a form suitable for inclusion in Tender Documents.
- Ensure that the environmental, social and health and safety provisions are duly incorporated into the Tender Documents for the contractors.
- Advise on the possibilities for alternatives, cost savings value engineering opportunities etc and the treatment of these in the Tender documents.
- Draft tender documents.

The Priority Investment Program has been broken down into 15 packages, with estimated values varying from several thousands of euros to more than 20 M€. Depending on the type of procurement procedure, the scope of the Consultant will cover different tasks and responsibilities. Three different procedures have been considered as relevant:

- Design and built contracts
- Works contract
- Goods purchasing

The content of each package is given in annex 1 to these ToR.

For the design phase, tender preparation and assistance to contract finalization, the scope of the Consultant will basically include:

**For Design and build contract:**

- checking and supplementing if necessary the preliminary design prepared during the Feasibility Study.
- Preparation of the tender documents: Employer's requirements (description of the project, general specifications, particular specifications, schedule of warranties, conditions of testing, model of contract, instructions to tenderers, and other documents required by the Moldovan regulation, by ACC procedures and by EBRD procurement procedures)
- Technical evaluation of the technical solution proposed by the tenderers – assistance to contract finalization

**For construction contract:**

- Detailed design of the works
- Preparation of bills of quantities
- Preparation of tender documents: Employer's requirements, specifications, model of contract, instructions to tenderers, and other documents required by the Moldovan regulation, by ACC procedures and by EBRD procurement procedures)
- Evaluation of the contractor's offers.

**For purchasing of equipment:**

- Preparation of detailed technical specifications
- Preparation of bills of quantities
- Preparation of purchasing contract according to ACC and EBRD procedures.
- Technical evaluation of the vendor' offers.

After finalization of each procurement contract, the Consultant will be in charge of assisting ACC during the implementation phase and supervising the works, as "Employer's representative" or as "Engineer", depending on the type of contract.

#### *4.3.5.4. Support during the procurement process*

The Consultant will provide support to the PIUs throughout the procurement process. To this end, the Consultant will, inter alia:

- Draft and ensure that all procurement notices are placed in a timely manner in accordance with the EBRD Procurement Policies and Rules.
- Ensure that all approvals and no-objections are applied for in a timely manner.
- Carry out the administration of the tender process, ensure that appropriate records are kept, documentation is properly stored, recorded and managed, and confidentiality is maintained.
- Prepare draft responses to Tender enquiries, arrange for approval and issue and record the same.
- Arrange any data rooms, site meetings, information meetings or other pre-tender events, and record same.

#### *4.3.5.5. Support during the evaluation process*

The Consultant will take the lead in organising and managing the evaluation process. To this end, the Consultant will, inter alia:

- Give guidance on the composition of the evaluation committee and to the committee as required.
- Provide draft detailed technical evaluation report for the consideration of the committee. Compile the evaluation report in the required format, including all technical and financial analyses, records of consultation with external parties by the committee and clarifications requested and receive.
- Arrange for meetings of the evaluation committee, attend as an advisor and record these meetings, presenting the minutes for approval by the PIU Directors.
- Document the evaluation committee's deliberations in relation to the evaluation report and compile the agreement there into the report prior to seeing all approvals.
- Ensure that all queries and complaints are promptly attended to as appropriate and copy such inquiries as appropriate to the Bank.

#### *4.3.5.6. Support during contract finalisation*

The Consultant will provide support to the PIUs during contract finalisation. To this end, the Consultant will, inter alia:

- Prepare a brief for the PIUs indicating all the items to be resolved in the clarifications pre-contract, if any.

- Attend pre-contract discussions, if any, and document the discussions, updating the contract documents necessary and seeking all necessary approvals.
- Advise on the validity of performance and other contract-related securities.
- Circulate the Contract as required by the relevant Rules.
- Notify unsuccessful Tenderers.
- Ensure that all queries and complaints are promptly attended to as appropriate and copy such inquiries as appropriate to the Bank.

#### **4.3.6. COORDINATION OF THIRD PARTIES**

##### **4.3.6.1. *Other Consultants***

The Consultant will support the PIUs to coordinate the work of all other consultants involved in the project. To this end, the Consultant will, inter alia:

- Ensure that other consultants are provided with necessary documentation and other assistance, in order that they may meet the objectives of their assignments.
- Work with the PIUs to review and respond to any recommendations, where necessary submitting requests for amendment of the PIP.

##### **4.3.6.2. *Licensing Agents, regulators etc***

The Consultant shall identify and advise the PIUs to initiate the procedures for any necessary local or national licences, permits or other approvals, including but not limited to Site access, Building permits for permanent and temporary works as appropriate, licences, as well as registration, inspection, calibration and standardization of equipment. Where a contractor is responsible for obtaining specific licences or other authorisations, the Consultant shall facilitate the process. Furthermore, the Consultant will ensure that any on-going reporting requirements are met, and incorporated into the PIU procedures.

#### **4.3.7. CONTRACT ADMINISTRATION SUPPORT**

##### **4.3.7.1. *Pre-Implementation Briefing***

The Consultant will produce a one-page summary pre-implementation briefing for the PIUs for the contract. This briefing will act as an aide memoir for the PIUs and include any key or outstanding issues that need to be taken account during project implementation.

#### **4.3.8. SUPPORT IN ENSURING COMPLIANCE WITH THE FINANCE DOCUMENTS AND OTHER AGREEMENTS**

##### **4.3.8.1. *Conditions Precedent***

The Consultant will support the PIUs to discharge the Conditions Precedent/effectiveness to the availability of funds.

##### **4.3.8.2. *Covenants, Reps & Warranties***

The Consultant will monitor and support the PIUs to meet all continuing, time dependent or repeating warranties and representations. The Consultant shall keep records to demonstrate the status of these.

##### **4.3.8.3. *3.8.3 Preparing disbursement requests***

The Consultant will train the PIUs to prepare all disbursement requests and obtain the necessary authorised signatures and to submit these in good time in accordance with the Finance Documents

##### **4.3.8.4. *Project Accounts and Audits***

The Consultant shall support the PIUs to arrange for the preparation of Project Accounts at the time and in the form required in the Finance Documents, and arrange for audit and action any matters arising from audit in accordance with the Finance Documents. The Consultant shall include a monthly statement of the PIUs' expenditures and projection against its budget for the next six months in each progress report.

##### **4.3.8.5. *Reporting in accordance with the Finance Documents***

The Consultant shall train the PIUs to meet all reporting requirements stipulated under the Finance Agreements and other Project Agreements. This will include regular reporting on any time-dependent covenants, implementation of any time or progress-dependant elements such as insurance policies, general progress reporting (program, progress and financial status).

##### **4.3.8.6. *Environmental and Social Matters***

The Consultant will ensure that all applicable environmental and social requirements of the Bank, including implementation of the ESAP and SEP, are being adhered to and that the PIUs are duly informed about these requirements. The Consultant will also assist PIUs in preparation of the Annual Environmental and Social Reports (AESRs) for the Bank.

#### 4.3.9. SUPERVISION OF THE WORKS CONTRACTS AND ADMINISTRATION OF THE SUPPLY OF GOODS CONTRACTS

The Consultant will perform the duties of the Employer's Representative/ Engineer/the Project Manager or equivalent – according to the type of contracts - , as these may be attributable to, specified and/or implied by the contract, in accordance with the laws, technical standards and construction norms and rules.

In order to do so the Consultant will inter alia:

- review and approve the working drawings prepared by the Contractor;
- supervise the works and approve all materials, construction techniques and workmanship on a day-to-day basis in accordance with the contract(s);
- provide expert advice on all aspects of the works undertaken, especially regarding project supervision, measurement, contracts monitoring and quality control;
- ensure the proper programming, recording, measurement and accounting of the works by means of contemporary management and measurement techniques;
- carry out monitoring of the project progress and promptly report to the Company details of any aspect that may jeopardize the progress of the works, as well as any implications such aspects may have on the original time of completion or cost of the works, and the measures being (or to be) adopted to overcome such factors;
- approve the contractor's work programmes and sources of construction materials and characteristics thereof;
- approve adjustment of the constructions on the given location and instruct the contractors on these issues;
- determining by measurement the value of the works in accordance with the Contracts documents;
- issue Interim Certificates for interim payments to the PIUs for approval and certifying quality, etc. and completion of all, or parts of, the works;
- determine the value and time impact of variations, reviewing new rates proposed by the Contractor and making recommendations to the PIUs for the acceptance (as appropriate) of revised rates and the issue of Variation Orders
- ensuring that ESAP and SEP are duly implemented during construction phase and as permanent works are implemented;
- ensuring that safety requirements (including on-site movements) are met and that the minimum disruption to operations is caused by the contract works;
- facilitate arrangements between the Contractor and utility undertakers and owners of private apparatus sharing occupation of the worksite;

- participate in the interim and final acceptance of works;
- agree the final measurement and payment on completion of contracts;
- verify “As-built” drawings supplied by the Contractor;
- advise the PIUs on all matters related to the execution of the contract(s), including settlement of the Contractor’s claims;
- prepare works maintenance programme;
- carry out maintenance inspection visits to each contract during the defects Liability Period;
- carry out other inspections, when necessary and envisaged under the contracts;
- participate in acceptance of equipment delivered.

The Consultant shall seek prior approval from the PIUs before:

- issuing any Variation Order with financial or time implications, except in an emergency situation when the approval of the PIUs shall be obtained as soon as practicable;
- sanctioning additional items, sums or costs;
- approving the sub-contracting of any part of the works; and
- approving any extension for the time(s) for completion.

#### **4.3.10. ARRANGEMENT OF TIMELY DISBURSEMENT UNDER THE CONTRACTS**

- prepare or sum up cash flow forecast for the contract and the Projects in a whole;
- assist with financial planning;
- verify the invoices and payment documents for all contracts;
- prepare disbursement applications according to EBRD requirements;
- assist with opening letters of credit, where appropriate.

#### **4.3.11. EXIT STRATEGY**

Three months before the end of the assignment, the Consultant will develop an exit strategy. This strategy will outline measures that need to be undertaken in order to ensure a smooth exit, and to ensure that the PIUs are able to function without any additional support following the end of the assignment.



## 4.4. IMPLEMENTATION ARRANGEMENTS AND DELIVERABLES

### 4.4.1. IMPLEMENTATION ARRANGEMENTS

The Consultant will sign the contract with ACC. The assignment is expected to start in July 2012 and have duration of 5 years.

The Consultant will supply all necessary computer hardware and software required to deliver the services, together with the necessary office equipment, which will be handed over to the Company at the end of the assignment.

The Consultant will provide residential accommodation for their specialists, and local and international transportation. The Consultant will also be responsible for all salaries, fees, allowances, insurance, leave pay and taxes for the staff involved in the assignment.

It is expected that the Consultant will be provided a furnished, serviced and maintained office accommodation, for which ACC has the right to recover its costs. The main project office of the Consultants shall be located in Chisinau in ACC.

All available project information, reports and documents will be made available for the Consultant by PIU, ACC and Companies.

All documentation related to the works is and will remain the property of ACC after completion of the assignment. The Consultant shall not publish, use or dispose of this documentation without written consent of ACC.

#### *Deliverables*

The Consultant will prepare Inception, Monthly and Final Reports to be delivered to the ACC and the EBRD. All reports shall be prepared in the Russian/Romanian and English languages.

#### **Inception Report**

Not later than in four weeks upon commencement of rendering the services the Consultant will prepare and submit Inception Reports. These reports will include the information about the status of each Project's preparation and implementation, the Consultant's assessment of effectiveness of the Loan Agreements, revised overall procurement plans and contracting strategies. The expected Project implementation schedule corrected in accordance with the realistic status will be attached to the report, as well as the Consultant's work schedule for the next quarter. In addition, the Consultant shall review the Log-Frame for the Project and verify assumptions, risk and baseline.

#### **Quarterly Reports**

Throughout the entire period of rendering the services the Consultant shall submit Quarterly Reports by the fifteenth day of the following quarter. Each report will show events and progress for the Consultant's activities of each of the main tasks for each Project.

During the works execution and supply administration stage the reports shall show events and progress of the works for the previous quarter.

The format of the quarterly reports shall be agreed by the ACC and the EBRD and shall include, but not be limited to, the following:

- chart and description of work and goods of each stage: production, transportation, construction, installation, testing, commissioning, guarantee test and acceptance;
- cash flow forecast;
- comparisons of actual and planned progress including percentage completion achieved for each activity;
- details of any aspects which may jeopardize the completion in accordance with the Contracts, and the measures being (or to be) adopted to overcome such aspects;
- copies of the assurance documents, test results and certificates of materials;
- safety statistics, including details of any hazardous incidents and activities relating to environmental or social aspects and public relations;
- review and update of investment grant log frame: progress with regard to output and where possible outcome;
- other information as relevant.

#### **Final Report**

The Consultant will prepare a draft of the Final Report for each Project one month prior to the end of the Contract and deliver it over to the Company. The Final Report will be a review of all Consultants' tasks, the level to which they were fulfilled and will include all necessary conclusions. Upon receipt of the Company' comments and suggestions the Consultant shall prepare the finalised versions of the Report.

## **4.5. CONSULTANT PROFILE**

The Consultant shall be responsible for mobilisation of qualified engineers, technicians and other professional staff with the proven experience in the administrative management, procurement, design and supervision of similar construction works and acquiring the equipment for the projects in comparable climatic and geological conditions.

It is anticipated that the Consultant's team shall include the following expertise with short-term support as required in other disciplines:

- Project Manager;
- IFI Procurement and Contracts Specialist;
- Water and Wastewater Engineers;

- Finance/Disbursement Specialist;
- Designers.

All experts shall have a minimum of 5 years' experience of the activity for which they are being proposed and in a similar position, including:

- have design and project management experience gained in countries with climatic conditions similar to the project sites;
- have construction and supply experience gained in countries with climatic conditions similar to the project sites;
- have experience in design of water supply projects, knowledge of FIDIC and/or World Bank/EBRD Supply and Installation contractual arrangements;
- have experience in (i) planning and design activities; (ii) assistance with planning and design activities; (iii) project management; (iv) project management assistance; (v) engineering; (vi) procurement of goods, works and services;
- have experience and knowledge of the EBRD's 2008 Environmental and Social Policy and Performance Requirements;
- have a good knowledge of procedures and rules of procurement of international financial institutions, such as the World Bank, ADB or EBRD;
- have a good knowledge of requirements of Romanian legislation concerning construction, financial, accounting and disbursement issues.

## 5. PROCUREMENT PLAN

The length of the project implementation plan depends much of the type of the individual project. The length for design and preparation of tender documents is assessed to take from 2 months (ex. O&M equipment for operating network) up to 6 months (ex. Waste Water Treatment Plant).

Completion of tender documents is followed by tender announcement according to EBRD requirements for international tendering. The tender procedure including announcement (if required pre-qualification), selling of tender documents, tender opening, tender evaluation and tender award is assessed to take further 4 months including at least 60 days for the tenderers to prepare their tender.

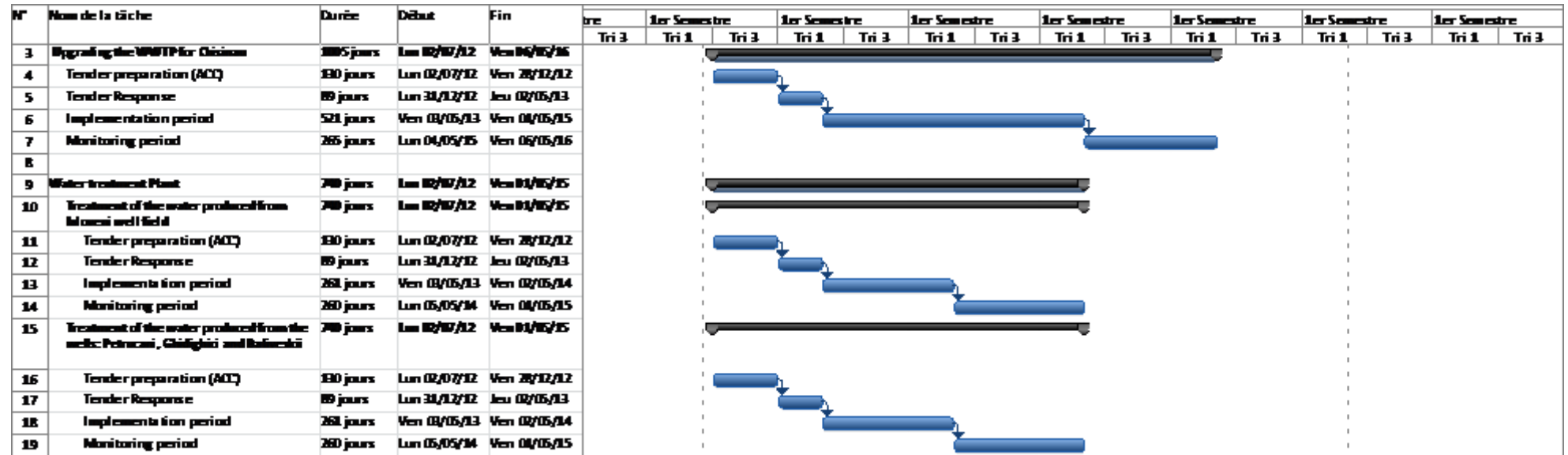
The tendering period will be concluded by signing of a contract with the awarded tenderer (the lowest evaluated tenderer).

The length of the implementation period depends much of the type of the individual project.

All projects are followed by a 3 up to 36 months (depending of local regulations) defects liability period not shown in the implementation plan.

A preliminary schedule of implementation is described in Figure 1

Figure 1: Schedule of implementation



N°	Nom de la tâche	Durée	Début	Fin	Semestre																	
					1er	2er	3er	1er	2er	3er	1er	2er	3er	1er	2er	3er	1er	2er	3er			
21	Drinking Water Network	3267 jours	Lun 02/09/12	Mar 09/05/17	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3			
22	Rehabilitation of 30 km the current network and replacement of steel connections	700 jours	Lun 02/09/12	Ven 06/08/15																		
23	Tender preparation (AO)	130 jours	Lun 02/07/12	Ven 28/12/12																		
24	Tender Response	89 jours	Lun 30/12/12	Jeu 02/05/13																		
25	Implementation period	216 jours	Ven 03/05/13	Ven 28/02/14																		
26	Monitoring period	265 jours	Lun 03/03/14	Ven 02/03/15																		
27	Rehabilitation of 360 km of the current network and replacement of steel connections	3267 jours	Lun 02/09/12	Mar 09/05/17																		
28	Tender preparation (AO)	130 jours	Lun 02/07/12	Ven 28/12/12																		
29	Tender Response	89 jours	Lun 30/12/12	Jeu 02/05/13																		
30	Implementation period	567 jours	Lun 03/03/14	Mar 03/05/16																		
31	Monitoring period	265 jours	Mer 04/05/16	Mar 03/05/17																		
32	Implementation of a by pass in the Water Treatment Plant in Vadul lui Voda	685 jours	Lun 02/09/12	Ven 07/04/14																		
33	Tender preparation (AO)	130 jours	Lun 02/07/12	Ven 28/12/12																		
34	Tender Response	89 jours	Lun 30/12/12	Jeu 02/05/13																		
35	Implementation period	131 jours	Ven 03/05/13	Ven 01/11/13																		
36	Monitoring period	265 jours	Lun 04/11/13	Ven 02/11/14																		
37	Implementation of a pipe in the Pumping Station of Chidighici to dilute the water produced by the wells and ensure the quality	560 jours	Lun 02/09/12	Ven 08/08/14																		
38	Tender preparation (AO)	130 jours	Lun 02/07/12	Ven 28/12/12																		
39	Tender Response	89 jours	Lun 30/12/12	Jeu 02/05/13																		
40	Implementation period	66 jours	Ven 03/05/13	Ven 02/08/13																		
41	Monitoring period	265 jours	Lun 05/08/13	Ven 02/08/14																		
42	Implementation of water pipe (500km) between the Pumping station of Petricani and the transfer pipe of Doina	560 jours	Lun 02/09/12	Ven 08/08/14																		
43	Tender preparation (AO)	130 jours	Lun 02/07/12	Ven 28/12/12																		
44	Tender Response	89 jours	Lun 30/12/12	Jeu 02/05/13																		
45	Implementation period	66 jours	Ven 03/05/13	Ven 02/08/13																		
46	Monitoring period	265 jours	Lun 05/08/13	Ven 02/08/14																		

N°	Nom de la tâche	Durée	Début	Fin	1er Semestre		1er Semestre		1er Semestre		1er Semestre		1er Semestre		1er Semestre		1er Semestre	
					Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1
48	Rehabilitation and construction of the wells for the Emergency Plan	300 jours	lun 02/02/12	ven 30/05/14														
49	Tender preparation (ACC)	45 jours	lun 02/07/12	ven 31/08/12														
50	Tender Response	65 jours	lun 03/09/12	ven 30/11/12														
51	Implementation period	260 jours	lun 03/12/12	ven 29/11/13														
52	Monitoring period	130 jours	lun 02/12/13	ven 30/05/14														
53																		
54	Civil Work	720 jours	lun 02/02/12	ven 03/04/15														
55	Civil Work for the implementation of an Electrochlorination Plant	330 jours	lun 02/02/12	ven 04/10/13														
60	Civil Work for the implementation of a new Pumping Station in Tichin city	460 jours	lun 02/02/12	ven 04/04/14														
61	Tender preparation (ACC)	44 jours	lun 02/07/12	jeu 30/08/12														
62	Tender Response	86 jours	ven 31/08/12	ven 28/12/12														
63	Implementation period	130 jours	lun 03/07/13	ven 03/10/14														
64	Monitoring period	65 jours	lun 05/01/14	ven 04/04/14														
65	Rehabilitation of the tank n°5 and 4 other tanks at STA	590 jours	lun 02/02/12	ven 03/10/14														
66	Tender preparation (ACC)	44 jours	lun 02/07/12	jeu 30/08/12														
67	Tender Response	86 jours	ven 31/08/12	ven 28/12/12														
68	Implementation period	130 jours	lun 05/01/14	ven 04/07/14														
69	Monitoring period	65 jours	lun 07/07/14	ven 03/10/14														
70	Rehabilitation of the tanks	720 jours	lun 02/02/12	ven 03/04/15														
71	Tender preparation (ACC)	44 jours	lun 02/07/12	jeu 30/08/12														
72	Tender Response	86 jours	ven 31/08/12	ven 28/12/12														
73	Implementation period	130 jours	lun 07/07/14	ven 02/10/15														
74	Monitoring period	65 jours	lun 05/01/15	ven 03/04/15														
75																		
76	Sewers: Urgent pipe rehabilitation defined by ACC	830 jours	lun 02/02/12	lun 07/05/15														
77	Tender preparation (ACC)	91 jours	lun 02/07/12	lun 05/11/12														
78	Tender Response	85 jours	mar 06/11/12	lun 04/03/13														
79	Implementation period	520 jours	mar 05/03/13	lun 02/03/15														
80	Monitoring period	135 jours	mar 03/03/15	lun 07/09/15														

N°	Nom de la tâche	Durée	Début	Fin	1er Semestre		2er Semestre		3er Semestre		4er Semestre		5er Semestre		6er Semestre		7er Semestre	
					Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1
82	Chlorination Equipment	286 jours	Lun 02/09/12	Lun 05/09/13														
83	Implementation of Chlorination system for the tanks in the PS	286 jours	Lun 02/09/12	Lun 05/09/13														
84	Tender preparation (ACQ)	91 jours	Lun 02/07/12	Lun 05/11/12														
85	Tender Response	85 jours	Mar 05/11/12	Lun 04/03/13														
86	Implementation period	45 jours	Mar 05/03/13	Lun 06/05/13														
87	Monitoring period	65 jours	Mar 02/05/13	Lun 05/08/13														
88	Electrochlorination equipments for the plant in STA	286 jours	Lun 02/09/12	Lun 05/09/13														
89	Tender preparation (ACQ)	91 jours	Lun 02/07/12	Lun 05/11/12														
90	Tender Response	85 jours	Mar 05/11/12	Lun 04/03/13														
91	Implementation period	45 jours	Mar 05/03/13	Lun 06/05/13														
92	Monitoring period	65 jours	Mar 02/05/13	Lun 05/08/13														
93																		
94	Purchasing of equipments as excavator, trucks, vehicles	268 jours	Lun 02/09/12	Lun 01/07/13														
95	Tender preparation (ACQ)	46 jours	Lun 02/07/12	Lun 03/09/12														
96	Tender Response	46 jours	Mar 04/09/12	Lun 05/11/12														
97	Implementation period	46 jours	Mar 05/11/12	Lun 07/01/13														
98	Monitoring period	125 jours	Mar 02/01/13	Lun 01/08/13														
99																		
100	Purchasing of safety equipment	136 jours	Lun 02/09/12	Lun 02/01/13														
101	Tender preparation (ACQ)	46 jours	Lun 02/07/12	Lun 03/09/12														
102	Tender Response	46 jours	Mar 04/09/12	Lun 05/11/12														
103	Implementation period	20 jours	Mar 05/11/12	Lun 03/12/12														
104	Monitoring period	25 jours	Mar 04/12/12	Lun 07/01/13														
105																		
106	CBM equipment for operating network	386 jours	Lun 02/09/12	Lun 05/01/14														
107	Tender preparation (ACQ)	46 jours	Lun 02/07/12	Lun 03/09/12														
108	Tender Response	90 jours	Mar 04/09/12	Lun 07/01/13														
109	Implementation period	125 jours	Mar 02/01/13	Lun 01/08/13														
110	Monitoring period	135 jours	Mar 02/07/13	Lun 06/01/14														
111																		
112	Purchasing of leak detection equipment	326 jours	Lun 02/09/12	Lun 31/09/13														
113	Tender preparation (ACQ)	46 jours	Lun 02/07/12	Lun 03/09/12														
114	Tender Response	85 jours	Mar 04/09/12	Lun 31/12/12														
115	Implementation period	65 jours	Mar 01/01/13	Lun 01/04/13														
116	Monitoring period	130 jours	Mar 02/04/13	Lun 30/09/13														
117																		
118	Equipment for pressure reduction on the potable water network	586 jours	Lun 02/09/12	Lun 01/09/14														
119	Tender preparation (ACQ)	91 jours	Lun 02/07/12	Lun 05/11/12														
120	Tender Response	85 jours	Mar 05/11/12	Lun 04/03/13														
121	Implementation period	260 jours	Mar 05/03/13	Lun 03/03/14														
122	Monitoring period	130 jours	Mar 04/03/14	Lun 01/09/14														



N°	Nom de la tâche	Durée	Début	Fin	1er Semestre		2er Semestre		3er Semestre		4er Semestre		5er Semestre		6er Semestre		7er Semestre	
					Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3
124	Purchasing of new pumps	306 jours	Lun 02/07/12	Lun 29/08/16														
125	Implementation of new pumps in the pumping station of Independenta, Schimbarea, Baiuzari Zone 4, Petricari Zone 2	566 jours	Lun 02/07/12	Lun 01/03/14														
126	Tender preparation (AO)	91 jours	Lun 02/07/12	Lun 05/11/12														
127	Tender Response	85 jours	Mar 06/11/12	Lun 04/03/13														
128	Implementation period	260 jours	Mar 05/03/13	Lun 03/03/14														
129	Monitoring period	130 jours	Mar 04/03/14	Lun 01/03/14														
130	Implementation of pumping groups for the new Pumping Station of Tobutin city	826 jours	Lun 02/07/12	Lun 31/08/15														
131	Tender preparation (AO)	91 jours	Lun 02/07/12	Lun 05/11/12														
132	Tender Response	85 jours	Mar 06/11/12	Lun 04/03/13														
133	Implementation period	260 jours	Mar 04/03/14	Lun 02/03/15														
134	Monitoring period	130 jours	Mar 03/03/15	Lun 31/03/15														
135	Implementation of new pumps in the pumping station of Tobutin	306 jours	Lun 02/07/12	Lun 29/08/16														
136	Tender preparation (AO)	91 jours	Lun 02/07/12	Lun 05/11/12														
137	Tender Response	85 jours	Mar 06/11/12	Lun 04/03/13														
138	Implementation period	260 jours	Mar 03/03/15	Lun 29/02/16														
139	Monitoring period	130 jours	Mar 01/03/16	Lun 29/02/16														
140																		
141	Rehabilitation of pumps	736 jours	Mar 05/11/12	Lun 31/08/15														
142	Rehabilitation of the pumps in the pumping station of Petricari Zone 1, Ghidighici, Balceschi Zone 2	566 jours	Mar 05/11/12	Lun 05/01/15														
143	Tender preparation (AO)	85 jours	Mar 05/11/12	Lun 04/03/13														
144	Tender Response	85 jours	Mar 05/03/13	Lun 01/02/13														
145	Implementation period	265 jours	Mar 02/02/13	Lun 07/02/14														
146	Monitoring period	130 jours	Mar 08/02/14	Lun 05/01/15														
147	Rehabilitation of the existing pumps : Baiuzari Z3 PS+ Baiuzari Z8 PS+ Independenta Z3 PS+ Independenta Z8 PS+ Troscu Ilia sewer meter	566 jours	Mar 05/03/13	Lun 04/02/15														
148	Tender preparation (AO)	85 jours	Mar 05/03/13	Lun 01/02/13														
149	Tender Response	85 jours	Mar 02/02/13	Mar 28/02/13														
150	Implementation period	265 jours	Mar 29/01/13	Lun 03/11/14														
151	Monitoring period	130 jours	Mar 04/11/14	Lun 04/03/15														
152	Rehabilitation of Pumping Station where colour issues are observed	566 jours	Mar 02/07/13	Lun 31/08/15														
153	Tender preparation (AO)	85 jours	Mar 02/07/13	Lun 28/02/13														
154	Tender Response	85 jours	Mar 29/01/13	Lun 24/02/14														
155	Implementation period	265 jours	Mar 25/02/14	Lun 02/03/15														
156	Monitoring period	130 jours	Mar 03/03/15	Lun 31/03/15														

N°	Nom de la tâche	Durée	Début	Fin	1er Semestre		2er Semestre		3er Semestre		4er Semestre		5er Semestre		6er Semestre		7er Semestre		8er Semestre	
					Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1	Tri 3	Tri 1
158	Electricity equipment	676 jours	Lun 02/02/12	Lun 02/02/15																
159	New electrical panels in big PS + New electrical panels in small PS	676 jours	Lun 02/02/12	Lun 02/02/15																
160	Tender preparation (ACC)	66 jours	Lun 02/07/12	Lun 01/10/12																
161	Tender Response	90 jours	Mar 02/10/12	Lun 04/02/13																
162	Implementation period	390 jours	Mar 05/02/13	Lun 04/02/14																
163	Monitoring period	130 jours	Mar 05/02/14	Lun 02/02/15																
164	Replacement of the electrical lines in SWR, SAM, SESE, SSP	676 jours	Lun 02/02/12	Lun 02/02/15																
165	Tender preparation (ACC)	66 jours	Lun 02/07/12	Lun 01/10/12																
166	Tender Response	90 jours	Mar 02/10/12	Lun 04/02/13																
167	Implementation period	390 jours	Mar 05/02/13	Lun 04/02/14																
168	Monitoring period	130 jours	Mar 05/02/14	Lun 02/02/15																
169																				
170	Information system equipment	831 jours	Lun 02/02/12	Lun 02/02/15																
171	SCADA	831 jours	Lun 02/02/12	Lun 02/02/15																
172	Tender preparation (ACC)	91 jours	Lun 02/07/12	Lun 05/11/12																
173	Tender Response	85 jours	Mar 05/11/12	Lun 04/03/13																
174	Implementation period	520 jours	Mar 05/03/13	Lun 02/03/15																
175	Monitoring period	135 jours	Mar 03/03/15	Lun 07/02/15																
176	Implementation of a full ERP system	831 jours	Lun 02/02/12	Lun 02/02/15																
177	Tender preparation (ACC)	91 jours	Lun 02/07/12	Lun 05/11/12																
178	Tender Response	85 jours	Mar 05/11/12	Lun 04/03/13																
179	Implementation period	520 jours	Mar 05/03/13	Lun 02/03/15																
180	Monitoring period	135 jours	Mar 03/03/15	Lun 07/02/15																

## 6. RISK ANALYSIS

Risks related to	Mitigation measures
General Project management	<p>ACC should establish a PIU staffed with profoundly experienced specialists in necessary disciplines</p> <p>ACC will hire an international consultant (“Engineer”) to get necessary assistance in the Project implementation</p>
Supply and works contract conditions	The contracts will be based on such internationally acknowledged models as FIDIC and EBRD’s
Violation of system integrity caused by supply of the goods and works necessary for implementation/rehabilitation of chlorination system, pumping station and tanks of the heat distribution network in two lots and two tender procedures.	The same designer shall prepare full set of design documentation for the chlorination, pumping station and tanks. Goods and works will be supplied compliant to the prepared detailed design.
Coordination between the delivery of goods and installation works	<p>PIU has experience of chlorination system, pumping station and tanks</p> <p>PIU’s Consultant understands clearly the necessity for implementation of the Client’s Engineer function including:</p> <ul style="list-style-type: none"> <li>• Design quality control – by engineers and designers</li> <li>• Quality control at the construction and installation stages</li> <li>• Monitoring of tests and commissioning</li> <li>• Time schedule monitoring – detailed design, delivery of goods, implementation of works</li> <li>• Cost and cash control, project budget monitoring</li> </ul>
Timeframe for preparation of design documentation	<p>Pre-engineering has already been done and will be included in the tender documentation</p> <p>Basic design shall be submitted by the bidders compliant to the technical specification as an integral part of the tender proposal</p>

Risks related to	Mitigation measures
	For important projects, as upgrading the Waste Water Treatment Plant, detailed design will be prepared by the winner of the Tender.
Conformity to the Moldovan standards and norms	<p>The Tender Documents include requirement to the potential designer to have all necessary licenses for design in Moldova.</p> <p>The design documents can be prepared by:</p> <ul style="list-style-type: none"> <li>• a foreign designer and then to be checked for the compliance to the Moldovan norms and standards by a Moldovan designer; or</li> <li>• a foreign designer duly licensed by the Moldovan authorities; or</li> <li>• by an Moldovan designer</li> </ul>
Design quality	<p>Pre-engineering documents are prepared in close cooperation between the PIU, the Consultant and Moldovan designers</p> <p>Basic design will be checked by the PIU and the Consultant and used for the tender evaluation</p> <p>Detailed design will be checked by the PIU and the Consultant (including both international and Moldovan expertise)</p>
Getting necessary approvals for design documentation	Design documents shall be prepared compliant to respective Moldovan standards and norms.
Compliance to the design	Designer's supervision during construction and installation is required by the Moldovan legislation
Delivery and storage of pipes and equipment	<p>Materials and equipment shall have CIP delivery to the specified addresses;</p> <p>The pipes will be stored in a 24/7 guarded storage provided by ACC, with restricted access; burglary and fire alarm</p> <p>The substations shall be delivered to the address of installation in the buildings.</p> <p>The supplier of the goods will be responsible for the equipment to the moment of its arrival at the specified address. After that the responsibility for</p>

<b>Risks related to</b>	<b>Mitigation measures</b>
	the equipment will be transferred to the installation company. PIU will be responsible for coordination and minimization of time between the delivery and installation.
Tests and commissioning	The tests and commissioning procedures are specified in Moldovan norms and standards. These works shall be implemented accordingly.
Competence in operation	Necessary training for operation of the new equipment, system and process will be provided under the Contract.