## Prequalification Document for Procurement of Civil Works for Completion of Luda Yana Dam And Potable Water Treatment Plant

**Invitation for Prequalification No.: MIDP-PQ-ICB-1** 

**ICB No.: MIDP-CW-ICB-1** 

Project No: P099895- II

## **Employer: Ministry of Regional Development**

**Country: Republic of Bulgaria** 

Issued on: 28 February 2014

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# **PART 1 – Prequalification Procedures**

## **Section I. Instructions to Applicants**

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## **Section I. Instructions to Applicants**

#### A. General

- Scope of Application
   In connection with the Invitation for Prequalification<sup>1</sup> indicated in Section II, Prequalification Data Sheet (PDS), the Employer, as defined in the PDS, issues this Prequalification Document ("Prequalification Document") to prospective applicants ("Applicants") interested in submitting applications ("Applications") for prequalification to bid for the Works described in Section VII, Scope of Works. In case the Works are to be bid as individual contracts (i.e. the slice and package procedure), these are listed in the PDS. The International Competitive Bidding ("ICB") number corresponding to this prequalification is also provided in the PDS.
- 2. Source of Funds The Borrower or Recipient (hereinafter called "Borrower") indicated in the 2.1**PDS** has applied for or received financing (hereinafter called "funds") from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called "the Bank") towards the cost of the project named in the PDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) resulting from the bidding for which this prequalification is conducted. Payment by the Bank will be made only at the request of the Borrower and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the loan (or financing)agreement. The loan (or financing) agreement prohibits a withdrawal from the loan (or credit) account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the loan (or financing) agreement or have any claim to the proceeds of the loan (or credit).
- 3. Corrupt and 5.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section VI.
   Practices
  - 3.2 In further pursuance of this policy, Applicants shall permit and shall cause its agents to permit the Bank to inspect all accounts, records and other documents relating to the submission of the Application, bid submission (in case prequalified), and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.
- **4. Eligible Applicants 4.1** Applicants shall meet the eligibility criteria as per clause 5.1. For the purpose of applying the eligibility criteria listed in this Clause 4 and 5, references to the "Applicant" include all entities involved or intended to

<sup>&</sup>lt;sup>1</sup> The Invitation for Prequalification (IFP) provided information for potential bidders to decide whether to participate, including the essential items listed in the Standard Prequalification Document and also any important or specialized prequalification requirements requested to qualify for the prequalification.

be involved with the proposed Works (including all partners and any of their affiliates that directly or indirectly control, or are controlled by or are under common control with the firm), specialized sub-contractors, consultants, manufacturers or suppliers (as mentioned in Form ELI-1.2 Applicant's Party Information Form), and the personnel of each, for any part of the contract including related services.

- 4.2 An Applicant may be a firm that is a private entity, a government-owned entity—subject to ITA 4.9 or a combination of such entities in the form of a joint venture ("JV") under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a JV, all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. The JV shall nominate an authorized representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the prequalification process, bidding (in the event the JV submits a bid) and during contract execution (in the event the JV is awarded the Contract).Unless specified in the **PDS**, there is no limit on the number of members in a JV.
- 4.3 A firm may apply for prequalification both individually, and as part of a joint venture, or as a sub-contractor. If prequalified, it will not be permitted to bid for the same contract both as an individual firm and as a part of the joint venture or as a sub-contractor. However, a firm may participate as a sub-contractor in more than one bid, but only in that capacity. Bids submitted in violation of this procedure will be rejected.
- 4.4 A firm and any of its affiliates (that directly or indirectly control, are controlled by or are under common control with that firm) may submit its application for prequalification either individually, as joint venture or as a sub-contractor among them for the same contract. However, if prequalified only one prequalified applicant will be allowed to bid for the same contract. All bids submitted in violation of this procedure will be rejected.
- 4.5 An Applicant may have the nationality of any country, subject to the restrictions pursuant to ITA5.1. An Applicant shall be deemed to have the nationality of a country if the Applicant is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed specialized sub-contractors or suppliers for any part of the Contract including related Services.
- 4.6 Applicants shall not have a conflict of interest. Applicants shall be considered to have a conflict of interest, if they participated as a

consultant in the preparation of the design or technical specifications or have been hired or proposed to be hired by the Employer or Borrower as Engineer for contract implementation of the works that are the subject of this prequalification.

- 4.7 An Applicant that has been sanctioned by the Bank in accordance with the above ITA3.1, including in accordance with the Bank's Guidelines on Preventing and Combating Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants ("Anti-Corruption Guidelines"), shall be ineligible to be prequalified, to bid for, awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined.
- 4.8 The list of debarred firms and individuals is available at the electronic address specified in the **PDS**.
- 4.9 Government-owned enterprises or institutions in the Employer's Country may participate only if they can establish that they (I) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not dependent agencies of the Employer<sup>2</sup>. To be eligible, a government-owned enterprise or institution shall establish to the Bank's satisfaction, through all relevant documents, including its Charter and other information the Bank may request, that it: (i) is a legal entity separate from the government (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to the government, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt; and (iv) is not bidding for a contract to be awarded by the department or agency of the government which under their applicable laws or regulations is the reporting or supervisory authority of the enterprise or has the ability to exercise influence or control over the enterprise or institution.
- 4.10 An Applicant shall not be under suspension from bidding by the Employer as the result of the execution of a Bid–Securing Declaration.
- 4.11 An Applicant shall provide such evidence of eligibility satisfactory to the Employer, as the Employer shall reasonably request.
- 5. Eligibility 5.1 Firms and individuals may be ineligible if they are nationals of ineligible countries as indicated in Section V. The countries, persons or entities are ineligible if (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the

<sup>&</sup>lt;sup>2</sup> Other than Force Account units, as permitted under paragraph 3.9 of the Procurement Guidelines

United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.

#### **B.** Contents of the Prequalification Document

6. Sections of Prequalification
 b.1 This Prequalification Document consists of parts 1 and 2 which comprise all the sections indicated below, and which should be read in conjunction with any Addendum issued in accordance with ITA 8.

PART 1 Prequalification Procedures

- Section I. Instructions to Applicants (ITA)
- Section II. Prequalification Data Sheet (PDS)
- Section III Qualification Criteria and Requirements
- Section IV. Application Forms
- Section V. Eligible Countries
- Section VI. Bank Policy Corrupt and Fraudulent practices

PART 2 Works Requirements

- Section VII. Scope of Works
- 6.2 Unless obtained directly from the Employer, the Employer accepts no responsibility for the completeness of the document, responses to requests for clarification, the minutes of the pre-Application meeting (if any), or Addenda to the Prequalification Document in accordance with ITA 8. In case of any discrepancies, documents issued directly by the Employer shall prevail.
- 6.3 The Applicant is expected to examine all instructions, forms, and terms in the Prequalification Document and to furnish with its Application all information or documentation as is required by the Prequalification Document.
- 7. Clarification of 7.1 A prospective Applicant requiring any clarification of the Prequalification Pregualification Document shall contact the Employer in writing at the Employer's address **Document and** indicated in the PDS. The Employer will respond in writing to any request **Pre-Application** for clarification provided that such request is received no later than fourteen Meeting (14) days prior to the deadline for submission of the applications. The Employer shall forward a copy of its response to all prospective Applicants who have obtained the Prequalification Document directly from the Employer, including a description of the inquiry but without identifying its source. If so indicated in the PDS, the Employer shall also promptly publish its response at the web page identified in the PDS. Should the Employer deem it necessary to amend the Prequalification Document as a result of a clarification, it shall do so following the procedure under ITA8

and in accordance with the provisions of ITA 17.2.

- 7.2 If indicated in the **PDS**, the prospective Applicant's designated representative is invited at the Applicant's cost to attend a pre-Application meeting at the place, date and time mentioned in the **PDS**. During this pre-Application meeting, prospective Applicants may request clarification of the project requirement, the criteria for qualifications or any other aspects of the Prequalification Document.
- 7.3 Minutes of the pre-Application meeting, if applicable, including the text of the questions asked by Applicants, including those during the meeting(without identifying the source) and the responses given, together with any responses prepared after the meeting will be transmitted promptly to all prospective Applicants who have obtained the Prequalification Document. Any modification to the Prequalification Document that may become necessary as a result of the pre-Application meeting shall be made by the Employer exclusively through the use of an Addendum pursuant to ITA 8. Non-attendance at the pre-Application meeting will not be a cause for disqualification of an Applicant.
- 8. Amendment of Prequalification Document
   8.1 At any time prior to the deadline for submission of Applications, the Employer may amend the Prequalification Document by issuing an Addendum.
  - 8.2 Any Addendum issued shall be part of the Prequalification Document and shall be communicated in writing to all prospective Applicants who have obtained the Prequalification Document from the Employer. The Employer shall promptly publish the Addendum at the Employer's web page identified in the **PDS**.
  - 8.3 To give prospective Applicants reasonable time to take an Addendum into account in preparing their Applications, the Employer may, at its discretion, extend the deadline for the submission of Applications in accordance with ITA 17.2.

### **C.** Preparation of Applications

9. Cost of 9.1 The Applicant shall bear all costs associated with the preparation and submission of its Application. The Employer will in no case be responsible **Applications** or liable for those costs, regardless of the conduct or outcome of the prequalification process. 10.1 The Application as well as all correspondence and documents relating to **10.** Language of Application the prequalification exchanged by the Applicant and the Employer, shall be written in the language specified in the PDS. Supporting documents and printed literature that are part of the Application may be in another language, provided they are accompanied by an accurate translation of the relevant passages in the language specified in the PDS, in which case, for purposes of interpretation of the Application, the translation shall govern. **11. Documents** 11.1 The Application shall comprise the following: **Comprising the** Application Submission Form, in accordance with ITA 12.1; (a) Application (b) documentary evidence establishing the Applicant's eligibility, in accordance with ITA 13.1; documentary evidence establishing the Applicant's qualifications, in (c) accordance with ITA 14; and (d) any other document required as specified in the PDS. 11.2 The Applicant shall furnish information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Application **12. Application** 12.1 The Applicant shall complete an Application Submission Form as provided in Section IV, Application Forms. This Form must be completed without Submission Form any alteration to its format. 13.1 To establish its eligibility in accordance with ITA 4, the Applicant shall **13. Documents** complete the eligibility declarations in the Application Submission Form **Establishing the** Eligibility of the and Forms ELI (eligibility) 1.1 and 1.2, included in Section IV (Application Applicant Forms). **14. Documents** 14.1 To establish its qualifications to perform the contract(s) in accordance with Establishing the Section III, Qualification Criteria and Requirements, the Applicant shall **Qualifications of** provide the information requested in the corresponding Information Sheets the Applicant included in Section IV, Application Forms. 14.2 Wherever an Application Form requires an Applicant to state a monetary amount, Applicants should indicate the EUR equivalent using the rate of exchange determined as follows:

For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in

which the amounts for that year is to be converted) was originally established.

Value of single contract - Exchange rate prevailing on the date of the contract.

Exchange rates shall be taken from the publicly available source identified in the **PDS**. Any error in determining the exchange rates in the Application may be corrected by the Employer.

- 15. Signing of the Application and Number of Copies
  15.1 The Applicant shall prepare one original of the documents comprising the Application as described in ITA 11 and clearly mark it "ORIGINAL". The original of the Application shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Applicant. In case the Applicant is a JV, the Application shall be signed by an authorized representative of the JV on behalf of the JV and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized signatories.
  - 15.2 The Applicant shall submit copies of the signed original Application, in the number specified in the **PDS**, and clearly mark them "COPY". In the event of any discrepancy between the original and the copies, the original shall prevail.

#### **D.** Submission of Applications

| 16. Sealing and<br>Identification of              | 16.1   |     | The Applicant shall enclose the original and the copies of the Application in a sealed envelope that shall:              |  |  |  |
|---|--|-----|--|--|--|--|
| Applications                                      |  | (a) | bear the name and address of the Applicant;  |  |  |  |
|   |  | (b) | be addressed to the Employer, in accordance with ITA 17.1; and   |  |  |  |
|   |  | (c) | bear the specific identification of this prequalification process indicated in the PDS 1.1.                              |  |  |  |
|   | 16.2   |     | Employer will accept no responsibility for not processing any envelope was not identified as required in ITA 16.1 above. |  |  |  |
| 17. Deadline for<br>Submission of<br>Applications | 7. Deadline for<br>Submission of17.1 Applicants may either submit their Applications by mail or b<br>Applications shall be received by the Employer at the address |     |  |  |  |  |

- 17.2 The Employer may, at its discretion, extend the deadline for the submission of Applications by amending the Prequalification Document in accordance with ITA 8, in which case all rights and obligations of the Employer and the Applicants subject to the previous deadline shall thereafter be subject to the deadline as extended.
- **18.LateApplications** 18.1 The Employer reserves the right to accept applications received after the deadline for submission of applications, unless otherwise specified in the **PDS**.
- 19. Opening of Applications19.1 The Employer shall open all Applications at the date, time and place specified in the PDS. Late Applications shall be treated in accordance with ITA 18.1.
  - 19.2 Applications submitted electronically (if permitted pursuant to ITA 17.1) shall be opened in accordance with the procedures specified in the **PDS**.
  - 19.3 The Employer shall prepare a record of the opening of Applications to include, as a minimum, the name of the Applicants. A copy of the record shall be distributed to all Applicants.

#### **E. Procedures for Evaluation of Applications**

- **20. Confidentiality** 20.1 Information relating to the Applications, their evaluation and result shall not be disclosed to Applicants or any other persons not officially concerned with the prequalification process until the notification of prequalification results is made to all Applicants in accordance with ITA 28.
  - 20.2 From the deadline for submission of Applications to the time of notification of the results of the prequalification in accordance with ITA 28, any Applicant that wishes to contact the Employer on any matter related to the prequalification process (except as specified in 20.1 above), may do so only in writing.
- 21. Clarification of Applications21.1 To assist in the evaluation of Applications, the Employer may, at its discretion, ask an Applicant for a clarification (including missing documents) of its Application, to be submitted within a stated reasonable period of time. Any request for clarification from the Employer and all clarifications from the Applicant shall be in writing.
  - 21.2 If an Applicant does not provide clarifications and/or documents requested by the date and time set in the Employer's request for clarification, its Application shall be evaluated based on the information and documents available at the time of evaluation of the Application.
- **22. Responsiveness** 22.1 The Employer may reject any Application which is not responsive to the requirements of the Prequalification Document. In case the information

furnished by the Applicant is incomplete or otherwise requires clarification as per ITA 21.1, and the Applicant fails to provide satisfactory clarification and/or missing information, it may result in disqualification of the Applicant.

- 23. Domestic
   Bidder Price
   Preference
   23.1 Unless otherwise specified in the PDS, a margin of preference for domestic bidders<sup>3</sup> shall not apply in the bidding process resulting from this prequalification.
- **24. Sub-contractors** 24.1 Unless otherwise stated in the **PDS**, the Employer does not intend to execute any specific elements of the Works by sub-contractors selected in advance by the Employer.
  - 24.2 The Employer may decide to permit subcontracting for certain specialized works as indicated in Section III 4.2, Experience. The Employer may do so at its own initiative or at the request of the Applicants during the prequalification process (if justified). When subcontracting is permitted by the Employer, the specialized sub-contractors experience shall be considered for evaluation. Section III describes the qualification criteria for sub-contractors.
  - 24.3 Applicants may propose subcontracting to the percentage of the total value of the contract or the volume of works mentioned in the **PDS** and as further described in ITA 25.2.

#### F. Evaluation of Applications and Prequalification of Applicants

- 25. Evaluation of Applications25.1 The Employer shall use the factors, methods, criteria, and requirements defined in Section III, Qualification Criteria and Requirements, to evaluate the qualifications of the Applicants, and no other methods, criteria, or requirements shall be used. The Employer reserves the right to waive minor deviations from the qualification criteria if they do not materially affect the technical capability and financial resources of an Applicant to perform the contract.
  - 25.2 Applicants planning to subcontract more than 10% of total volume of work shall specify, in the Application Submission Form, the activity (ies) or parts of the works to be subcontracted along with complete details of the subcontractors and their qualification and experience. The sub-contractors proposed shall be fully qualified for their work proposed, and meet the specified criteria in Section III, failing which sub-contractors will not

<sup>&</sup>lt;sup>3</sup>An individual firm is considered a domestic bidder for purposes of the margin of preference if it is registered in the country of the Employer, has more than 50 percent ownership by nationals of the country of the Employer, and if it does not subcontract more than 10 percent of the contract price, excluding provisional sums, to foreign contractors. JVs are considered as domestic bidders and eligible for domestic preference only if the individual member firms are registered in the country of the Employer, have more than 50 percent ownership by nationals of the country of the Employer, and the JV shall be registered in the country of the Borrower. The JV shall not subcontract more than 10 percent of the contract price, excluding provisional sums, to foreign firms. JVs between foreign and national firms will not be eligible for domestic preference.

be permitted to participate. The qualification and experience of subcontractors proposed by the Applicant under ITA 24.3 will not be considered for evaluation of the Applicant. The Applicant on its own (without taking into account the qualification and experience of the subcontractor) should meet the prequalification criteria.

25.3 In case of multiple contracts, Applicants should indicate in their Applications the individual contract or combination of contracts in which they are interested. The Employer shall prequalify each Applicant for the maximum combination of contracts for which the Applicant has thereby indicated its interest and for which the Applicant meets the appropriate aggregate requirements. The Qualification Criteria and Requirements are mentioned in Section III. However, with respect to the specific experience under item 4.2 (a) of Section III, the Employer will select any one or more of the options as identified below:

N is the minimum number of contracts

V is the minimum value of a single contract

#### (a) Prequalification for one Contract:

Option 1: (i) N contracts, each of minimum value V;

Or

Option 2: (i) N contracts, each of minimum value V, Or

 (ii) Less than or equal to N contracts, each of minimum value V, but with total value of all contracts equal or more than N x V;

#### (b) Prequalification for multiple Contracts

Option 1: (i) Minimum requirements for combined contract(s) shall be the aggregate requirements for each contract for which the applicant has applied for as follows, and N1,N2,N3, etc. shall be different contracts:

Lot 1: N1 contracts, each of minimum value V1;

Lot 2: N2 contracts, each of minimum value V2;

Lot 3: N3 contracts, each of minimum value V3;

----etc.

#### Or

Option 2: (i) Minimum requirements for combined contract(s) shall be the aggregate requirements for each contract for which the applicant has applied for as follows, and N1,N2,N3, etc. shall be different contracts:

Lot 1: N1 contracts, each of minimum value V1;

Lot 2: N2 contracts, each of minimum value V2;

Lot 3: N3 contracts, each of minimum value V3;

----etc, Or

(ii) Lot 1: N1 contracts, each of minimum value V1; or number of contracts less than or equal to N1, each of minimum value V1, but with total value of all contracts equal or more than N1 x V1

Lot 2: N2 contracts, each of minimum value V2; or number of contracts less than or equal to N2, each of minimum value V2, but with total value of all contracts equal or more than N2 x V2

Lot 3: N3 contracts, each of minimum value V3; or number of contracts less than or equal to N3, each of minimum value V3, but with total value of all contracts equal or more than N3 x V3

----etc.

#### Or

Option 3: (i) Minimum requirements for combined contract(s) shall be the aggregate requirements for each contract for which the applicant has applied for as follows, and N1,N2,N3, etc. shall be different contracts:

Lot 1: N1 contracts, each of minimum value V1;

- Lot 2: N2 contracts, each of minimum value V2;
- Lot 3: N3 contracts, each of minimum value V3;

----etc, Or

(ii) Lot 1: N1 contracts, each of minimum value V1; or number of contracts less than or equal to N1, each of minimum value V1, but with total value of all contracts equal or more than N1 x V1

Lot 2: N2 contracts, each of minimum value V2; or number of contracts less than or equal to N2, each of minimum value V2, but with total value of all contracts equal or more than N2 x V2

Lot 3: N3 contracts, each of minimum value V3; or number of contracts less than or equal to N3, each of minimum value V3, but with total value of all contracts equal or more than N3 x V3

----etc. Or

- (iii) Subject to compliance as per (ii) above with respect to minimum value of single contract for each lot, total number of contracts is equal or less than N1 + N2 + N3+--but the total value of all such contracts is equal or more than N1 x V1 + N2 x V2 + N3 x V3 +---.
- 25.4 Only the qualifications of the Applicant shall be considered. In particular, the qualifications of a parent or other affiliated company that is not party to the Applicant under a JV in accordance with ITA 4.2 (or participating as a sub-contractor as per ITA 25.2) shall not be considered.
- 26.1 The Employer reserves the right to accept or reject any Application, and to **Right to Accept** annul the prequalification process and reject all Applications at any time, without thereby incurring any liability to the Applicants. or Reject **Applications**
- 27.1 All Applicants who's Applications substantially meet or exceed the specified qualification requirements will be prequalified by the Employer. of Applicants
  - 27.2 An Applicant may be "conditionally prequalified," that is, qualified subject to the Applicant submitting or correcting certain specified nonmaterial documents or deficiencies to the satisfaction of the Employer.
  - 27.3 Applicants that are conditionally prequalified will be so informed along with the statement of the condition(s) which must be met to the satisfaction of the Employer before or at the time of submitting their bids.
- 28. Notification of 28.1 The Employer shall notify all Applicants in writing of the names of those Prequalification Applicants who have been prequalified or conditionally prequalified. In addition, those Applicants who have been disqualified will be informed separately.
  - 28.2 Applicants that have not been prequalified may write to the Employer to request, in writing, the grounds on which they were disqualified.
- **29. Invitation for** 29.1 Promptly after the notification of the results of the prequalification, the Bids Employer shall invite bids from all the Applicants that have been prequalified or conditionally prequalified.
  - 29.2 Bidders may be required to provide a Bid Security or a Bid-Securing Declaration acceptable to the Employer in the form and an amount to be

- 26. Employer's
  - **27. Prequalification**

specified in the Bidding Documents, and the successful Bidder shall be required to provide a Performance Security as specified in the Bidding Documents.

**30.** Changes in 30.1 Any change in the structure or formation of an Applicant after being **Oualifications of** pregualified in accordance with ITA 27 and invited to bid (including, in the **Applicants** case of a JV, any change in the structure or formation of any member thereto) shall be subject to the written approval of the Employer prior to the deadline for submission of bids. Such approval shall be denied if (i) a prequalified applicant proposes to associate with a disqualified applicant or in case of a disqualified joint venture, any of its members; (ii) as a consequence of the change, the Applicant no longer substantially meets the qualification criteria set forth in Section III, Qualification Criteria and Requirements; or (iii) in the opinion of the Employer, the change may result in a substantial reduction in competition. Any such change should be submitted to the Employer not later than fourteen (14) days after the date of the Invitation for Bids.

## **Section II. Prequalification Data Sheet**

|   | A. General  |  |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|--|
| ITA 1.1   | The identification of the Invitation for Prequalification is: MIDP-PQ-ICB                     | The identification of the Invitation for Prequalification is: <i>MIDP-PQ-ICB-1</i> |  |  |  |  |  |  |
|   | The Employer is: Ministry Of Regional Development;  |  |  |  |  |  |  |  |
|   | Project Manager: Ivan Andreev;  |  |  |  |  |  |  |  |
|   | Address: Room 301, 3rd floor, 17-19 "Sv. sv. Kiril i Metodiy                                  | v" str.  |  |  |  |  |  |  |
|   | Sofia, Bulgaria   |  |  |  |  |  |  |  |
|   | The list of contracts is: Project ID No: P099895-II,  |  |  |  |  |  |  |  |
|   | Contract No MIDP-CW-ICB-1"  |  |  |  |  |  |  |  |
|   | Municipal Infrastructure Development Project:   |  |  |  |  |  |  |  |
|   | Construction of Luda Yana Dam and WTP   |  |  |  |  |  |  |  |
|   | ICB name and number are: <i>MIDP-CW-ICB-1</i>   |  |  |  |  |  |  |  |
| ITA 2.1       The name of the Borrower is: Republic of Bulgaria |   |  |  |  |  |  |  |  |
|   | The name of the Project is: Municipal Infrastructure Development Project                      |  |  |  |  |  |  |  |
| ITA 4.2   | Maximum number of members in the JV shall be: <i>not limited</i>                              |  |  |  |  |  |  |  |
| ITA 4.8   | The electronic address of firms and individuals debarred by the Bank is:                      |  |  |  |  |  |  |  |
|   | http://www.worldbank.org/debarr.  |  |  |  |  |  |  |  |
|   | <b>B.</b> Contents of the Prequalification Document   |  |  |  |  |  |  |  |
| ITA 7.1   | For <b>clarification purposes</b> , the Employer's address is: <i>Same as in ITA1.1 above</i> | !  |  |  |  |  |  |  |
|   | Attention: Andrey Andreev, 3rd floor, room 301  |  |  |  |  |  |  |  |
|   | Address: 17-19 "Sv. sv. Kiril i Metodiy" str., Sofia, Bulgaria                                |  |  |  |  |  |  |  |
|   | City: Sofia   |  |  |  |  |  |  |  |
|   | ZIP Code: 1202  |  |  |  |  |  |  |  |
|   | Country: Republic of Bulgaria   |  |  |  |  |  |  |  |
|   | Telephone: +35929405291   |  |  |  |  |  |  |  |
|   | Facsimile number:+35929872517   |  |  |  |  |  |  |  |
|   | Electronic mail address: <u>aandreev@mrrb.government.bg</u>                                   |  |  |  |  |  |  |  |

| ITA 7.1 & 8.2 | Web page: <u>www.mrrb.government.bg</u>  |
|---------------|--|
| ITA 7.2       | Pre-Application Meeting will be held: <i>No</i>  |
|               | C. Preparation of Applications   |
| ITA 10.1      | This Prequalification document has been issued in <i>English</i> language.   |
|               | All correspondence exchange shall be in <i>English</i> language.   |
|               | The Application as well as all correspondence shall be submitted in English.   |
|               | Language for translation of supporting documents and printed literature is <i>English</i> .  |
| ITA 11.1 (d)  | <ul> <li>The Applicant shall submit with its Application, the following additional documents:</li> <li><i>True copy of document for legal company registration and certificate of good standing/ certificate for current status; foreign companies submit</i></li> </ul> |
|               | equivalent document of the respective country;   |
|               | - True copy of certificate from the Bulgarian Construction Chamber; foreign companies submit true copy of equivalent document accompanied by official translation in English;  |
|               | - List of similar objects executed in the last 10 years accompanied by references for satisfactory execution of the task assigned (conformity with the norms of construction);   |
|               | - True copy/copies of relevant ISO certificates;   |
| ITA 14.2      | The source for determining exchange rates is <i>Bulgarian National Bank www.bnb.bg</i>   |
| ITA 15.2      | In addition to the original, the number of copies to be submitted with the Application is: $3$   |

|          | <b>D. Submission of Applications</b>  |  |  |  |  |  |  |  |
|----------|---|--|--|--|--|--|--|--|
| ITA 17.1 | The deadline for Application submission is:   |  |  |  |  |  |  |  |
|          | Date: 23 April 2014   |  |  |  |  |  |  |  |
|          | Time:12:00 noon   |  |  |  |  |  |  |  |
|          | Applicants <i>shall not</i> have the option of submitting their Applications electronically.  |  |  |  |  |  |  |  |
|          | Applicants are requested to submit an electronic copy on CD of their application. However for the purposes of pre-qualification the hard copy of the application will prevail.  |  |  |  |  |  |  |  |
|          | For application submission purposes only, the Employer's address is: <i>the same as that indicated in ITA 1.1</i>   |  |  |  |  |  |  |  |
| ITA 18.1 | The Employer reserves the right to accept or reject late applications.  |  |  |  |  |  |  |  |
| ITA 19.1 | The opening of the Applications shall be on 23 April 2014, at 14:00 P.M. in the MRD, 17-19 "Sv. sv. Kiril i Metodiy" str., Sofia, Bulgaria  |  |  |  |  |  |  |  |
|          | E. Procedures for Evaluation of Applications  |  |  |  |  |  |  |  |
| ITA 23.1 | A margin of preference <i>shall not</i> apply for eligible domestic bidders.  |  |  |  |  |  |  |  |
| ITA 24.1 | At this time the Employer <i>does not intend to</i> execute certain specific parts of the Works by sub-contractors selected in advance.   |  |  |  |  |  |  |  |
| ITA 24.3 | Maximum percentage of subcontracting permitted is 30% of the total value of the contract or 30% of the volume of works.   |  |  |  |  |  |  |  |
|          | Applicants planning to subcontract more than 10% of total volume of works shall specify, in the Application Submission Form, the activity (ies) or parts of the works to be subcontracted along with complete details of the sub-contractors and their qualification and experience. The qualification and experience of the sub-contractors must meet the minimum criteria for the relevant works to be subcontracted failing which such sub-contractors will not be permitted to participate. |  |  |  |  |  |  |  |
|          | Sub-contractors' qualification and experience will not be considered for<br>evaluation of the Applicant. The Applicant on its own (without taking into<br>account the qualification and experience of the sub-contractor) should meet the<br>prequalification criteria.   |  |  |  |  |  |  |  |

## Section III. Qualification Criteria and Requirements

This Section contains all the methods, criteria, and requirements that the Employer shall use to evaluate Applications. The information to be provided in relation to each requirement and the definitions of the corresponding terms are included in the respective Application Forms.

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| 1. Eligibility                         | 22 |
|--|----|
| 2. Historical Contract Non-Performance |    |
| 3. Financial Situation                 |    |
| 4. Experience                          |    |
| ···· P •···•••                         |    |

|      | Eligibility and Qualifica                                 | ation Criteria  |                          | Complian                 | ce Requirements          |            | Documentation                                   |
|------|---|---|--------------------------|--------------------------|--------------------------|------------|---|
|      | Subject   |   |                          | Joint V                  |                          |            |   |
| No.  |   | Requirement   | Single Entity            | All Parties<br>Combined  | Each Member              | One Member | Submission<br>Requirements                      |
| 1. E | ligibility  |   |                          | ·                        |                          |            |   |
| 1.1  | Nationality   | Nationality in<br>accordance with ITA<br>4.5  | Must meet requirement    | Must meet requirement    | Must meet<br>requirement | N/A        | Forms ELI – 1.1<br>and 1.2, with<br>attachments |
| 1.2  | Conflict of Interest                                      | No conflicts of<br>interest in<br>accordance with ITA<br>4.6  | Must meet<br>requirement | Must meet<br>requirement | Must meet<br>requirement | N/A        | Application<br>Submission<br>Form               |
| 1.3  | Bank Eligibility  | Not having been<br>declared ineligible by<br>the Bank, as<br>described in ITA 4.7<br>and 5.1  | Must meet<br>requirement | Must meet<br>requirement | Must meet<br>requirement | N/A        | Application<br>Submission<br>Form               |
| 1.4  | Government Owned<br>Entity of the Borrower<br>country     | Meet conditions of ITA 4.9  | Must meet<br>requirement | Must meet requirement    | Must meet<br>requirement | N/A        | Forms ELI – 1.1<br>and 1.2, with<br>attachments |
| 1.5  | United Nations<br>resolution or Borrower's<br>country law | Not having been<br>excluded as a result<br>of prohibition in the<br>Borrower's country<br>laws or official<br>regulations against<br>commercial relations<br>with the Applicant's<br>country, or by an act<br>of compliance with<br>UN Security Council<br>resolution, both in<br>accordance with ITA<br>5.1 and Section V. | Must meet<br>requirement | Must meet<br>requirement | Must meet<br>requirement | N/A        | Forms ELI – 1.1<br>and 1.2, with<br>attachments |

|      | Eligibility and Qualification  | ation Criteria  |                          | Compliance                |                                       | Documentation |                                   |
|------|--|---|--------------------------|---------------------------|---------------------------------------|---------------|-----------------------------------|
| Na   | Subject  | Dequinement   | Cinale Entitud           | Joint V                   | Cubmission                            |               |                                   |
| No.  |  | Requirement   | Single Entity            | All Parties<br>Combined   | Each Member                           | One Member    | Submission<br>Requirements        |
| 2. H | istorical Contract Non-Pe  | erformance  |                          |                           |                                       |               |                                   |
| 2.1  | History of Non-<br>Performing Contracts  | Non-performance of<br>a contract <sup>4</sup> did not<br>occur as a result of<br>contractor's default<br>since 1 <sup>st</sup> January<br>2009  | Must meet<br>requirement | Must meet<br>requirements | Must meet<br>requirement <sup>5</sup> | N/A           | Form CON-2                        |
| 2.2  | Suspension Based on<br>Execution of Bid<br>Securing Declaration by<br>the Employer | Not under<br>suspension based<br>on execution of a Bid<br>Securing Declaration<br>pursuant to ITA 4.10.   | Must meet<br>requirement | Must meet<br>requirement  | Must meet<br>requirement              | N/A           | Application<br>Submission<br>Form |
| 2.3  | Pending Litigation   | Applicant's financial<br>position and<br>prospective long<br>term profitability still<br>sound according to<br>criteria established in<br>3.1 below and<br>assuming that all<br>pending litigation will<br>be resolved against<br>the Applicant | Must meet<br>requirement | N/A                       | Must meet<br>requirement              | N/A           | Form CON – 2                      |
| 2.4  | Litigation History   | No consistent history<br>of court/arbitral<br>award decisions   | Must meet<br>requirement | Must meet requirement     | Must meet<br>requirement              | N/A           | Form CON – 2                      |

<sup>&</sup>lt;sup>4</sup>Non performance, as decided by the Employer, shall include all contracts where (a) nonperformance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non -performance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Non performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the applicant have been exhausted.

<sup>&</sup>lt;sup>5</sup> This requirement also applies to contracts executed by the Applicant as JV member.

|      | Eligibility and Qualific | ation Criteria  |  | Compliance   | ce Requirements |            | Documentation                          |
|------|--------------------------|---|--|--|-----------------|------------|--|
|      | Quil is st               | Deminent  |  | Joint V  | r intended)     |            |  |
| No.  | . Subject Requirer       | Requirement   | t Single Entity                                      | All Parties<br>Combined                              | Each Member     | One Member | Submission<br>Requirements             |
|      |                          | against the<br>Applicant <sup>6</sup> since 1 <sup>st</sup><br>January[2009]  |  |  |                 |            |  |
| 3. F | inancial Situation and P | erformance  |  |  |                 |            |  |
| 3.1  | Financial Capabilities   | (i) The Applicant<br>shall demonstrate<br>that it has access to,<br>or has available,<br>liquid assets,<br>unencumbered real<br>assets, lines of<br>credit, and other<br>financial means<br>(independent of any<br>contractual advance<br>payment) sufficient<br>to meet the<br>construction cash<br>flow requirements<br>estimated as <i>EUR</i><br><i>3.5 million</i> for the<br>subject contract(s)<br>net of the Applicants<br>other commitments<br>(ii) The Applicant<br>shall also<br>demonstrate, to the<br>satisfaction of the<br>Employer, that it has<br>adequate sources of<br>finance to meet the | Must meet<br>requirement<br>Must meet<br>requirement | Must meet<br>requirement<br>Must meet<br>requirement | N/A<br>N/A      | N/A<br>N/A | Form FIN – 3.1,<br>with<br>attachments |

<sup>&</sup>lt;sup>6</sup>The Applicant shall provide accurate information on the related Application Form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last five years. A consistent history of awards against the Applicant or any member of a joint venture may result in failure of the application.

|     | Eligibility and Qualification           | ation Criteria   |                          | Compliance               | e Requirements   |   | Documentation  |
|-----|---|--|--------------------------|--------------------------|--|---|----------------|
| No. | Subject                                 | Dequirement  | Single Entitu            |                          | intended)  | Submission  |                |
| NO. | Subject                                 | Requirement  | Single Entity            | All Parties<br>Combined  | Each Member  | One Member  | Requirements   |
|     |   | cash flow<br>requirements on<br>works currently in<br>progress and for<br>future contract<br>commitments.<br>(iii) The audited<br>balance sheets or, if<br>not required by the<br>laws of the<br>Applicant's country,<br>other financial<br>statements<br>acceptable to the<br>Employer, for the<br>last <b>5</b> years shall be<br>submitted and must<br>demonstrate the<br>current soundness of<br>the Applicant's<br>financial position and<br>indicate its<br>prospective long-<br>term profitability. | Must meet<br>requirement | N/A                      | Must meet<br>requirement   | N/A   |                |
| 3.2 | Average Annual<br>Construction Turnover | Minimum average<br>annual construction<br>turnover of EUR 21<br><i>million</i> , calculated as<br>total certified<br>payments received<br>for contracts in<br>progress and/or<br>completed within the<br>last 3 years, divided<br>by 3 years.  | Must meet<br>requirement | Must meet<br>requirement | Must meet 20%,<br>[ <i>twenty percent</i> ]<br>of the<br>requirement | Must meet 50%,<br>[fifty percent] of<br>the requirement | Form FIN – 3.2 |

|             | Eligibility and Qualification                                | ation Criteria   |                          | Complianc                              | e Requirements           |            | Documentation      |
|-------------|--|--|--------------------------|--|--------------------------|------------|--------------------|
| No.         | Subject  | Requirement  | Single Entity            |  | intended)                | Submission |                    |
| NO.         | Subject  | Requirement  | Single Entity            | All Parties<br>Combined                | Each Member              | One Member | Requirements       |
| <b>4.</b> E | xperience  |  | •                        | ·                                      | ·                        |            |                    |
| 4.1<br>(a)  | General Construction<br>Experience                           | Experience under<br>construction<br>contracts in the role<br>of prime contractor,<br>JV member, sub-<br>contractor, or<br>management<br>contractor for at least<br>the last [10] years<br>starting 1 <sup>st</sup> January<br>2004   | Must meet<br>requirement | N/A                                    | Must meet<br>requirement | N/A        | Form EXP – 4.1     |
| 4.2<br>(a)  | Specific Construction &<br>Contract Management<br>Experience | (i) A minimum<br>number of similar <sup>7</sup><br>contracts<br>specified below that<br>have been<br>satisfactorily and<br>substantially <sup>8</sup><br>completed as a<br>prime contractor,<br>joint venture<br>member <sup>9</sup> ,<br>management<br>contractor or sub- | Must meet<br>requirement | Must meet<br>requirement <sup>10</sup> | N/A                      | N/A        | Form EXP<br>4.2(a) |

<sup>&</sup>lt;sup>7</sup>The similarity shall be based on the physical size, complexity, methods/technology and/or other characteristics described in Section VI, Scope of Works. Summation of number of small value contracts (less than the value specified under requirement) to meet the overall requirement will not be accepted.

<sup>8</sup> Substantial completion shall be based on 80% or more works completed under the contract.

<sup>&</sup>lt;sup>9</sup> For contracts under which the Applicant participated as a joint venture member or sub-contractor, only the Applicant's share, by value, shall be considered to meet this requirement.

<sup>&</sup>lt;sup>10</sup>In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

|     | Eligibility and Quali | fication Criteria   |               | Compliand                            | e Requirements |            | Documentation              |
|-----|-----------------------|---|---------------|--------------------------------------|----------------|------------|----------------------------|
|     |                       |   | Single Entity | Joint Venture (existing or intended) |                |            |                            |
| No. | Subject Requireme     | Requirement   |               | All Parties<br>Combined              | Each Member    | One Member | Submission<br>Requirements |
|     |                       | contract or between<br>1st January 2004<br>and application<br>submission deadline;<br><i>Similarity shall</i><br>include :<br>(i] two (2) contracts<br>for construction of<br>dams, each of<br>minimum EUR 21.1<br>million. Out of these,<br>at least one should<br>include construction<br>and putting into<br>operation of dam<br>classified by ICOLD<br>(International<br>Commission on<br>Large Dams) as<br>"large", and one<br>should include<br>construction of at<br>least one PWTP with<br>capacity 300 l/s.<br>These two<br>requirements may be<br>met by the same<br>contract or by the<br>two separate<br>contracts. |               |                                      |                |            |                            |

|            | Eligibility and Qualification | ation Criteria   |  |                            | e Requirements      |   | Documentation         |
|------------|-------------------------------|--|--|----------------------------|---------------------|---|-----------------------|
| No.        | Subject                       | Requirement  | Single Entity  |                            | enture (existing or |   | Submission            |
|            | Casjeer                       |  |  | All Parties<br>Combined    | Each Member         | One Member  | Requirements          |
|            |                               | <ul> <li>(ii) For the following specialized works, the Employer permits specialized sub-contractors as per ITA 24.2:</li> <li>construction of Potable Water Treatment Plant</li> <li>Geodesy works</li> <li>Construction-erecting works</li> <li>Earthworks</li> </ul>   | "Must meet<br>requirement<br>for one<br>contract<br>(Requirement<br>can be met<br>through a<br>Specialized<br>Sub-<br>contractor)" | "Must meet<br>requirement" | N/A                 | "Must meet<br>requirement<br>(Requirement<br>can be met<br>through a<br>Specialized<br>Sub-contractor)" |                       |
| 4.2<br>(b) |                               | For the above and<br>any other contracts<br>completed and<br>under<br>implementation as<br>prime contractor,<br>joint venture<br>member,<br>management<br>contractor or sub-<br>contractor or sub-<br>contractor between<br>1st January 2004<br>and application<br>submission deadline,<br>a minimum<br>construction<br>experience in the<br>following key<br>activities<br>successfully | Must meet<br>requirements  | Must meet<br>requirements  | N/A                 | N/A   | Form EXP – 4.2<br>(b) |

| ap<br>of<br>th<br>pe<br> | ompleted <sup>11</sup> by<br>pplicant in any one<br>f the years during<br>ne given time<br>eriod:<br><i>at least 35 000 m<sup>3</sup></i><br><i>f fill works;</i><br><i>at least 8 000</i><br>d <sup>3</sup> excavation works;<br><i>implementation of</i> |  |  |
|--------------------------|--|--|--|
| ci                       | arth-fill dam with<br>lay core or other<br>ermeable element  |  |  |
|                          | nade of natural<br>naterials (i.e. clay  |  |  |
|                          | creen, clay core,<br>tc.)  |  |  |

<sup>&</sup>lt;sup>11</sup> Volume, number or rate of production of any key activity can be demonstrated in one or more contracts combined if executed during same time period. The rate of production shall be the annual production rate for the key construction activity (or activities)in any one of the years during the given time period.

# **Section IV. Application Forms**

### **Table of Forms**

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|   |    |

## **Application Submission Form**

Date: [insert day, month, and year] ICB No. and title: [insert ICB number and title]

To: Ministry of Regional Development

We, the undersigned, apply to be prequalified for the referenced ICB and declare that:

- (a) We have examined and have no reservations to the Prequalification Document, including Addendum(s) No(s)., issued in accordance with Instructions to Applicants (ITA) 8: [insert the number and issuing date of each addendum].
- (b) We have no conflict of interest in accordance with ITA 4.6;
- (c) We meet the eligibility requirements as stated ITA 4.1, we have not been suspended by the Employer based on execution of a Bid Securing Declaration in accordance with ITA 4.10;
- (d) We, in accordance with ITA 24.2, plan to subcontract the following key activities and/or parts of the works:

[Insert any of the key activities identified in Section III- 4.2(a) or (b) which the Employer has permitted under the Prequalification document and which the Applicant intends to subcontract along with complete details of the sub-contractors, their qualification and experience]

(e) We declare that the following commissions, gratuities, or fees have been paid or are to be paid with respect to the prequalification process, the corresponding bidding process or execution of the Contract:

| Name of Recipient                         | Address | Reason            | Amount  |
|---|---------|-------------------|---|
| [insert full name for<br>each occurrence] | -       | [indicate reason] | [specify amount<br>currency, value,<br>exchange rate and<br>EUR equivalent] |
|   |         |                   |   |
|   |         |                   |   |

[If no payments are made or promised, add the following statement: "No commissions or gratuities have been or are to be paid by EUR to agents or any third party relating to this Application]

(f) We understand that you may cancel the prequalification process at any time and that you are

neither bound to accept any Application that you may receive nor to invite the prequalified Applicants to bid for the contract subject of this prequalification process, without incurring any liability to the Applicants, in accordance with ITA 26.1.

(g) All information, statements and description contained in the Application are in all respect true, correct and complete to the best of our knowledge and belief.

Signed [insert signature(s) of an authorized representative(s) of the Applicant]

*Name* [insert full name of person signing the Application]

In the capacity of [insert capacity of person signing the Application]

Duly authorized to sign the Application for and on behalf of:

Applicant's Name [insert full name of Applicant or the name of the JV]

Address [insert street number/town or city/country address]

Dated on [insert day number] day of [insert month], [insert year]

[For an a joint venture, either all members shall sign or only the authorized representative, in which case the power of attorney to sign on behalf of all members shall be attached]

## Form ELI -1.1 Applicant Information Form

Date: [insert day, month, year] ICB No. and title: [insert ICB number and title] Page[insert page number]of [insert total number]pages

Applicant's name

[insert full name]

In case of Joint Venture (JV), name of each member:

[insert full name of each member in JV]

Applicant's actual or intended country of registration:

[indicate country of Constitution]

Applicant's actual or intended year of incorporation:

[indicate year of Constitution]

Applicant's legal address [in country of registration]:

[insert street/ number/ town or city/ country]

Applicant's authorized representative information

Name: [insert full name]

Address: [insert street/ number/ town or city/ country]

Telephone/Fax numbers: [insert telephone/fax numbers, including country and city codes]

E-mail address: [indicate e-mail address]

1. Attached are copies of original documents of

- □ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITA 4.5.
- □ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITA 4.2.
- □ In case of Government-owned enterprise or institution, in accordance with ITA 4.9 documents establishing:
  - Legal and financial autonomy
  - Operation under commercial law
  - Establishing that the Applicant is not dependent agency of the Employer
- 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

## Form ELI -1.2 Applicant's Party Information Form

[The following form is additional to Form ELI - 1.1., and shall be completed to provide information relating to each JV member (in case the Applicant is a JV) as well as any Specialized Sub-contractor proposed to be used by the Applicant for any part of the Contract resulting from this prequalification]

Date: [insert day, month, year] ICB No. and title: [insert ICB number and title] Page [insert page number]of [insert total number]pages

| Applicant name:   |
|---|
| [insert full name]  |
| Applicant's Party name:   |
| [insert full name of Applicant's Party]   |
| Applicant's Party country of registration:  |
| [indicate country of registration]  |
| Applicant Party's year of constitution:   |
| [indicate year of constitution]   |
| Applicant Party's legal address in country of constitution:   |
| [insert street/ number/ town or city/ country]  |
| Applicant Party's authorized representative information   |
| Name: [insert full name]  |
| Address: [insert street/ number/ town or city/ country]   |
| Telephone/Fax numbers: [insert telephone/fax numbers, including country and city codes]   |
| E-mail address: [indicate e-mail address]   |
| 1. Attached are copies of original documents of   |
| Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITA 4.5.  |
| □ In case of a Government-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and absence of dependent status, in accordance with ITA 4.9. |
| 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.   |

## Form CON – 2

## Historical Contract Non-Performance, Pending Litigation and Litigation History

[The following table shall be filled in for the Applicant and for each member of a Joint Venture]

Applicant's Name: [insert full name] Date: [insert day, month, year] Joint Venture Member Name:[insert full name] ICB No. and title: [insert ICB number and title] Page [insert page number] of [insert total number] pages

| Non-Performed Contracts in accordance with Section III, Qualification Criteria and          |  |                                   |   |  |  |  |  |
|---|--|-----------------------------------|---|--|--|--|--|
|   | Requirements   |                                   |   |  |  |  |  |
|   | <ul> <li>Contract non-performance did not occur since 1<sup>st</sup> January [insert year] specified in Section III,<br/>Qualification Criteria and Requirements, Sub-Factor 2.1.</li> </ul> |                                   |   |  |  |  |  |
|   | Contract(s) not performed since 1 <sup>st</sup> January <i>[insert year]</i> specified in Section III, Qualification Criteria and Requirements, requirement 2.1                              |                                   |   |  |  |  |  |
| Year Non-<br>performed<br>portion of<br>contract  |  | performed<br>portion of           | Contract Identification   | Total Contract<br>Amount (current<br>value, currency,<br>exchange rate<br>and EUR<br>equivalent) |  |  |  |
| [insei<br>year]   |  | [insert amount<br>and percentage] | Contract Identification: [indicate complete contract<br>name/ number, and any other identification]<br>Name of Employer: [insert full name] | [insert amount]  |  |  |  |
|   |  |                                   | Address of Employer: [insert street/city/country]   |  |  |  |  |
|   |  |                                   | Reason(s) for non-performance: [indicate main reason(s)]  |  |  |  |  |
| Pending Litigation, in accordance with Section III, Qualification Criteria and Requirements |  |                                   |   |  |  |  |  |
|   | No pending litigation in accordance with Section III, Qualification Criteria and Requirements,<br>Sub-Factor 2.3.  |                                   |   |  |  |  |  |
|   | Pending litigation in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.3 as indicated below.   |                                   |   |  |  |  |  |

| Year of<br>dispute | Amount in dispute<br>(currency)                   | Contract Identification  | Total Contract<br>Amount<br>(currency), USD<br>Equivalent<br>(exchange rate) |
|--------------------|---|--|--|
| [insert<br>year]   | [insert amount]                                   | Contract Identification: [indicate<br>complete contract name, number, and<br>any other identification]<br>Name of Employer: [insert full name]<br>Address of Employer: [insert<br>street/city/country]<br>Matter in dispute: [indicate main issues<br>in dispute]<br>Party who initiated the dispute: [indicate<br>"Employer" or "Contractor"]<br>Status of dispute: [Indicate if it is being<br>treated by the Adjudicator, under<br>Arbitration or being dealt with by the | [insert amount]  |
|                    |   | Judiciary]   |  |
| History of c       | court/arbitral award de                           | cisions against the Applicant  |  |
| Criteria and       | Requirements, Sub-Fa<br>rt/arbitral decisions aga | against the Applicant in accordance with Section<br>actor 2.4.<br>ainst the Applicant in accordance with Section 1<br>actor 2.4 as indicated below.  |  |
| Year of            | Outcome as  | Contract Identification  | Total Contract   |
| award              | percentage of Net                                 |  | Amount   |
|                    | Worth   |  | (currency), USD<br>Equivalent<br>(exchange rate)                             |
| [insert            | [insert   | Contract Identification: [indicate   | [insert amount]  |
| [inseri<br>year]   | percentage]                                       | complete contract name, number, and  | [insert amount]  |
|                    |   | any other identification]  |  |
|                    |   | Name of Employer: [insert full name]<br>Address of Employer: [insert   |  |
|                    |   | street/city/country]   |  |
|                    |   | Matter in dispute: [indicate main issues   |  |
|                    |   | in dispute]  |  |
|                    |   | Party who initiated the dispute: [indicate   |  |
|                    |   | "Employer" or "Contractor"]  |  |
|                    |   | Outcome of dispute: [Indicate if it is   |  |
|                    |   | being treated by the Adjudicator, under  |  |
|                    |   | Arbitration or being dealt with by the Judiciary]  |  |

## Form FIN – 3.1 Financial Situation and Performance

[The following table shall be filled in for the Applicant and for each member of a Joint Venture] Applicant's Name: [insert full name] Applicant's Party Name:[insert full name] ICB No. and title: [insert ICB number and title]

Page [insert page number] of [insert total number] pages

| Type of Financial<br>information in<br>(currency) | Historic information for previous _[insert number] years,<br>[insert in words]<br>(amount in currency, currency, exchange rate*, EUR<br>equivalent) |                      |           |       |        |  |  |
|---|---|----------------------|-----------|-------|--------|--|--|
|   | Year 1  | Year 2               | Year 3    | Year4 | Year 5 |  |  |
|   |   |                      |           |       |        |  |  |
|   |   | of Financial         |           |       |        |  |  |
| Total Assets (TA)                                 | (Information  | <u>ı from Balanc</u> | e Sheet)  |       |        |  |  |
| Total Liabilities (TL)                            |   |                      |           |       |        |  |  |
| Total Equity/Net Worth (NW)                       |   |                      |           |       |        |  |  |
| Current Assets (CA)                               |   |                      |           |       |        |  |  |
| Current Liabilities (CL)                          |   |                      |           |       |        |  |  |
| Working Capital (WC)                              |   |                      |           |       |        |  |  |
|   | Information   | from Income          | Statement |       |        |  |  |
| Total Revenue (TR)                                |   |                      |           |       |        |  |  |
| Profits Before Taxes (PBT)                        |   |                      |           |       |        |  |  |
|   |   | Cash Flow In         | formation |       |        |  |  |
| Cash Flow from Operating<br>Activities            |   |                      |           |       |        |  |  |

#### 1. Financial data

#### \* Refer ITA 14 for the exchange rate

#### 2. Sources of Finance

[The following table shall be filled in for the Applicant and all parties combined in case of a Joint Venture]

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

| No. | Source of finance | Amount (EUR equivalent) |
|-----|-------------------|-------------------------|
| 1   |                   |                         |
| 2   |                   |                         |
| 3   |                   |                         |
|     |                   |                         |

#### **3. Financial documents**

The Applicant and its parties shall provide copies of financial statements for *[number]* years pursuant Section III, Qualifications Criteria and Requirements, Sub-factor 3.1. The financial statements shall:

- (a) reflect the financial situation of the Applicant or in case of JV member, and not an affiliated entity (such as parent company or group member).
- (b) be independently audited or certified in accordance with local legislation.
- (c) be complete, including all notes to the financial statements.
- (d) correspond to accounting periods already completed and audited.
- $\Box$  Attached are copies of financial statements<sup>12</sup> for the *[number]* years required above; and complying with the requirements

<sup>&</sup>lt;sup>12</sup> If the most recent set of financial statements is for a period earlier than 12 months from the date of application, the reason for this should be justified.

## Form FIN - 3.2 Average Annual Construction Turnover

[The following table shall be filled in for the Applicant and for each member of a Joint Venture]

Applicant's/Joint Venture Member's Name: [insert full name] Date: [insert day, month, year] Applicant's Party Name: [insert full name] ICB No. and title: [insert ICB number and title] Page [insert page number]of [insert total number]pages

| Annual turnover data (construction only) |  |   |                |  |
|--|--|---|----------------|--|
| Year                                     | Amount                                   | Exchange rate*                                | EUR equivalent |  |
|  | Currency                                 |   |                |  |
| [indicate<br>calendar<br>year]           | [insert amount and indicate<br>currency] |   |                |  |
|  |  | Average Annual<br>Construction<br>Turnover ** |                |  |

- \* Refer ITA 14 for date and source of exchange rate.
- \*\* Total EUR equivalent for all years divided by the total number of years. See Section III, Qualification Criteria and Requirements, Clause 3.2.

## Form EXP - 4.1 General Construction Experience

[The following table shall be filled in for the Applicant and in the case of a JV Applicant, each Member]

Applicant's/Joint Venture Member's Name: [insert full name] Date: [insert day, month, year] Applicant JV Party Name: [insert full name] ICB No. and title: [insert ICB number] Page [insert page number]of [insert total number]pages

[Identify contracts that demonstrate continuous construction work over the past [number] years pursuant to Section III, Qualification Criteria and Requirements, Sub-Factor 4.1.List contracts chronologically, according to their commencement (starting) dates.]

| Starting<br>Year | Ending<br>Year                         | Contract Identification                                | Role of<br>Applicant |
|------------------|--|--|----------------------|
| [indicate        | [indicate                              | Contract name: [insert full name]                      | [insert "Prime       |
| year]            | year]                                  | Brief Description of the Works performed by the        | Contractor" or       |
|                  |  | Applicant: [describe works performed briefly]          | "JV Member" or       |
|                  |  | Amount of contract: [insert amount in currency,        | "Sub-contractor"     |
|                  |  | mention currency used, exchange rate and EUR           | or "Management       |
|                  |  | equivalent*]   | Contractor"]         |
|                  |  | Name of Employer: [indicate full name]                 |                      |
|                  |  | Address: [indicate street/number/town or city/country] |                      |
|                  |  | Contract name: [insert full name]                      | [insert "Prime       |
|                  |  | Brief Description of the Works performed by the        | Contractor" or       |
|                  |  | Applicant: [describe works performed briefly]          | "JV Member" or       |
|                  |  | Amount of contract: [insert amount in currency,        | "Sub-contractor"     |
|                  |  | mention currency used, exchange rate and EUR           | or "Management       |
|                  |  | equivalent*]   | Contractor"]         |
|                  |  | Name of Employer: [indicate full name]                 |                      |
|                  |  | Address: [indicate street/number/town or city/country] |                      |
|                  |  | Contract name: [insert full name]                      | [insert "Prime       |
|                  |  | Brief Description of the Works performed by the        | Contractor" or       |
|                  |  | Applicant: [describe works performed briefly]          | "JV Member" or       |
|                  |  | Amount of contract: [insert amount in currency,        | "Sub-contractor"     |
|                  |  | mention currency used, exchange rate and EUR           | or "Management       |
|                  |  | equivalent*]   | Contractor"]         |
|                  | Name of Employer: [indicate full name] |  |                      |
|                  |  | Address: [indicate street/number/town or city/country] |                      |

\* Refer ITA 14 for date and source of exchange rate.

# Form EXP - 4.2(a) Specific Construction and Contract Management Experience

[The following table shall be filled in for contracts performed by the Applicant, each member of a Joint Venture, and Specialized Sub-contractors]

Applicant's/Joint Venture Member's Name: [insert full name] Date: [insert day, month, year] JV Party Name: [insert full name] ICB No. and title: [insert ICB number and title] Page [insert page number]of [insert total number]pages

| <b>Similar Contract No.</b><br>[insert number]of [insert number<br>of similar contracts required] | Information   |   |   |       |  |
|---|---|---|---|-------|--|
| Contract Identification   | [insert contract name and number, if applicable]    |   |   |       |  |
| Award date  | [inse   | rt day, month, ye   | ar, i.e., 15 June, 20   | 15]   |  |
| Completion date   | [inse   | rt day, month, ye   | ar, i.e., 03 October,   | 2017] |  |
| Role in Contract [check the appropriate box]  | Prime<br>Contractor                                 | Sub-<br>contractor  |   |       |  |
| Total Contract Amount   | [insert total contract amount<br>in local currency] |   | EUR[insert<br>Exchange rate and total<br>contract amount in EUR<br>equivalent]* |       |  |
| If member in a JV or sub-<br>contractor, specify participation in<br>total Contract amount        | [insert a<br>percentage<br>amount]                  | [insert total<br>contract amount<br>in local<br>currency] |   |       |  |
| Employer's Name:  | [insert full na                                     | me]   |   |       |  |
| Address:  | [indicate stre                                      | et / number / tow   | vn or city / country]   |       |  |
| Telephone/fax number  | [insert teleph<br>city area code                    |   | , including country   | and   |  |
| E-mail:   | [insert e-mai                                       | l address, if avai  | lable]  |       |  |

\*Refer ITA 14 for date and source of exchange rate.

# Form EXP - 4.2(a) (cont.) Specific Construction and Contract Management Experience (cont.)

| Similar Contract No.                    | Information   |
|---|---|
| [insert number]of [insert number of     |   |
| similar contracts required]             |   |
| Description of the similarity in        |   |
| accordance with Sub-Factor 4.2(a)       |   |
| of Section III:                         |   |
| 1. Amount                               | [insert amount in local currency, exchange rate, EUR  |
|   | in words and in Figures]                              |
| 2. Physical size of required works      | [insert physical size of items]                       |
| items                                   |   |
| 3. Complexity                           | [insert description of complexity]                    |
| 4. Methods/Technology                   | [insert specific aspects of the methods/technology    |
|   | involved in the contract]                             |
| 5. Construction rate for key activities | [insert rates and items]                              |
| 6. Other Characteristics                | [insert other characteristics as described in Section |
|   | VII, Scope of Works]                                  |

# Form EXP - 4.2(b) Construction Experience in Key Activities

Applicant's Name: [insert full name] Date: [insert day, month, year] Applicant's Party Name: [insert full name] Sub-contractor's Name<sup>13</sup> (as per ITA 24.2 and 24.3): [insert full name] ICB No. and title: [insert ICB number and title]

Page [insert page number] of [insert total number] pages

All Sub-contractors for key activities must complete the information in this form as per ITA 24.2 and 24.3 and Section III, Qualification Criteria and Requirements, Clause 4.2.

1. Key Activity No. One: [insert brief description of the Activity, emphasizing its specificity]

Total Quantity of Activity under the contract:

|   | Information  |              |                          |                             |   |
|---|--|--------------|--------------------------|-----------------------------|---|
| Contract Identification   | [insert contract name and number, if applicable]   |              |                          |                             |   |
| Award date  | [insert day, month, year, i.e., 15 June, 2015]   |              |                          |                             |   |
| Completion date   | [insert day, i   | month, year, | i.e.                     | , 03 October, 2             | 017]  |
| Role in Contract<br>[check the appropriate box]   | Prime Member in<br>Contractor JV<br>□ □  |              | Management<br>Contractor | Sub-<br>contractor          |   |
| Total Contract Amount   | [insert total contract amount<br>in contract currency(ies)] EUR[insert exch<br>and total contract<br>in EUR equivale |              | act amount               |                             |   |
| Quantity (Volume, number or rate of<br>production, as applicable) performed<br>under the contract per year or part of the<br>year<br>[Insert extent of participation indicating<br>actual quantity of key activity successfully<br>completed in the role performed] | Total quantity<br>the contrac<br>(i)   |              |                          | centage<br>cipation<br>(ii) | Actual<br>Quantity<br>Performed<br>(i) x (ii) |
| Year 1  |  |              |                          |                             |   |
| Year 2  |  |              |                          |                             |   |
| Year 3  |  |              |                          |                             |   |
| Year 4  |  |              |                          |                             |   |

<sup>13</sup> If applicable

| Employer's Name:     | [insert full name]  |
|----------------------|---|
| Address:             | [indicate street / number / town or city / country]                   |
| Telephone/fax number | [insert telephone/fax numbers, including country and city area codes] |
| E-mail:              | [insert e-mail address, if available]                                 |

## 2. Activity No. Two

3. ....

|  | Information   |
|--|---|
| Description of the key activities in<br>accordance with Sub-Factor 4.2(b) of<br>Section III: |   |
|  | [insert response to inquiry indicated in left column] |
|  |   |
|  |   |
|  |   |
|  |   |

# **Section V. Eligible Countries**

#### Eligibility for the Provision of Goods, Works and Services in Bank-Financed Procurement

In reference to ITA 5.1, for the information of the Applicants, at the present time firms and individuals, supply of goods, or contracting of works or services, from the following countries are excluded from this prequalification process:

Under ITA 5.1(a) none

Under ITA 5.1(b) none

# Section VI. Bank Policy - Corrupt and Fraudulent Practices

Guidelines for Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011

#### **"Fraud and Corruption**

- 1.16 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, contractors and their agents (whether declared or not), sub-contractors, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts.<sup>14</sup> In pursuance of this policy, the Bank:
  - (a) defines, for the purposes of this provision, the terms set forth below as follows:
    - (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;<sup>15</sup>
    - (ii) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;<sup>16</sup>
    - (iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;<sup>17</sup>
    - (iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;<sup>18</sup>
    - (v) "obstructive practice" is
      - (aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a

<sup>&</sup>lt;sup>14</sup>In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

<sup>&</sup>lt;sup>15</sup> For the purpose of this sub-paragraph, "*another party*" refers to a public official acting in relation to the procurement process or contract execution. In this context, "*public official*" includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

<sup>&</sup>lt;sup>16</sup> For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution.

<sup>&</sup>lt;sup>17</sup> For the purpose of this sub-paragraph, "parties" refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

<sup>&</sup>lt;sup>18</sup> For the purpose of this sub-paragraph, "party" refers to a participant in the procurement process or contract execution.

corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

- (bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 1.16(e) below.
- (b) will reject a proposal for award if it determines that the bidder recommended for award, or any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- (c) will declare misprocurement and cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- (d) will sanction a firm or individual, at any time, in accordance with the prevailing Bank's sanctions procedures,<sup>19</sup> including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated<sup>20</sup>
- (e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and contractors, and their subcontractors, agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank;"

<sup>&</sup>lt;sup>19</sup> A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

<sup>&</sup>lt;sup>20</sup> A nominated sub-contractor, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

# **PART 2 – Works Requirements**

# **Section VII. Scope of Works**

# Contents

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#### 1. Description of the Works

#### LUDA YANA DAM - PANAGYURISHTE TOWN

#### **MIDP Project: Component 3: Completion and Rehabilitation of Dams**

#### **Completion of Luda Yana dam and Potable Water Treatment Plant**

#### **1.1.INTRODUCTION**

Luda Yana dam is located at about 2 km northeast from the town of Panagyurishte, on Luda Yana river, immediately downstream of the confluence of Stara River and Muleiska River. The design on which the construction work started was prepared by the Institute of design and Investigation "Vodproekt" in 1982 and 1984.

Luda Yana water supply system of Panagyurishte town is designed for provision of normal water supply of the town of Panagyurishte and the following villages: Oborishte, Poibrene, Popintsi, Bania, Buta, Levski, Elshitsa, Radka mine, "Optikoelektron" and "Asarel" sites of Panagyurishte community, and 5 more villages in Pazardzhik and Strelcha communities. There is a technical possibility also for water supply of Lesichovo community. Calculations were made with the perspective of providing 45 000 inhabitants with potable water by the year 2055. At present the area is supplied with water from river terraces of Maritsa River, near Zlokuchene village, via 45 km long pipeline constructed 20 years ago. The facility is obsolete, frequent breakdowns lead to water-supply restrictions.

The main facilities of Luda Yana Dam and Reservoir scheme are: dam, water intake tower, diversion tunnel, bottom outlet, spillway, potable water treatment plant (PWTP). Luda Yana reservoir is a state public property and it is governed by the Ministry of Regional Development (MRD).

The dam is designed as an embankment type, built from local materials. The watertight element is a clay core founded in its central part on top of the grouting gallery and into foundation slab in the banks. On both sides of the core are the dam shoulders of gravel fill which are connected to the clay by transition zones. The grouting gallery is entirely excavated into the rock foundation. From the grouting gallery was implemented a grout curtain in the central part. In the banks, a concrete slab is cast in the bedrock used for implementation of the grout curtain and for connection with the core's foundation.

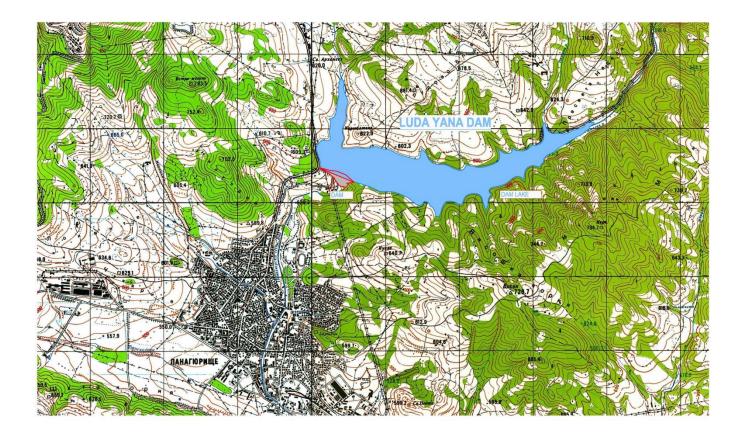
The main parameters of dam and reservoir are:

## **1.2.GENERAL TECHNICAL PARAMETERS**

| Nº | Parameters                               | Dimen<br>sion  | Value                                      |
|----|--|----------------|--|
| 1  | Dam type                                 | -              | Embankment type, earth fill with clay core |
| 2  | Maximum dam height                       |                |  |
| 3  | ✓ From original ground                   | m              | 45,10                                      |
| 4  | ✓ From core base                         | m              | 48,50                                      |
| 5  | ✓ From grouting gallery bottom           | m              | 52,50                                      |
| 6  | Live storage                             | m <sup>3</sup> | 17,74.10 <sup>6</sup>                      |
| 7  | Dead Storage                             | m <sup>3</sup> | 2,95.10 <sup>6</sup>                       |
| 8  | Total reservoir storage                  | m <sup>3</sup> | 21,88.10 <sup>6</sup>                      |
| 9  | Crest length                             | m              | 506,00                                     |
| 9  | Crest width                              | m              | 6,00                                       |
| 10 | Lake length                              | m              | 4500                                       |
| 11 | Elevation of reservoir bottom            | m              | 542.00                                     |
| 12 | Maximum operating reservoir water level  | m              | 582,50                                     |
| 13 | Minimum operating reservoir water level  | m              | 563,00                                     |
| 14 | Dam crest elevation                      | m              | 587,50                                     |
| 15 | Maximum water discharge for water supply | l/s            | 300,00                                     |
| 17 | Average gradient of upstream slope       |                | 1:2,80                                     |
| 18 | Average gradient of downstream slope     |                | 1:2,30                                     |
| 19 | Class of reservoir                       |                | II   |

#### **1.3. LOCATION AND PURPOSE**

#### Map. Location of Luda Yana Dam



#### **1.4.SCOPE OF THE CONSTRUCTION WORKS**

#### 1.4.1. Dam wall

The dam is designed as an embankment (earth-fill) type, built from local materials. The shoulders are made of the river sandy gravels. The watertight element is a central core made of clayey – sands, founded on a 1m- thick concrete slab. At the central part of the core and up to the elevation of 567m an inspection and grouting gallery has been constructed. Filters protect the core on both sides and a rock toe is built at the downstream toe of the dam. The upstream face of the dam is protected against wave erosion by a rock-fill layer made of local granite. The dam body is constructed up to 30 m (70% of the proposed total height of 43.5 m; elevation 569.00 m).

#### 1.4.2. River diversion during construction

River diversion during construction shall be done through diversion tunnel situated on the left bank. The tunnel is with round cross section and 4m diameter and 190m length. It is designed to

divert waters with maximum quantity of 107m3/s. As in the dam site, granite is the dominant geological formation, which generally outcrops on the surface but locally is covered by eluvial mantle of a small thickness. From the geological conditions referred in the geological report conducted during construction, the diversion tunnel has been bored through the granitic bedrock as a whole.

#### 1.4.3. Spillway

On the left bank of the dam it is envisaged a side, front type spillway. After the spillway there is a concrete spillway chute and energy dissipater. It is envisaged to overflow waters with 0,1% security and maximum water quantity 381m3/s.

#### 1.4.4. Bottom outlet and water intake tower

Existing intake tower will be demolished and in its place will be built at a lower water intake tower with height 20 m. The bottom outlet is designed as a steel pipe implemented in the diversion tunnel.

#### 1.4.5. Potable Water Treatment Plant (PWTP)

At the moment the water supply of Panagyurishte and the settlements in the municipality of Panagyurishte is being done by 12 pipe wells located in the terrace of Maritsa river. The wells are situated on the right bank of Maritsa river. The water is supplied through pumping stations.

The area for the Potable Water Treatment Plant is located 200m west of the dam site, it is characterized by a relatively gentle morphology and the granitic bedrock is covered by a weathered mantle of variable thickness (from 0.30m to 5.20m).

Currently, the water supply network of Panagyrishte is in bad operation condition due to badly implemented construction- erecting works on the pipelines and water supply facilities in the past. The defined maximum water consumption is 300l/s daily. It is accepted as design quantity for the water treatment plant.

#### 1.4.6. Pumping station

The water from the dam shall be let through pumping station and pressure pipeline to the PWTP.

## **BILL OF QUANTITIES**

#### LUDA YANA DAM AND ASSOCIATED STRUCTURES

#### **BILL OF QUANTITY**

| Item<br>No | Item  | Unit           | Quantity  |
|------------|---|----------------|-----------|
| 1          | General   |                |           |
| 1.1        | Earth roads   | km             | 2         |
| 1.2        | Camping: offices, instruments, equipment, facilities                                      | LS             | 1         |
| 1.3        | Mobilization - Demobilization   | LS             | 1         |
| 1.4        | Site Clearance (top 20 cm)  | m <sup>2</sup> | 1 400 000 |
| 1.5        | Drainage and Dewatering   | Pcs            | 1         |
| 1.6        | Reservoir filling :filling team and committee, monitoring, staff and equipment, two years | LS             | 1         |
| 2          | Dam Embankment  |                |           |
| 2.1        | Excavations for Dam Embankment  | m <sup>3</sup> | 62 000,00 |
| 2.2        | Impermeable clay material - Dam core (1)  | m <sup>3</sup> | 51 000    |
| 2.3        | Filters and drains (2)  | m <sup>3</sup> | 36 550    |
| 2.4        | Weathered schist material from borrow area - Dam shells (3)                               | m <sup>3</sup> | 195 000   |
| 2.5        | Upstream slope protection Rip - Rap (4)   | m <sup>3</sup> | 24 500    |
| 2.6        | Downstream slope protection with topsoil grass cover (5)                                  | m <sup>3</sup> | 16 200    |
| 2.7        | Capping layer (6) Asphalt   | m <sup>2</sup> | 2 700     |
| 2.8        | Concrete for Dam Embankment   | m <sup>3</sup> | 1 350     |
| 2.9        | Steel reinforcement B500C   | kg             | 58 000    |
| 2.10       | Repairs and treatment of existing concrete surfaces                                       | LS             | 1         |
| 2.11       | Repair of existing Rip-Rap  | m <sup>2</sup> | 9 000     |
| 2.12       | Contact grouting (existing inspection gallery)  | LS             | 1         |
| 3          | Grout curtain and blanket   |                |           |
| 3.1        | Installation of grouting equipment on boreholes (injection pipe)                          | item           | 1 600     |
| 3.2        | Drilling of grouting holes without sampling   | m              | 26 000    |
| 3.3        | Cement  | kgr            | 1 400 000 |
| 3.4        | Bentonite   | kgr            | 270 000   |
| 3.5        | Drilling of grouting holes with sampling  | m              | 1 250     |
| 3.6        | Lugeon tests  | item           | 410       |
| 4          | Spillway  |                |           |
| 4.1        | Excavations for Spillway  |                |           |
| 4.1.1      | Bulk soil excavation for Spillway   | m <sup>3</sup> | 13 000    |

| 4.1.2   | Rock excavation for Spillway   | m <sup>3</sup> | 10 000  |
|---------|--|----------------|---------|
| 4.1.3   | Rock support measures  |                |         |
| 4.1.3.1 | Rock bolts $\Phi 25$ / B500C   | m              | 5 800   |
| 4.1.3.2 | Steel wire mesh T-188  | kgr            | 17 200  |
| 4.1.3.3 | Shotcrete  | m <sup>3</sup> | 870     |
| 4.1.3.4 | Drainage holes Φ76   | m              | 3 900   |
| 4.2     | Backfill with excavation material for Spillway                       | m <sup>3</sup> | 8 000   |
| 4.3     | Concrete   | m <sup>3</sup> | 8 250   |
| 4.4     | Steel reinforcement B500C  | kg             | 750 000 |
| 4.5     | Supply and install D200mm perforated concrete drain pipe             | m              | 500     |
| 4.6     | Compacted sandgravel   | m <sup>3</sup> | 300     |
| 4.7     | Rip-Rap  | m <sup>3</sup> | 2 000   |
| 4.8     | Supply and place 240mm wide PVC waterstop                            | m              | 450     |
| 5       | Diversion & Outlet Works   |                |         |
| 5.1     | Excavations for Diversion & Outlet Works                             |                |         |
| 5.1.1   | Bulk soil excavation for Diversion & Outlet Works                    | m <sup>3</sup> | 2 500   |
| 5.1.2   | Rock excavation for Diversion & Outlet Works                         | m <sup>3</sup> | 800     |
| 5.1.3   | Excavation for new tunnel  | m <sup>3</sup> | 200     |
| 5.2     | Backfill with excavation material for Diversion & Outlet Works       | m <sup>3</sup> | 1 000   |
| 5.3     | Rip-Rap for Diversion & Outlet Works                                 | m <sup>3</sup> | 2 000   |
| 5.4     | Concrete   | m <sup>3</sup> | 1 410   |
| 5.5     | Steel reinforcement B500C  | kg             | 111 000 |
| 5.6     | Metalworks   | kg             | 1 000   |
| 5.6.4   | Stop logs  | Pcs            | 8       |
| 5.7     | Steel Pipe   | m              | 385     |
| 5.8     | Supply and install D400mm perforated concrete drain pipe             | m              | 200     |
| 5.9     | Supply and install butterfly type valves including flange adaptors   | Pcs            | 11      |
| 5.10    | Supply and install hollow cone type valves including flange adaptors |                |         |
| 5.10.1  | DN 400 mm / PN10   | Pcs            | 1       |
| 5.10.2  | DN 1000 mm / PN10  | Pcs            | 1       |
| 5.11    | Supply and place 240mm wide PVC waterstop                            | m              | 100     |
| 5.12    | Demolitions of concrete structures                                   | LS             | 2       |
| 5.13    | Repairs and treatment of existing concrete surfaces                  | LS             | 1       |
| 5.14    | Contact grouting and grout curtain (existing tunnel)                 | LS             | 1       |
| 5.15    | Shotcrete and membrane system  | m <sup>3</sup> | 100     |
| 6       | Instrumentation  |                |         |
| 6.1     | Vibrating wire piezometers   | item           | 30      |
| 6.2     | Drilling and installation of v.w. piezometers                        | m              | 300     |

| 6.3  | Open piezometers                                      | item | 13    |
|------|---|------|-------|
| 6.4  | Drilling and installation of open piezometers         | m    | 500   |
| 6.5  | Surface monuments                                     | item | 30    |
| 6.6  | Strong motion accelerographs                          | item | 3     |
| 6.7  | Cables to the instrument house                        | LS   | 1     |
| 6.8  | Automatic data logging system                         | Item | 1     |
| 6.9  | Measurements of piezometers during construction       | item | 1 500 |
| 6.10 | Measurements of surface monuments during construction | item | 180   |
| 7    | Electromechanical works+SCADA                         | LS   | 1     |
| 8    | Service Building                                      | LS   | 1     |
| 9    | River Protection downstream dam                       | LS   | 1     |
| 10   | PWTP  | LS   | 1     |
|      | Feeding pipeline                                      | m    | 970   |
| 11   | Main water supply pipeline                            | m    | 1 988 |
| 14   | Relocation of electricity transmission line 110kV     | m    | 5 720 |
| 15   | Relocation of electricity transmission line 20kV      | m    | 2 040 |

# 2. Construction Period

## 2.1. BIDDING PROCESS

Process for implementation of International Competitive Bidding for the civil works for Completion of Luda Yana Dam is tentatively scheduled as follows:

| Prequalification of potential bidders | - | February 2014 – June 2014 |
|---------------------------------------|---|---------------------------|
| International Competitive Bidding     | - | July 2014- October 2014   |

## 2.2. CONSTRUCTION PERIOD

The execution of the civil works for Completion of Luda Yana dam is tentatively scheduled to start as soon as possible following bidding process to be implemented in accordance with ICB procedure described in Section II of the Guidelines: Procurement Of Goods, Works, And Non-Consulting Services Under IBRD Loans And IDA Credits &Grants By World Bank Borrowers May 2004, revised October 2006 and May 2010.

The Guidelines can be found using the following link:

http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/PROCUREMENT/0,,contentMDK:20 060840~pagePK:84269~piPK:60001558~theSitePK:84266,00.html

The construction period will be thirty (30) months from the Commencement Date.

## 3. Site and Other Data

## **3.1.ACCESSIBILITY**

Construction site is accessible through the road Pazardzhik- Panagyurishte- Panagyruski kolonii.

## **3.2. PHYSICAL-GEOGRAPHICAL AND CLIMATIC CONDITIONS**

#### 3.2.1. Brief physical-geographical characteristics

The catchment of Luda Yana river is located on the south side of Sashtinska Sredna Gora Mountain, beginning on its highest areas on the north and ending at the town of Panagyurishte at the south. The relief is middle to low mountainous and hilly. The average altitude of the catchment is 683 m. The altitude varies between 1500 m at the high mountainous areas on the north and 500 m on the south.

The soil fertility in the region is limited due to the relative rugged ground, the erosion and the shallow soils. In the northern part can be observed leached maroon forested soils, which have higher depth and good natural fertility. The cinnamon podzolic soils are spread on the northwest part of the land of Elshica village. The soils on the lands of Poibrene, Oborishte, Bata and Banja are strongly leached or slightly podzolic cinnamon forested soils. They are shallow like the soils on the northeastern part of the land of Popintsi and to the west of Panagyurishte. The northern parts of the Panagyurishte valley and the most northern mountainous part of the catchment are covered respective with cinnamon-podzolic and brown forested soils.

### **3.2.2.** Climatic characteristics

Table. Orographic and hydrographic characteristics of the catchment up to Luda Yana Reservoir

| Station<br>River and<br>Point | Length of<br>the river –<br>from the<br>spring<br>Lp | Average<br>slope of the<br>river<br>Ip | Catchment<br>Area<br>A | Average<br>altitude of<br>the<br>catchment<br>Hcp | Average<br>slope of the<br>catchment<br>I | Average<br>width of the<br>catchment<br>B | Percent of<br>forest areas |
|-------------------------------|--|--|------------------------|---|---|---|----------------------------|
|                               | km   | ‰                                      | km2                    | m   | -   | km  | %                          |
| Luda Yana<br>reservoir        | 15.6   | 58.6                                   | 100                    | 932   | 0.186                                     | -   | 70                         |

### 3.2.3. Precipitation

The precipitation in the region is characterized by uneven distribution during the year. A clearly expressed primary maximum is observed in June and the main minimum is in February. The secondary precipitation maximum is in November.

The precipitation regime is moderate continental with clear tendency to increase with altitude increase and in southern direction.

The average annual precipitation for the region is 653 mm and decreases from 750 mm in the mountainous areas up to 550 mm in the southern part of the catchment.

Table Average monthly, seasonal and annual sum of precipitation height (mm)

|    |    |     |    | × 7 |    |     |      |    | V  |    |     |        | ~ .    | ~      |      |        |
|----|----|-----|----|-----|----|-----|------|----|----|----|-----|--------|--------|--------|------|--------|
| I  | II | III | IV | V   | VI | VII | VIII | IX | Х  | XI | XII | Winter | Spring | Summer | Fall | Annual |
| 45 | 38 | 44  | 54 | 79  | 84 | 64  | 47   | 45 | 49 | 54 | 50  | 132    | 178    | 195    | 148  | 653    |

#### Table Average monthly and annual maximum daily precipitation (mm)

| I  | Π  | III | IV | V  | VI | VII | VIII | IX | Х  | XI | XII | Annual |
|----|----|-----|----|----|----|-----|------|----|----|----|-----|--------|
| 16 | 13 | 15  | 17 | 22 | 25 | 25  | 20   | 18 | 17 | 19 | 17  | 43     |

#### Table Maximum daily precipitation (height - mm, month, year)

| I    | Π    | III  | IV   | V    | VI   | VII  | VIII | IX   | Х    | XI   | XII  | annual |
|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| 54.9 | 39   | 46   | 42   | 78   | 67   | 84.7 | 71.5 | 198  | 47.2 | 49.5 | 43.5 | 198    |
| 1969 | 1944 | 1971 | 1940 | 1980 | 1940 | 1976 | 1951 | 1969 | 1972 | 1981 | 1939 | 1969   |

| Table Average number of days with precipitation |    |     |    |    |    |     |      |    |   |    |     |  |  |
|---|----|-----|----|----|----|-----|------|----|---|----|-----|--|--|
| Ι   | Π  | III | IV | v  | VI | VII | VIII | IX | Х | XI | XII |  |  |
| 10  | 10 | 11  | 11 | 14 | 12 | 9   | 7    | 6  | 8 | 10 | 10  |  |  |

Table Average number of days with precipitation

|   |   |   | Table | Average | number | i oi uays | with ra | man |   |    |     |
|---|---|---|-------|---------|--------|-----------|---------|-----|---|----|-----|
| Ι | п | Ш | IV    | V       | VI     | VII       | VIII    | IX  | Х | XI | XII |
| 3 | 5 | 5 | 10    | 14      | 12     | 9         | 7       | 6   | 8 | 8  | 6   |

Table Average number of days with rainfall

To characterize the precipitation regime in the water catchment to Luda Yana reservoir is used the data for maximum daily precipitations from the following meteorological stations: Poibrene, Strelcha, Lesichevo, Panagyurski kolonii, Popintsi, Bratiya, Topolnitsa and Panagyurishte. The time series of maximum daily precipitations are for the whole observation period – from opening of each station up to 2011 (or until closing of the station). Precipitation data for the stations Ihtiman, Zlatitsa, Anton, Mirkovo are taken into account to extent the period and the quality of the precipitation analysis. The data for these stations is taken from previous studies of the team ("Intensive

precipitations in Maritsa water stations").

Station Panagyurishte is used as a main Analog to clarify the precipitation regime in the Luda Yana catchment.

The maximum monthly and annual daily precipitations are presented in Table.

| Year | Ι    | Π    | III  | IV   | v    | VI   | VII  | VIII | IX   | Х    | XI   | XII  |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1991 | 7.6  | 19.2 | 6.4  | 11.8 | 19.4 | 11.0 | 49.5 | 7.7  | 11.2 | 21.0 | 20.6 | 1.8  | 49.5 |
| 1992 | 7.4  | 5.8  | 8.3  | 29.5 | 26.5 | 29.2 | 14.8 | 10.6 | 3.0  | 6.5  | 19.3 | 20.5 | 29.5 |
| 1993 | 8.2  | 8.4  | 7.0  | 29.4 | 19.8 | 7.0  | 7.3  | 3.2  | 9.6  | 7.6  | 25.0 | 12.0 | 29.4 |
| 1994 | 7.4  | 10.2 | 16.5 | 22.0 | 12.5 | 25.4 | 17.5 | 20.0 | 3.5  | 39.4 | 34.0 | 18.3 | 39.4 |
| 1995 | 10.0 | 2.3  | 32.2 | 9.8  | 23.7 | 25.5 | 19.3 | 14.1 | 10.4 | 4.0  | 13.3 | 39.6 | 39.6 |
| 1996 | 9.8  | 13.1 | 7.3  | 3.6  | 7.7  | 5.4  | 13.0 | 9.1  | 26.0 | 11.0 | 7.6  | 19.7 | 26.0 |
| 1997 | 13.7 | 16.8 | 15.5 | 17.2 | 19.2 | 11.8 | 9.8  | 13.6 | 15.5 | 16.1 | 14.2 | 37.8 | 37.8 |
| 1998 | 37.8 | 33.4 | 4.3  | 2.5  | 23.1 | 8.6  | 7.8  | 6.6  | 16.5 | 16.2 | 35.6 | 3.4  | 37.8 |
| 1999 | 12.5 | 23.0 | 23.8 | 8.8  | 18.6 | 12.9 | 66.7 | 37.5 | 9.9  | 11.2 | 14.8 | 25.7 | 66.7 |
| 2000 | 38.4 | 3.8  | 3.8  | 14.1 | 17.6 | 20.4 | 5.3  | 13.6 | 9.0  | 15.8 | 1.8  | 2.8  | 38.4 |
| 2001 | 23.6 | 23.6 | 30.4 | 15.7 | 41.5 | 21.8 | 11.7 | 9.7  | 15.1 | 2.0  | 5.3  | 24.6 | 41.5 |
| 2002 | 1.6  | 2.4  | 24.2 | 11.2 | 16.7 | 30.3 | 28.1 | 19.5 | 36.1 | 23.3 | 21.3 | 15.2 | 36.1 |
| 2003 | 30.3 | 7.9  | 0.0  | 22.4 | 21.5 | 22.9 | 13.1 | 32.2 | 6.2  | 25.9 | 10.6 | 30.8 | 32.2 |
| 2004 | 6.5  | 2.0  | 11.2 | 5.0  | 24.8 | 51.3 | 14.6 | 19.1 | 15.6 | 19.9 | 32.2 | 20.3 | 51.3 |
| 2005 | 10.0 | 7.7  | 10.0 | 15.4 | 17.2 | 24.4 | 36.6 | 78.0 | 37.6 | 38.0 | 11.4 | 12.0 | 78.0 |
| 2006 | 14.7 | 31.0 | 33.7 | 19.7 | 9.4  | 44.1 | 56.4 | 15.5 | 14.3 | 21.9 | 11.3 | 10.5 | 56.4 |
| 2007 | 8.1  | 16.2 | 19.1 | 6.4  | 31.0 | 43.3 | 14.6 | 66.1 |      |      |      |      | 66.1 |
| 2008 | 17.8 | 4.7  | 17.8 | 84.3 | 9.7  | 45.9 | 24.6 | 4.2  | 25.5 | 40.0 | 14.6 | 32.5 | 84.3 |
| 2009 | 35.4 | 10.4 | 10.1 | 9.9  | 31.7 | 15.8 | 19.9 | 35.3 | 19.8 | 24.4 | 9.3  | 30.4 | 35.4 |
| 2010 | 10.9 | 11.1 | 16.0 | 23.8 | 17.6 | 55.4 | 56.7 | 16.1 | 9.6  | 45.6 | 13.1 | 29.5 | 56.7 |
| 2011 | 19.7 | 10.4 | 15.7 | 5.9  | 25.5 | 25.0 | 33.6 | 47.2 | 22.6 | 18.1 | 7.6  | 9.8  | 47.2 |

Table. Maximum monthly and annual 24-hour precipitation (mm) for Panagyurishte

The data for the maximum monthly daily (24 hour) precipitations in station Panagyurishte are statistically processed. As a result of the processing are obtained the following parameters: average monthly daily precipitation, average annual daily precipitation, maximum annual daily precipitation. The parameters are presented in tables.

| Ι    | Π    | III  | IV   | V    | VI   | VII  | VIII | IX   | Х    | XI   | XII  | Год. |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 15.8 | 12.5 | 14.9 | 17.5 | 20.7 | 25.6 | 24.8 | 22.8 | 15.8 | 20.4 | 16.1 | 19.9 | 46.6 |

# Table. Average monthly and multiannual maximum daily precipitation at station Panagyurishte (mm)

Dry periods are observed at the end of the summer period and beginning of the autumn. The annual amount of the potential evapotranspiration is 500-600 mm as it exceeds 100 mm in July.

#### **3.2.4.** Climatic conditions.

The catchment of Luda Yana reservoir is a part of transient – continental climate zone. The average air temperature in January is -1.1 °C. The average air temperature in July is 20.6 °C and the average annual air temperature equals 10.1 °C. Because of the variety of the relief and the highly variable altitudes, there is a big diversity in the micro – climate and its mountainous character in the north part of the catchment.

The western winds (40 %) are predominant in the area. Their average velocity is 2.3 m/s. The part of the days without wind in the Valley of Panagyurishte is quite high (above 60%). The temperature inversions are frequent (11-15 times in month).

For the detailed study and analysis of the temperature regime in a long term period the Method of Analogy has been applied for the Luda Yana Reservoir water catchment

Panagyurishte station is used as Analog station.

Table Average monthly and annual air temperature at Panagyurishte station in degrees Celsius

| Ι    | Π   | Ш   | IV   | V    | VI | VII  | VIII | IX   | X    | XI  | XII | Year |
|------|-----|-----|------|------|----|------|------|------|------|-----|-----|------|
| -0.1 | 0.8 | 4.2 | 10.2 | 14.6 | 18 | 20.3 | 19.8 | 15.8 | 10.7 | 6.1 | 1.5 | 10.1 |

#### 3.2.5. Geological conditions

The Luda Yana dam is partially constructed and it is located downstream of the confluence of three tributaries of Luda Yana River (namely Okoshka, Muleiska, and Garmidol). It is situated at about 2km northeast from the town of Panagiurishte on the Luda Yana River, immediately after the inflow of the Strata reka (river) into the Muleiska reka (river). The Luda Yana River is a small tributary of Maritsa River which flows to the East and turns South at the Bulgarian - Turkish - Greek borders. The dam site is characterized by a relatively gentle morphology and it is structured by granitic rocks. In the abutments the inclination is steeper due to granitic outcrops on the surface, whereas in other

zones, downward, the rocks are covered by a weathered mantle, consisting of silt, clay, sand and gravels in various proportions. The base of the valley is usually covered by coarse grained alluvial deposits with occasional presence of clay horizons, small in thickness and extension. At the right abutment, where the morphology is smoother, surficial weathering mantle with significant thickness was usually encountered, whilst the bedrock appears only locally.

The study area is geotectonically situated in the Sredna gora zone and is mainly composed by the Paleozoic granitoids of the zone, which are part of the South Bulgarian granites. The area is a part of the southern slopes of Sredna gora mountain. The terrain is low mountainous.

The most important tectonic structure of the wider area is the extensive Sredna Gora anticlinorium which is developed at the southern wing of Panagyurska volcanogenic line and its well conserved Zapadnosrednogorska anticline whose south hip was torn away from the granite intrusions.

According to available data as well as the data collected during the field geological and geotechnical investigation program, the dam site and the reservoir area, geologically is covered by the south Bulgarian granite, consisted of porphyroide granites and granodiorites with quartz, pegmatitic – aplitic veins. In the broader area these formations are connected to significant porphyry copper and copper pyrite ore deposits.

#### **3.2.6.** Artificial Deposits

Due to the previous human activity of the dam and the reservoir area, the natural environment has been altered and manmade materials have been deposited. These are categorized in the following formations / areas of disturbance.

#### 3.2.7. Manmade deposits (W)

They include recent materials derived by human activity, usually related to the dam construction, as well as remains from those which were abstracted from the alluvial plain, for various construction purposes. They are commonly encountered in the flood plain of Luda Yana river and especially close to the dam site, they are characterized by variation in lithology and in compaction conditions and have small thickness between 0.5 and 4 meters.

#### 3.2.8. Existing Dam

The materials that compose the main zones of the constructed dam were recognized in detail and are shown in the Drawings GM-3 and GS-1 to GS-6. These zones are:

• The Core: Brown to orange brown clayey-sandy mixtures, mainly clay, with of low to medium plasticity with occasional fine gravels. There are occasional grayish or greenish

lenses with small presence of organics. Some presence of roots was noted near surface. It is medium dense to dense.

- The Filter zones: Light brown, brown to orange brown, well graded, loose sand with low proportion of fines (silt clay) and low proportion of gravels. There are occasional pockets of organics.
- The Rubble fill: Brown and gray sand and gravels mixtures, with stones. They are dense to very dense.
- The Stone cover: Angular rock pieces and blocks of slightly weathered / oxidized granite. The usual dimensions of the pieces range between 0.2-0.6m.

### 3.2.9. Disturbed Alluvial (River) terrain (Q-d)

It is a significant part of the Luda Yana valley floor which was uniformly covered by Coarse-grained Alluvial (River) deposits (Q-al) before the initiation of human activities in the area.

Extended disturbance has taken place in this area due to:

- the quarrying of coarse-grained material for the construction of the dam, and
- the presence of older water intake structures for the water supply of the town of Panagyurishte.

The area is characterized by:

- small thickness (<0.5-1m) of Alluvial deposits, over the granitic bedrock, which is residual from the previous construction phase, and / or
- Hummocky relief due to the presence of scattered mounds of debris and ponds. In this area, the granite frequently outcrops within the riverbed

#### List of attachments:

- 1. General Layout
- 2. Dam longitudinal section
- 3. Diversion longitudinal section
- 4. Photos of the dam and facilities