DANIDA SUSTAINABLE INFRASTRUCTURE FINANCE

Invitation for Pre-qualification

Subject: **Expression of Interest (Pre-qualification) of Contractors for the Construction of Eastern Wastewater Treatment Plant (44 MGD) of Faisalabad City (Phase I), Pakistan**

The Government of Pakistan, Ministry of Economic Affairs, through Punjab Provincial Government and the Water and Sanitation Agency of Faisalabad (WASA-F) has applied to Danida Sustainable Infrastructure Finance (DSIF) for a Subsidised Loan to finance the cost of the Construction of Faisalabad Wastewater Treatment Plant (WWTP) Project. The Contract will be entered into between WASA-F and a Danish Contractor for the design, construction and a 5-years operation and maintenance period of a new WWTP in Faisalabad. With this Invitation to Expression of Interest, the Government of Punjab through the WASA-F (the Employer) intends to pre-qualify contractors for this contract.

It is expected that Invitations to Tender will be issued in January 2023.

Tendering is restricted to eligible Danish firms, or in the event of joint ventures, joint ventures with a Danish leader with at least 60% share.

A complete set of the pre-qualification documents include:

- Instructions to Applicants
- Summary of the Project and the works and/or supply of goods (the Works)
- Criteria for pre-qualification
- Information Forms (1) to (7)

The application for pre-qualification comprises the Letter of Application and Information Forms (1) through (7) completed by the applicant. These documents, together with a brief profile of the applicant, and annual financial audited reports/statements for the past five years, shall be submitted in one original and three copies in the English language and one copy in electronic *.pdf format submitted on a memory stick/flash drive.

Eligible Danish companies shall register to participate in the pre-qualification procedure by letter request to WASA-F addressed to the Project Director (WWTP) under letterhead and sent to WASA-F's e-mail address outlined below. Participation in pre-qualification procedure is restricted to registered applicants only. The pre-qualification documents can be downloaded from the

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websites of WASA-F and DSIF from 05.10.2022 at the following addresses:

http://wasafaisalabad.gop.pk/

and

https://www.ifu.dk/danida-sustainable-infrastructure-finance-dk/#ribbon3

Applications for pre-qualification shall be submitted in sealed envelopes, clearly marked "Application to Pre-qualify for **the Construction of Faisalabad Wastewater Treatment Plant Project, Pakistan (Eastern Wastewater Treatment Plant (44 MGD) of Faisalabad City)",** and delivered to the address below before 15th November 2022 14:00 (UTC+5hr). The Applications will be opened on 15th November 2022, at 14:30 (UTC+5hr).

Contact Person: Project Director (WWTP)

Postal Address: Project office near Novelty Bridge, Samundari Road, Water and Sanitation Agency Faisalabad, Pakistan

Telephone number including country code: +92 41 9330551 Fax: +92 41 921 0054

Email address: wwtpphase1@gmail.com

Yours sincerely,

Project Director (WWTP)

Water and Sanitation Agency, Faisalabad

Instructions to Applicants (ITA)

1 General

1.1 Source of Funds

The Government of Pakistan and the Government of Denmark have both approved the Project "Construction of Eastern Wastewater Treatment Plant (44 MGD) of Faisalabad City (Phase 1), for which Danida Sustainable Infrastructure Finance (DSIF) will ensure the financing by means of a subsidized Loan. A Loan Agreement will be entered into between the Ministry of Economic Affairs, Pakistan and Danske Bank, Denmark.

1.2 Scope of Work

The Employer intends to pre-qualify contractors for the Works as described in the Summary.

1.3 Invitation to Tender

It is expected that pre-qualified applicants will receive an Invitation to Tender in the month and year indicated in Invitation for Pre-qualification.

1.4 Type of Contract

Origin of tender documents and origin and type of contract documents and the time for completion are indicated in the Summary.

1.5 Site Information

Relevant information on the site, project layout, expected construction period, facilities, services provided by the Employer, and other relevant data are given in the Summary.

2 Fraud and Corruption

Danida upholds zero tolerance towards corrupt, facilitating, fraudulent, collusive and coercive practises and requires the same from Employers, as well as Tenderers, Contractors, Sub-Contractors, and Consultants under contracts supported by DSIF. In pursuit of this policy DSIF

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practices" means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution,

(ii) "facilitating practices" is a form of corruption offering payments in order to expedite

or facilitate the performance by a public official of a routine governmental action and not to obtain or retain business or any other improper advantage.

(iii) "fraudulent practices" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract,

(iv) "collusive practices" means a scheme or arrangement between two or more tenderers, with or without the knowledge of the Employer, designed to establish tender prices at artificial, non-competitive levels,

(v) "coercive practices" means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in a procurement process, or affect the execution of a contract.

(b) will reject a proposal for award if it determines that the preferred Tenderer, directly or through an agent, engaged in corrupt, facilitating, fraudulent, collusive or coercive practices in competing for the Contract in question,

(c) will cancel the support for the project if it determines at any time that representatives of the Employer engaged in corrupt, facilitating, fraudulent, collusive or coercive practices during the procurement or the execution of that contract, without the Employer having taken timely and appropriate action satisfactory to the Danida to remedy the situation,

(d) will sanction a firm or individual, including declaring them ineligible, either indefinitely or for a stated period of time, to be awarded contracts supported by DSIF, if it at any time determines that they have, directly or through an agent, engaged in corrupt, facilitating, fraudulent, collusive or coercive practices in competing for, or in executing, a contract supported by DSIF.

The Employer may, if it determines applicants/tenderers engaged in corrupt, facilitating, fraudulent, collusive or coercive practices during the tender process, exclude such applicants/tenderers from participating, or cancel the Tender or Contract as appropriate, and take such additional actions (civil and/or criminal) as the Employer finds appropriate.

3 Eligibility

3.1 Danish Contents

Works and supply of goods financed under DSIF shall be tendered and contracted as one contract with a Danish contractor or joint venture with a Danish Lead. The Danish Lead must carry out 60% of the Contract value. The Danish company may form a joint venture (JV) with one or more joint venture partners, having the Danish company as leader. The Danish company (together with its sub-

contractors) shall undertake minimum 60 % of the contract value. Proof hereof shall appear in a letter of intention to form a joint venture to be signed by all joint venture members and included in the prequalification application. There are no requirements to the nationality of joint venture partners.

Works and supply of goods financed under DSIF must contain a degree of know-how and technology transfer to the Employer. Furthermore, works and goods must be of high quality with long lifetime.

There are no requirements as to the origin of the goods and services to be proposed by the tenderer. However, the project sustainability shall be an overriding issue and will include life-cycle cost calculations as a tool during all stages of the project.

3.2 Eligible Tenderers

Tendering is open to eligible Danish firms or joint ventures conditioned by the following,

(a) The Danish firm is main contractor, or in the event of a joint venture, leader

(b) The Danish main contractor or leader shall have a substantial turnover in Denmark and proof hereof shall be provided in the form of annual audited accounts for the past five years. Verification may be required by DSIF.

(c) The Danish main Contractor or leader (together with its sub-contractors) is responsible for undertaking minimum 60 % of the Contract Value. Proof hereof shall appear in a letter of intention to form a joint venture to be signed by all joint venture members and included in the prequalification application. There are no requirements to the nationality of joint venture partners.

Government-owned enterprises in the Employer's country may participate only if they can establish that they (i) are legally and financially autonomous, and (ii) operate under commercial law. No dependent agency of the Employer under a project financed by DSIF shall be permitted to tender or submit a proposal for the providing works or goods under the project.

4 Qualification Criteria

4.1 General

Pre-qualification will be based on applicants meeting all the minimum pass–fail criteria regarding their general and particular experience, financial capabilities, and litigation history as demonstrated by the applicant's responses in the Information Forms attached to the Letter of Application. Additional requirements for joint ventures are given in Section 5. The qualifications, capacity, and resources of proposed subcontractors will not be taken into account in assessing those of individual or joint venture

applicants, unless they are named specialist subcontractors pursuant to Sub-Clause 4.4.

4.2 Nominated Subcontracting

Nominated Subcontracting shall not be used in connection with the tendering and award of contracts financed under DSIF.

4.3 Subcontracting

If an applicant intends to subcontract parts of the Works such that the total of subcontracting is more than the 30% of the total value of the Works, that intention shall be stated in the Letter of Application, together with a tentative listing of the elements of the Works to be subcontracted.

4.4 Specialist Subcontracting

If an applicant intends to subcontract any highly specialized elements of the Works to specialist subcontractors, such elements and the proposed subcontractors shall be clearly identified, and the experience and capacity of the subcontractors shall be described in the relevant Information Forms.

4.5 Acceptable Substitutes

With reference to Sub-Clause 4.3, the Employer may require applicants to provide more information about their proposals. If any proposed subcontractor is found ineligible or unsuitable to carry out an assigned task, the Employer may request the applicant to propose an acceptable substitute.

4.6 Contractor's Responsibility

After award of contract, the subcontracting of any part of the Works and goods to be supplied, other than for the provision of labour and materials, or to subcontractors named in the Contract, shall require the prior consent of the Employer. Notwithstanding such consent, the Contractor shall remain responsible for the acts, defaults, and neglects of all subcontractors during contract implementation.

4.7 General Experience

The applicant shall provide evidence that

(a) he has been actively engaged in works and in the role of main contractor, leader of joint venture or sub-contractor as relevant for the past *five* years starting 1st January 2017,

(b) his average annual turnover in similar works of minimum and total of *EUR50,000,000 for a joint venture or main contractor*. The annual turnover shall not be less than 60% of this amount for a lead joint venture partner and not less than 10% of this amount for each other member of a joint venture.

4.8 Particular Experience

The applicant shall provide evidence that

(a) he has successfully completed two contracts for works of comparable size and complexity during the past fifteen years. Comparable size and complexity shall mean a Wastewater Treatment Plant (WWTP) or Water Treatment Plant (WTP) of capacity in excess of 25,000 m^3/day. (Comparable size and complexity shall also mean containing a substantial training programme for the operational staff of the Employer.)

(b) he has successfully completed one contract for a WWTP, irrespective of capacity (m3/day).

(c) knowledge of Operation and Maintenance of WTPs or WWTPs is a requirement.

(d) he has successfully completed *one* contract for works as relevant in South Asia / South East Asia or in a developing country during the past fifteen years.

(e) he has substantial experience in handling Environmental, Social, Health and Safety (ESHS) during project execution.

4.9 Financial Capabilities

The applicant shall provide evidence that

(a) The applicant shall have access to or has available liquid assets, lines of credit or other financial means (independent of any advance payment on the Contract) of an amount of not less than *EUR20,000,000*.

(b) the applicant shall demonstrate that his operation is long term profitable and his financial situation is sound, demonstrated through as minimum, extracts of audited profit and loss accounts and balance sheets for the past five years or similar statements.

4.10 Personnel Capabilities

The applicant shall provide evidence that

(a) he has management and overall personnel resources within administration, financial, technical, quality assurance etc. required for execution of a contract of comparable size and complexity,

(b) he has available key staff for contract management, site management, and access to Specialist Positions required for the execution of the Contract. Specialist Positions include a full range of design staff and construction operators and staff for the Operation and Maintenance of the

Works and the training of WASA-F's operators.

(See information form 6)

4.11 Litigation History

The applicant shall provide accurate information on the related Form of Information 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 the joint venture may result in failure of the application.

(See information form 7)

4.12 Right to Waive

The Employer reserves the right to waive minor deviations in the qualification criteria if they do not materially affect the capability of an applicant to perform the contract.

5 Joint Ventures

5.1 Eligibility

If the applicant comprises a number of firms combining their resources in a joint venture, the legal entity constituting the joint venture shall, if registration is required be registered in Denmark, and the leader shall be registered in Denmark and supporting documents shall be presented by the applicant.

5.2 Qualification Criteria

The joint venture must satisfy collectively the criteria of Clause 4. For this purpose, the following data of each member of the joint venture may be added together to meet the collective qualifying criteria:

(a) average annual turnover (Sub-Clause 4.7 (b]),

(b) particular experience (Sub-Clause 4.8 (a), (b), (c), (d) and (e)),

(c) cash available and financial soundness (Sub-Clause 4.9 (a)),

(d) personnel capabilities (Sub-Clause 4.10 (a) and (b)).

Each member must satisfy the following criteria individually:

(a) general construction experience for the period of as years stated in Sub-Clause 4.7 (a),

(b) financial soundness (Sub-Clause 4.9 (b)), and

(d) litigation history (Sub-Clause 4.11).

In accordance with the above, the Application shall include all related information required under Clause 4 for individual members of the joint venture.

5.3 Leader

The Danish lead company, who is responsible for performing contract management and is (together with its sub-contractors) executing minimum 60% of the value of the proposed contract, shall be "the Leader" during the pre-qualification and tender periods and, in the event of a successful tender, during contract execution. The leader shall be authorised to incur liabilities and receive instructions for and on behalf of any and all members of the joint venture, this authorization shall be evidenced by submitting a power of attorney signed by legally authorised signatories of all the members.

5.4 Limitation in number of members

There shall be a maximum of four partners in a joint venture for this project.

5.5 Joint and Several Liability

All members of the joint venture shall be legally liable, jointly and severally, during the tender process and for the execution of the contract in accordance with the contract terms, and a statement to this effect shall be included in the authorisation mentioned under Sub-Clause 5.3 above.

5.6 Joint Venture Agreement

A Letter of Intent to execute a joint venture agreement in the event of a successful tender shall be signed by all members and submitted with the Application.

5.7 Dissolution of Joint Venture

The pre-qualification of a joint venture does not necessarily pre-qualify any of its members to tender individually or as a member in any other joint venture or association.

6 Domestic Tenderer Price Preference

Not applicable in connection with the tendering of contracts financed under DSIF.

7 Requests for Clarification

7.1 Notification and Response

Applicants are responsible for requesting any clarification of the pre-qualification documents. A request for clarification shall be made in writing to the Employer's address indicated in the Invitation

for pre-qualification. The Employer will respond to any request for clarification issued by a registered Danish lead company that it receives earlier than 14 days prior to the deadline for submission of applications. Responses to individual queries and responses will be sent to all registered applicants.

8 Submission of Applications

8.1 Delivery

Submission of applications for pre-qualification must be received in sealed envelopes either delivered by hand, by Courier, or by registered mail to the address not later than the date stated in the Invitation for pre-qualification. The name and mailing address of the applicant shall be indicated on the envelope, which shall be clearly marked as indicated in the Invitation for Pre-qualification. A receipt will be given for all applications submitted.

8.2 Late Applications

The Employer shall reject late applications.

8.3 Language

All information requested for pre-qualification shall be provided by applicants in the language indicated in the invitation for Pre-qualification. Information may be provided in another language, but it shall be accompanied by an authorized translation of its relevant passages into the language of the invitation. This translation will govern and will be used for interpreting the information.

8.4 Lack of Information

Failure of an applicant to provide comprehensive and accurate information that is essential for the Employer's evaluation of the applicant's qualifications, or to provide timely clarification or substantiation of the information supplied, may result in disqualification of the applicant.

8.5 Material Changes

Applicants, and those subsequently pre-qualified, shall inform the Employer of any material change in information that might affect their qualification status. Tenderers shall be required to update key pre-qualification information at the time of tendering.

9 Employer's Notification and Tender Process

9.1 Invitation to Tender

Following the completion of the evaluation, the Employer will notify all unsuccessful applicants in writing, and invite successful applicants to submit tenders.

9.2 Conditional Pre-qualification

Not applicable in connection with the tendering of contracts financed under DSIF.

9.3 One Tender per Tenderer

Only firms and joint ventures that have been pre-qualified under this procedure may submit a tender. A firm shall submit only one tender in the same tender process, either individually or as a member of a joint venture. No firm can be a subcontractor while submitting a tender individually or as a member of a joint venture in the same tender process. A tenderer who submits, or participates in, more than one tender will cause all the tenders in which the tenderer has participated to be disqualified.

9.4 Tender Security

"Not applicable"

9.5 Changes after Pre-qualification

Any change in the structure or formation of an applicant after being pre-qualified and invited shall be subject to written approval of the Employer at least 28 days prior to the deadline for submission of tenders. Such approval will be denied if as a consequence of any change:

(a) An individual firm, or a joint venture as a whole, or any individual member of a joint venture fails to meet any of the collective or individual qualifying requirements,

(b) The new members of a joint venture that were not pre-qualified in the first instance, either as individual firms or as another joint venture, or

(c) In the opinion of the Employer, this results in a substantial reduction in competition.

9.6 Employer's Rights

The Employer reserves the right to take the following actions, and shall not be liable for any such actions:

(a) Mend the scope and cost of the contract to be tendered, in which event tenders will be invited only from those applicants who meet the resulting amended pre-qualification requirements,

(b) Reject or accept any pre-qualification application, and

(c) Cancel the pre-qualification process and reject all applications.

Project Summary

1. Background and Description of the Project

Faisalabad is the third largest city of Pakistan with an estimated population of 3.4 million with growth rate of 3.70% and is a hub of industrial activities in the country. It is estimated that WASA Faisalabad provides about 72% of the city with sewerage services and about 70% with water services. The topography of Faisalabad city is flat, and the wastewater is being pumped through the sewerage system by WASA-F. Untreated wastewater from households and industries is discharged into drainage channels which eventually flow to rivers. The ground water quality of the city is brackish and not suitable for potable water, in particular near the drains. The groundwater is badly affected by the haphazard construction of industries discharging their untreated polluted effluent into open fields around them and due to irrigation by untreated wastewater. A Feasibility report has been made making recommendations for the design and construction of a new wastewater treatment plant (WWTP). The primary recommended technology is based upon trickling filters with thermophilic digestion of sludges.

2. Description of the Scope of works to be provided, financed under DSIF

The Works shall be delivered as a single Design-Build-Operate (DBO) contract based upon FIDIC 1999 Yellow Book with added elements concerning the 5 years O&M period. The Contract shall be bid and delivered in two Works Sections as follows:

Works Section 1 Design and construction of the Eastern Wastewater Treatment Plant (44 MGD) of Faisalabad City

Works section 2 Operation and Maintenance of the Eastern Wastewater Treatment Plant (44 MGD) of Faisalabad City and to train operational staff.

Bidders shall be required to bid for both works sections.

Works Section 2 shall be enacted immediately when all of the works have reached material completion

The particularization of the contract shall be minimal so as to leave all of the Yellow Book terms and conditions relating to the Design-Build elements intact throughout the Operation and Maintenance Period. The primary particularizations shall relate to incorporation of new schedules into the contract to meet the Contractor's fees for his services, and his costs of fuel, process chemical costs, supply of

spare parts and, where necessary, asset replacement.

The scope of the Employer's Requirements is summarized in the five bullet points below:

2.1. Rehabilitation of an Open Channel

A primary component of the inlet to the proposed WWTP is an open channel known as Channel 4. This transports domestic wastewater and wastewater from textile industries. Currently farmers extract this polluted water for irrigation of crops. This practice is unsanitary. To prevent its continuation, the Contractor shall cover the channel to prevent future access. The Contractor shall design the means of covering the channel within the design phase of the works and shall provide for ventilation of off-gases. The Contractor shall install the cover to the channel and shall be liable for the continued use of the channel during its construction.

Figure 1-2: Channel 4 near Pumping Station 36 and wastewater pumped from Channel 4

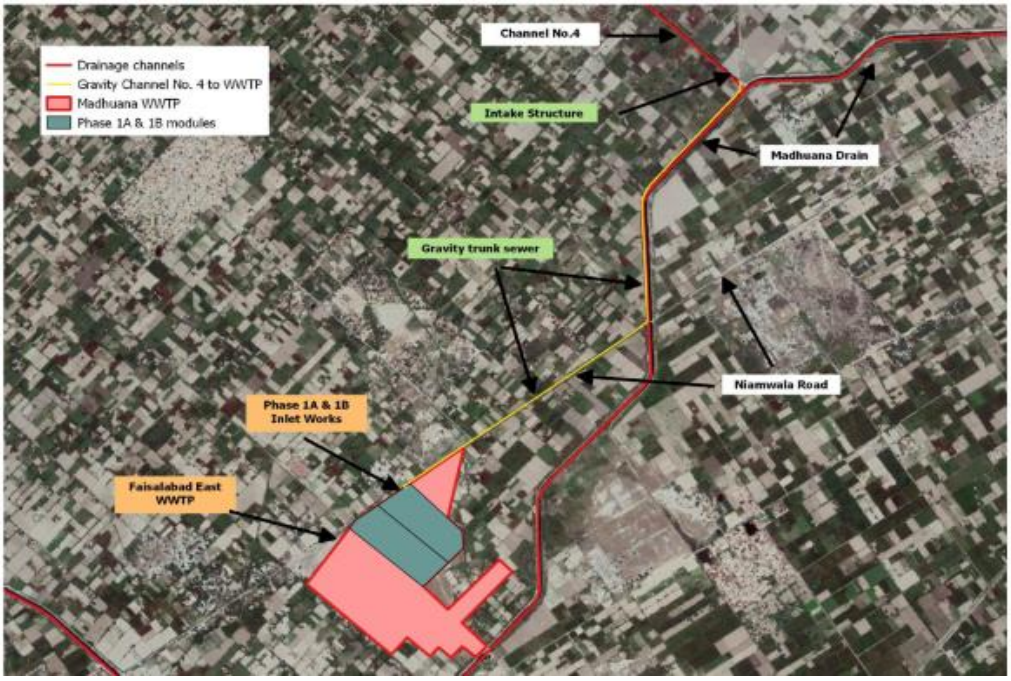

Figure 3: Showing location of proposed WWTP, Channel 4 & Trunk Sewer

2.2. Design and Construction of a trunk sewer to the inlet of the new WWTP

The proposed site for the construction of the WWTP is 2.6 km away from Channel 4 on a road known as the Nilamwala Road. The Contractor shall design and construct a gravity trunk sewer to convey wastewater from Channel 4 to the inlet works of the proposed WWTP. The contractor's design shall ensure that the connection point between the gravity trunk sewer and the channel will be at a rectangular weir. This weir shall act as a stormwater overflow which shall divert excess flows into the Madhuana Drain.

2.3. Design and Construction of a 44 MGD (200,000 m3/day) capacity WWTP

The Contractor shall design and build a 44 MGD (200,000 m^3/d) capacity Wastewater Treatment Plant to treat the wastewater diverted from Channel 4 by the new trunk sewer as in Figure 3 above. The plant shall comprise 2 Modules each of 100,000 m^3/d capacity. The treated effluent from the WWTP shall meet the National Environment Quality Standards (NEQS) of Pakistan, EU standards (for BOD_5, COD and suspended solids) as well as WHO standards for effluent disinfection. The process train shall cater for the high ratio of COD/BOD_5 caused by the high presence of wastes from the dyeing industry.

The Contractor shall design and install the WWTP and train the client's operators on the operation and maintenance of a WWTP with the following process technologies:

- coarse and fine screening;
- grit and grease removal;
- inlet pumping station;
- primary sedimentation for all wastes;
- flocculation and coagulation system complete with chemical make-up plant;
- chemically aided sedimentation tanks;
- biological treatment process (trickling filters with recycle system);
- secondary sedimentation;
- sludge dewatering via centrifuge;
- anaerobic digestion system;
- combined heat and power (CPH) with biogas conditioning and flare stack;
- UV radiation-based disinfection system to meet the WHO prescribed limit of faecal coliforms (1000 /100 ml) for unrestricted irrigation;

- onsite waste landfill to receive screenings, grit and dewatered sludge complete with facilities for biogas collection, leachate handling (approximately 100,000 m^2) and appropriate odour control;
- industrial buildings to include, but not be limited to, an administration building, workshop and laboratory,
- control & automation, and
- fencing, landscaping and access roads.

The Contractor shall design the plant using a life cycle cost approach and provide a cost guarantee for the operation of his design. His guarantee shall be proven during the performance tests and the trial period. The Guarantee shall be based on pre-defined flowrates, and influent / effluent quality of the waste water.

2.4. Construction of an outlet force main from the new WWTP to an irrigation channel

The Contractor shall design and install the WWTP to comply with World Health Organization (WHO) irrigation reuse standards. Final disposal of effluent shall be to a canal known as the Gogera Irrigation Branch Canal. The Contractor shall design and install an Effluent Pumping Station together with an 8.5 km force main to transfer the final effluent to the final point of disposal.

2.5. Operation and maintenance of the Faisalabad East WWTP for five years

The Contractor shall provide staff with expertise in the Operation & Maintenance of a complex WWTP that uses physical, chemical and biological treatment processes, to operate and maintain the works for a period of 5-years from material completion of the works. The operation and maintenance shall include the operation and maintenance of the trunk sewer, pumping station and effluent pipe and landfill. During this period the Contractor shall:

- meet, from a dedicated schedule of payments, the costs of works operation to include the fees of his operational and management staff, power costs and process chemical costs
- meet, from a dedicated schedule of payments, the costs of necessary spare parts
- be strictly liable for the operation of the works and its ability to meet effluent and sludge standards, meet odour standards within the works and at its boundary, meet noise restrictions at the works boundary, etc.
- attend monthly management meetings with the management of WASA-F.
- amend/update the O&M manuals produced during the design build phase.
- provide documentation on the operation of the WWTP in the form of quarterly progress

reports and a final report in month 59.

Furthermore, the Contractor shall provide additional training to the operational staff of WASA-F over the 5-year period Operations and Maintenance Period. Training shall be a mixture of on-the-job training and lecture room training. The objective shall be that WASA-F staff will gain adequate learning and experience of the plant operation and maintenance to run the project on sustainable basis by the end of the 5 years period.

3. Relevant information on the project location and site, facilities and services provided by the Employer, etc.

3.1. Climate

The main elements of the climate in Faisalabad are given in the two charts below:

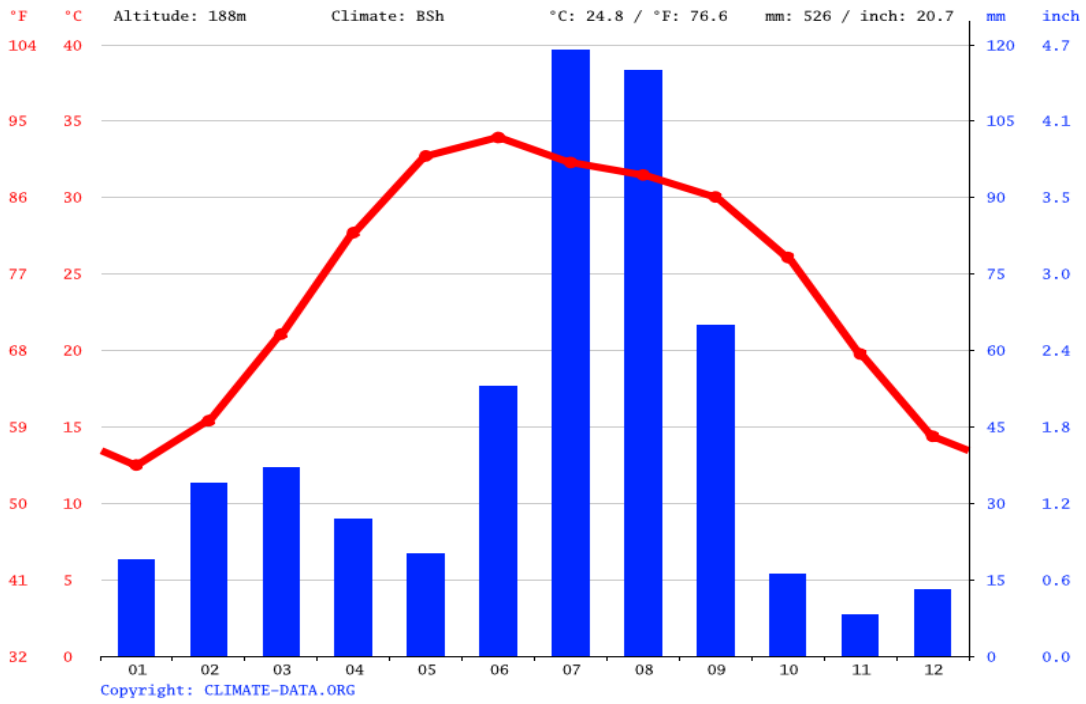

Figure 4: Rainfall and Temperature in Faisalabad

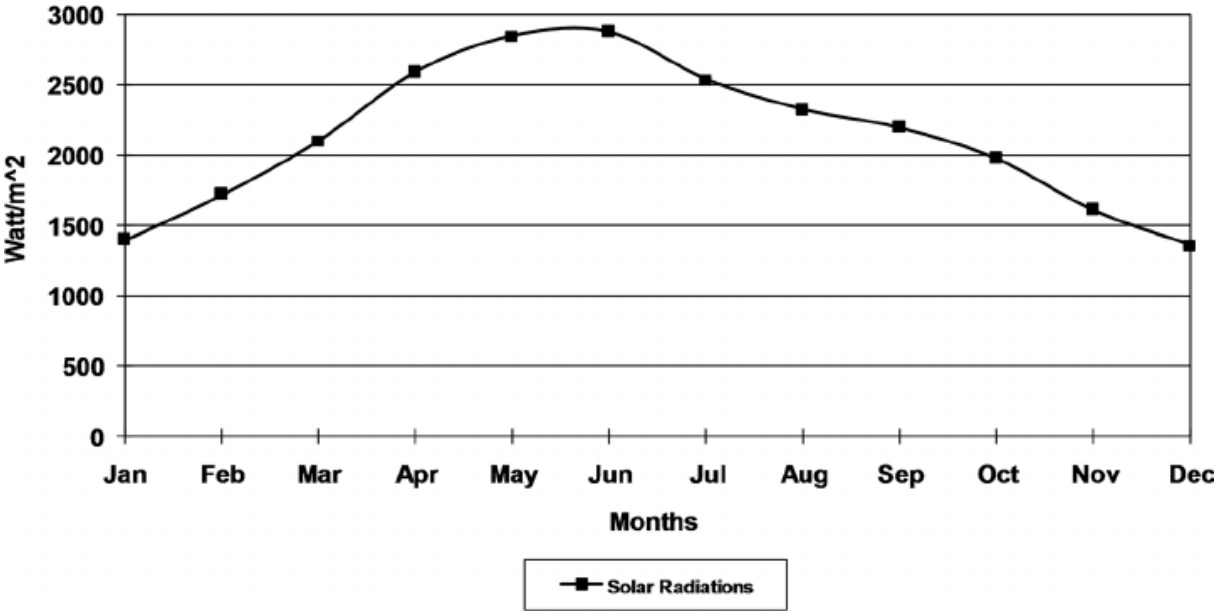

Figure 5: Solar Radiation in Faisalabad

Pakistan lies in an area of one of the highest solar insulations in the world and has immense solar resources, suitable for both Photovoltaic (PV) and Thermal Solar Power applications. The Annual Direct Normal Solar Radiation for CSP is in the range of 5 to 5.5 kWh/m^2/day in Southern Punjab and Northern Sindh and around 4.5 to 5 kWh/m^2/day in the rest of Pakistan.

3.2. General topography, hydrology and geology

Faisalabad lies in the rolling flat plains of northeast Punjab, at 186 metres (610ft) above sea level. The district is part of the alluvial plains between the Himalayan foothills and the central core of the Indian subcontinent.

The proposed site for the WWTP is substantially flat hence the need for inlet and effluent pumping stations. Geotechnical reports will be made available to the bidders during the tendering stage.

The Chenab River flows about 30km (19miles), and the Ravi River meanders 40km (25miles) to the southeast. The alluvial deposits are typically over a 300m thick (1,000 ft). The old floodplains consist of Holocene deposits from the Ravi and Chenab rivers.

The soil consists of young stratified silt loam or very fine sand loam which makes the subsoil weak in structure with common kankars[1] at only 1.5m (5ft). The course of the rivers within Faisalabad are winding and often subject to alternations. In the rainy season the currents are very strong.

3.3. Site Access

Faisalabad is very well connected to the remainder of Pakistan (i.e. Lahore and Islamabad) by the M2

[1] Nodular calcium carbonate

Motorway. At a local level the proposed site lies adjacent to the Nilamwala road which will be the main route for construction traffic. The Contractor shall maintain this road and its verges in serviceable condition throughout the construction period and shall restore its condition prior to material completion of the works.

3.4. Facilities to be provided by the Employer

The Employer shall have obtained the planning, zoning or similar permission for the Permanent Works and the Employer shall provide timely access to the site.

3.5. Contractor's obligations to perform tests

The validity of the contractor's process design shall be tested during the trial period and the works shall not be deemed material complete unless and until the tests during the trial period demonstrate that the WWTP can achieve the required effluent and sludge standards. The Tests After Completion shall be particularized such that they are performed by the Contractor and witnessed by the operational staff of WASA-F. The validity of the Contractor's cost guarantee shall be tested during the Defects Notification Period.

4. Origin of tender documents and origin and type of contract documents

The tender documents shall originate from WASA-F and shall be in accordance with the 2019 edition of the DSIF Rules for Procurement which are based upon FIDIC Procurement Procedures Guide, 1st Edition 2011 and the FIDIC Project Sustainability Manual (PSM II 2013). Implementation shall be under the FIDIC publication FIDIC - Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works Designed by the Contractor (1999) amended using clauses from the 2008 FIDIC Gold Book for DBO, to permit addition of the 5-year operations, maintenance and training period

5. Tentative date of award, date of commencement and completion of the Works

The Construction period shall be three years and shall contain a 90 days' design period and a minimum trial period of 45 days. The Defects Notification Period shall be 365 days. From the date of material completion of all of the works and for a period of 5 years, the Contractor shall operate and maintain the works and provide training in its operation. Deliverables within the design period shall be a Preliminary Report on Design Deliverables and a Final Design Report. The trial period shall

commence after an adequate amount of bio-mass has developed in the trickling filters and sludge has stabilized within the anaerobic digestion system, and after successful completion of the process testing and commissioning procedures.