REQUEST FOR EXPRESSIONS OF INTEREST
(CONSULTING SERVICES - FIRM SELECTION)

Memo No. 03.07.0000.056.011.208.23-1812 Date: 14.11.2023

COUNTRY: Bangladesh.

NAME OF PROJECT: Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN) Development Project

(Bangladesh PRIDE (PI 70688))

Credit No.: IDA-6676 BD

Assignment Title: **Feasibility for establishing desalination plant at BSMSN**

Reference No.: **PMC-8A-BSMSN-BEZA**

The Government of the People's Republic of Bangladesh has received financing from the World Bank toward the cost of the Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN) Development Project, a project under Bangladesh Economic Zones Authority (BEZA) and intends to apply part of the proceeds for consulting services.

One of the core initiatives of the project is to ensure the availability of skilled labour necessary to attract and grow high value-add business, construction of industries, security services and delivering equitable access to jobs, as well as skills formation among workers in companies in their supply chains.

In order to meet the growing demand of fresh water in BSMSN-EZs, BEZA envisages establishing desalination plant with leading service developer/operator/provider as the private partner in a phase wise manner under financial assistance of BSMSN Development Project under the PRIDE project of World Bank. BEZA would like to engage a Consultant for performing a market /techno-financial review of desalination technologies and an analysis of investment opportunities/prospects and challenges for implementing desalination projects under PPP modality in BSMSN.

The brief description of this assignment includes, but not limited to the followings:
Component 1 (a): Assessment of current water management scenario in BSMSN in order to assess the future challenges and the necessity of desalination plant as an option in the region.
Component 1 (b): Preparation of the detailed feasibility report and recommend a suitable PPP contract structure.
Component 2: Market Sounding: To test private sector's ability to assume risks that are to be transferred via the PPP contract from BEZA to the private sector.

The implementation period of the Services is estimated to be for a period of nine (9) months.

The indicative Terms of Reference (TOR) for the assignment and prescribed format (Annex-I) for submission of Expression of Interest can be found at the following website: www.beza.gov.bd.

The Bangladesh Economic Zones Authority (BEZA) now invites eligible Consulting Firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information as per Prescribed Format mentioned above (Annex-I) demonstrating that they have the required qualifications and relevant experience to perform the Services.

The shortlisting criteria are as follows;

- At least 10 years of general experience under consultancy contracts satisfactorily completed as Consultant (Consulting Firm). In case of JV all members must meet the requirement;

- Experience in Consulting Services of similar nature assignment: Feasibility Study for implementation of PPP project (in terms of number of contracts, Contract value, Contract duration, etc.) within the last 10 years. The consultant will submit necessary supporting documents to understand the experience for evaluation;
- Similar experience in Bangladesh, South Asia, Southeast Asia will get priority;
- Staffing of the firm indicating appropriate skills/experts;
- Technical and managerial capability of the firm;
- Experience of working under development partner funded project will be an added advantage;

(N.B. Years will be counted backward from the date of publication of REOI in the newspaper)

Key Experts will not be evaluated at the shortlisting stage.

The attention is drawn to Section III, paragraphs, 3.14, 3.16, and 3.17 of the World Bank's "Procurement Regulations for IPF Borrowers" September 2023 ("Procurement Regulations"), setting forth the World Bank's policy on conflict of interest related to the assignment.

Consultants may associate with other firms to enhance their qualifications but should indicate clearly whether the association is in the form of a Joint Venture (JV) and/or a Sub-Consultancy. In the case of a JV, all the partners in the JV shall be jointly and severally liable for the entire contract, if selected. The maximum partners of the association either JV member or Sub-Consultancy shall be three (3). The qualifications of the sub-consultants will not be considered in the evaluation of EOIs for shortlisting purposes.

A Consultant will be selected in accordance with the Quality and Cost Based Selection (QCBS) method; Market Approach- Open International set out in the Procurement Regulations.

Further information can be obtained at the address below during office hours [i.e.,0900 to 1600 hours].

Expressions of interest must be delivered in a written form along with a USB drive to the address below (in person, or by mail, or e-mail) by 11 December 2023, 14.00 Hours Bangladesh Standard Time. If delivered through email, the client shall not be responsible for the confidentiality of the EOI.

14/11/2023

Abdullah Al Mahmud Faruk
Project Director
Bangabandhu Sheik Mujib Shilpa Nagar (BSMSN) Development Project
Bangladesh PRIDE (70688)
Bangladesh Economic Zones Authority (BEZA)
Biniyog Bhaban (Level 7,8,9)
Plot#E-6/B, West Agargaon, Dhaka 1207, Bangladesh.
Phone: +880244826009
E-mail: pd.pride.beza@bsmsn.gov.bd

Annex-I

Prescribed Format for Submission of Expresssion of Interest(EOI)

(In case of Joint Venture, this Form to be completed by each partner of the JV)

Package No.	:	PMC-8A-BSMSN-BEZA
Assignment Title	:	Feasibility for establishing desalination plant at BSMSN

1. Letter of Submission [Addressing Project Director, Bangabandhu Sheik Mujib Shilpa Nagar (BSMSN) Development Project (Bangladesh PRIDE (P170688)), BEZA]

2. Firm's legal title:

3. Firm's registered and Head Office address:

4. Firm's year of registration in Business: (Years of Establishment /Years in business as per Trade License/Registration Certificate etc.)(Necessary Attachments: Copy of Company/Firm's Trade License, Registration Certificate etc)

5. Firm/Company Background (General information including Core Business): Necessary Attachments: Brochure, Annual Report etc.

6. Accreditation Certificate of the Firm: if any

7. General Experience of The Firm: Successful completed contacts in consultancy services

Sl. No.	Name of the Assignment and Funded	Brief Description of the Assignment (Main deliverables/outputs)	Role in the Assignment (Single Entity/Lead partner in a JV/JV Partner)	Name and address of the client (contact information for reference)	Service Duration (start & End Dates)	Man- Month Input	
						Firm's Input	Partner's Input (if any)

(General Experience: One completion certificate which demnostrated maximum general experience counting from start date of the completed contract in consultancy services)

8. Experience of the Firm in similar nature assignment successfully and substantially completed within the last 10 years (list only those assignments which are similar to the proposed consultancy services)

Sl. No.	Name of the Assignment and Funded	Brief Description of the Assignment (Main deliverables/outputs)	Role in the Assignment (Single Entity/Lead partner in a JV/JV Partner)	Name and address of the client (contact information for reference)	Service Duration (start & End Dates)/ Progress for substantially completed contract(s)	Value of Service (BDT/USD/..)			Man- Month Input	
						Total Value	No. of Partners (If any)	Value of Service Provided by the Firm	Firm's Input	Partner's Input (if any)

(Necessary Attachments: Details Description of the assignment supported by copy of project data sheet (PDS), Contract Agreement, Completion Certificate from Procuring Entity etc.)

9. List of Professional (including experts)/ Managerial staff of the Firm: (List Full time and part time staff separately)

Sl. No.	Name of Professionals	Position held in the Firm	Educational Qualification	Areas of Expertise	Total Experience (years)	Experience as Firm's Employee (years)	Remarks (if any)

10. Organizational & Financial Capalility and Capacity of the Firm:

i .Organizational Capacity, Equipment and logistics of the Firm

a) Office Space: Location(s), Area, Floor No. etc.

b) No. of Support Staffs:

c) Decription of Important Equipment and other Logistics:

ii .Financial Capability of the firm (Consultancy Turover over the last 5 years)

a) 2022-23 :

b) 2021-22 :

c) 2020-21 :

d) 2019-20 :

e) 2018-19 :

11. Any other relevant document if required

Bangladesh Economic Zones Authority
Prime Minister's Office
BSMSN Development Project

TERMS OF REFERENCE FOR FEASIBILITY STUDY ON ESTABLISHMENT OF DESALINATION PLANT AT BSMSN

Package Name: Feasibility for establishing desalination plant at BSMSN
Package No.: PMC-8A-BSMSN-BEZA

1. Background

Global demand for water continues to increase whilst freshwater sources are becoming scarce due to increasing demand for natural resources and the impacts of climate change, particularly in semi-arid and coastal areas. BSMSN is situated near coastal area, as a result most of the water of this industrial city will be salinized and there will be lack of sweet water in the area. Currently, BEZA has finalized a comprehensive master plan for developing this smart Industrial City, incorporating Sea Port, Rail Connectivity, Marine Drive, Residential Area, Tourism Park, Power Plant, Hospital, School and University, etc. (Annexure 1 & 2). This shall generate substantial demand for water by the industries and waste treatment. Initial assessment shows that around 1013 MLD of potable water will be required by 2040 (IWM report)where desalination plants have been identified as one of the options for BSMSN. However, the cost of water generated from desalination and water tariff could be much higher than other two alternative sources (Surface water from Muhuri Reservoir and groundwater). On the other hand, sourcing of water from underground will be a permanent damage to the aquifer which would not be replenished in the wet season like urban centers such as Dhaka and Comilla. Therefore, the authority aims to understand the range of potential water resources in this region which is essential in order to diversify the water management portfolio of the city addressing regulatory requirements (National Environment Policy 2018) as well as to increase water security across the region.

In order to meet the growing demand of fresh water in BSMSN-EZs, BEZA initially envisages establishing a desalination plant of 30 MLD capacity (May vary based on the findings of the study) with a leading service developer/operator/provider as the private partner in a phase wise manner under financial assistance of BSMSN Development Project under the PRIDE project of World Bank. BEZA would like to engage the services of a Consultant to support and work with BEZA for performing a market /techno-financial review of desalination technologies and an analysis of investment opportunities/prospects and challenges for implementing desalination

projects under PPP modality in BSMSN. The Assignment is consistent with the Green and Resilient Economic Zone (GREZ) Guideline approach, which aims to promote efficient use of water and energy resources, and to address climate change mitigation, adaptation and resilience in the coastal area through increasing the market penetration of water-efficient technologies and building markets for sustainable water use.

2. Objective(s) of the Assignment

The first objective of this assignment is to study the overall water sustainability of BSMSN in the context of current and projected water demand, availability, sources/options, consumption scenarios and initiatives taken and assess the necessity of desalination plant as an alternative and viable option for BSMSN.

Based on the recommendations of the first study, and assuming that the recommendation includes requirement of a desalination plant, the second objective of this assignment is to carry out a feasibility study (including technical, financial and environmental and social feasibility) of a desalination plant, which is detailed under the Scope of Work in the table below. The study will also develop a bankable business model (preferably on a PPP structure) based on the outcomes of the feasibility study and market assessments on desalination plant in BSMSN. The detailed feasibility study would comply with World Bank Environmental and Social Standards, procurement and other requirements, follow GIIP and be in line with Government of Bangladesh requirements for PPP Projects.

2. *Scope of Work*

The major areas of the scope of work are summarized in Table below.

Component/ Phases	Task
Component 1 (a): Assessment of current water management scenario in BSMSN in order to assess the future challenges and the necessity of desalination plant as an option in the region.	**Task 1:** Assess the current and projected water demand in BSMSN, until 2040, under different scenarios; also identify all the alternative potential sources of water and the likely quantum of water available from each such source currently and projected until 2040; assess the future challenges in different sectors and viable options in water practices, which are aimed at minimizing differences between demand and supply at present and in the future by 2040. In this case, water shortages may be addressed through anticipatory planning measures. Based on the assessment, evaluate the necessity of a desalination plant as a possible source of water in the region and the quantum of desalinated water required to bridge the projected demand supply gap.

Component 1 (b): Preparation of the detailed feasibility report and recommend a suitable PPP contract structure	**Task 1:** Conduct a detailed feasibility study of a DESAL plant of 30 MLD capacity (May vary based on the findings of the study) that could be constructed and operated in an environmentally and socially sustainable manner. The feasibility should assess technical, economic, financial and environmental and social viability of the plant, which would include, but not limited to: a) Detailed site assessment and analysis of the site condition to identify the technical solution for DESAL plant of 30 MLD capacity in BSMSN; b) based on an analysis of the quality of the water source, identify alternative DESAL technologies and evaluate each of these technologies along various relevant parameters, including, cost, energy consumption, etc. c) estimated revenue projections, based on different tariff scenarios (in line with existing tariff for piped municipal/industrial water supply in Bangladesh and tariff for such water supply in neighbouring countries with similar economic development) and assessment of multiple potential and feasible sources of revenue for delivering process water supply including any potential for revenues from any resource recovery, recycling if applicable, over the lifecycle of the plant ; d) Conceptual/indicative layout of the DESAL plant with proposed onsite infrastructures, collection/distribution networks, including connectivity, utility and waste management requirements etc; e) Propose optimum specifications of all elements of onsite infrastructure of the DESAL plant and their estimated capital and O&M costs; f) Financial Analysis and Assessment, including development of detailed project construction cost, O&M cost, revenue estimates, and project and equity IRR, payback period, and develop a detailed financial model, based on financing and other assumptions from consultations with potential domestic and international financiers and on a bankable PPP structure, that could potentially include revenue share with BEZA; g) Economic Analysis and Assessment, including development of a model to arrive at Economic Internal Rate of Return (EIRR), and ENPV for the project; h) assess environmental and social risks and impacts, based on World Bank Environmental and Social Framework (ESF), GIIP and Government of Bangladesh standards, including climate risk assessment and recommendations; i) legal & regulatory assessment to ensure that the proposed project configuration is in line with the BSMSN Master Plan, BEZA's Green and Resilience Economic Zone (GREZ) guidelines and Government of Bangladesh standards, with recommendations on the optimal PPP structure, in line with Bangladesh's PPP Act and PPP Authority's PPP guidelines and also if any amendments are required to facilitate implementation of the proposed project; and j) PPP modality options and recommendation on optimum risk sharing matrix, given the

	inputs received from interactions with BEZA, potential private sector partners and potential financiers, to understand their expectations. **Task 2**: Support BEZA in preparing reports and presentations that may be required to seek approvals from Cabinet Committee for Economic Affairs (CCEA), any other Government of Bangladesh institution or World Bank and in addressing any issues raised/ clarifications sought or revisions in the feasibility report required by the CCEA, any other government organization or World Bank prior to approving the project for implementation under the PPP Act.
Component 2: Market Sounding	**Task 1:** Market Sounding 'Briefing Document' to be prepared, based on the above approved feasibility report and PPP structure **Task 2:** Conduct market sounding with targeted potential national/international developer/operator/service provider with experience of developing similar project through structured questionnaire and/or in-depth discussions, to gauge their interest levels in participation and also to ascertain if the proposed feasibility study and PPP structure addresses their concerns / inputs shared in the initial market sounding **Task 3:** Recommend final PPP modality/risk-sharing structure by incorporating inputs from the feasibility study and market sounding (if any changes are required). **Task 04:** Any other support that may be required by BEZA to finish the tasks under the component 1 and 2.

4. Detailed Tasks:

Component 1 (a) Assessment of current and projected water demand in BSMSN, until 2040, under different scenarios; also identify all the alternative potential sources of water and the likely quantum of water available from each such source currently and projected until 2040 ***in BSMSN in order to evaluate the future challenges and the necessity of desalination plant as a potential option for water supply in the region.***

Effective management of water resources in BSMSN warrants some anticipation of how water resources are going to change in the future under the influence of both natural and manmade changes in the industrial city. Undertake quantitative analysis using forecasting models and tools to determine the following: (1) quantitative assessment of water supply including water availability and water management options in BSMSN between now and 2040; (2) quantitative analysis of the water demand, both for industrial process requirement, as well as for drinking purposes, in different sectors of the BSMSN industrial city between now and 2040; in addition to quantitative models and assessments, the demand assessment should also be based on intensive direct engagements / discussions with investors and BEZA officials (3) optimization and simulation of water resource

systems at BSMSN. Based on the above, the consultant should recommend when (in which year), what capacity of Desal Plant is required to fill the demand supply gap of water in BSMSN.

Knowledge of the hydrological regime of a region or a watershed is a crucial prerequisite for this hydrological work. The available water has to be assessed with regard to quantity and quality of groundwater resources, surface water and marine or coastal waters. With a view to fulfill the requirements of this assessment, the consultant will study the current and future water supply initiatives in the influence area of BSMSN. Consultant shall use primary data for carrying out this assessment in BSMSN along with existing available data from recent studies, relevant national agencies, various regional institutions involved in collection and management of water related data.

This assignment is proposed to be undertaken in two clear phases: Component 1(a) will comprise the Assessment of current water demand – supply scenario and the potential requirement of desalination plant as one of the sustainable water supply options in the region. and if approved by BEZA and other Government of Bangladesh entities, then BEZA will move ahead with Component 1 (b) and 2 of the assignment, which will comprise preparation of the detailed feasibility report and Market Sounding. At the end of Component 1 (b) of this assignment, BEZA, at its discretion, could decide not to move ahead with component 2 of this assignment.

Component 1 (b) Preparation of the detailed feasibility report and recommend a suitable PPP contract structure for establishing desalination plant at BSMSN.

The detailed feasibility report is expected to be developed based on the technical study. The detailed feasibility study will include the following:

A. Technical due diligence.

The aim of technical assessment is to confirm the assessment of best available desalination technologies, technical specification, environmental impacts and energy requirements as well as cost and financial aspects. In particular, the best technical solution should be selected among the following scenarios (and others the consultant may evolve) and justified through the technical and economic comparison:

- 1st Scenario: Desalination Plant is a standalone unit, the source of input water is from sea / marine sources and the operational electrical energy is bought at the prevailing commercial conditions
- 2nd Scenario: Desalination Plant is integrated with a source of re-cycled water such as from Central Effluent Treatment Plant operating in BSMSN.

The Consultant is required to:

- Assess the viability of different desalination technologies to identify the technology suitable for BSMSN in line with the national and international drinking water and process water standards
- Assess whether the proposed technology has any significant geotechnical or any other significant technical risks
- Confirm the optimized process water composition (outlet) to serve the majority of the companies based on the prevalent industries in zones 2A and 2B and also for drinking water purposes and use it as design input for the evaluation of the most suitable technology for the

sizing and phasing of the desalination plant. Including considerations on how to make desalination a greener/ more sustainable solution (integration with energy efficient solutions and renewable energy options)

- Obtain reliable seawater analysis reports from local and international sources and work out the relevant design conditions with consideration given to the changes expected in the future because of climate change and of the planned new industries to start activity in that area

The consultant will carry out the technical due diligence, analysis, and assessment of the project, including:

(i) A comprehensive assessment of the proposed site for the DESAL project. This assessment will include, amongst others the following aspects: (a) a complete assessment of geo-technical conditions to identify any potential technical problem that can impact the project (b) location of the industries and residences, the users of the processed water , common infrastructure, and other service-providing facilities, within BSMSN; (c) availability or possibility of making available utilities and other external infrastructure required at the site; (d) possibility of implementing the plant in a phase-wise manner ; (e) possible environmental and social footprints; (f) different methods/technologies used for the DESAL project. (g) other relevant aspects;

(ii) Based on the above assessment of the types and volumes of processed water/reject water to be managed by the DESAL project, and an assessment of brine water treatment/disposal options, prepare a comprehensive configuration for the project, that details all elements of the project, viz., collection, treatment, transmission, distribution, disposal, etc., and their technologies/processes that delivers on the requirements of the Government of Bangladesh's environmental norms, WB guidelines, BSMSN's master plan, etc.

(iii) The consultant should prepare conceptual/indicative layout of the proposed project, in line with specifically the water distribution network, the overall master plan and existing project development activities for BSMSN (annexure 01 & 02) keeping linkages and connectivity to the rest of BSMSN and also to various infrastructure facilities within BSMSN;

(iv) Based on the comprehensive project configuration prepared in (ii) above and the conceptual / indicative layout, and any other factors that may be relevant, the consultant should prepare a detailed estimation of the capital cost of the project (Capex). This Capex estimate should be based on actual quotations from potential plant and machinery and other equipment suppliers and on estimated costs of civil and other construction in Bangladesh for similar projects, adjusted, if required, specifically to the project site in BSMSN. Please note that the Capex could be phased, across multiple years, in line with the agreed (as approved by BEZA) demand-supply gap and the requirements of water from the Desal plant. In addition to Capex, the consultant should also provide the projected Total Project Cost (TPC), which, in addition to the Capex, would include pre-operative costs, interest during construction, and other such costs incurred in the course of implementing the project.

(v) The consultant should prepare projected estimate of operations and maintenance (O&M) costs for operating the DESAL plant as per the projected levels of operations of the plant. These costs should be based on

estimations from suppliers of plant and machinery and also based on current and projected cost of power in Bangladesh and any other consumables, etc., that would form part of O&M.

(vi) The consultant should identify all the linked projects and facilities, if any, related to the integrated DESAL project at BSMSN. The implications and impacts of these projects and facilities should be factored in the project's overall technical and financial viability.

B. **Legal and Regulatory framework and Project structure**

The consultant will undertake a detailed analysis of the legal and regulatory framework in Bangladesh pertaining to the projects, within Economic Zones. This analysis should include, amongst others, the following:

(i) Review existing laws/acts that govern the generation and management of municipal/industrial water supply system in Bangladesh, including national standards for process and drinking water;

(ii) Review existing laws/acts that governs the inception, planning, approval and implementation of DESAL projects in Bangladesh;

(iii) Explore existing DESAL projects within the municipal/industrial areas and evaluate the policy or legal/regulatory framework under which such projects were implemented and are governed. If possible, explore any projects that is operating within an industrial zone and providing the services directly to industrial consumers within the industrial zone

(iv) Informed by the above reviews and assessments, the Consultant should develop alternative project structuring and implementation options. The consultant would identify the pros and cons of each such structure from the point of view of (a) delivering on BEZA's objectives from the project and being amenable to BEZA's preferred risk sharing matrix; (b) attractiveness to potential private sector participants; (c) risk profile and its impact on bankability; (d) project implement-ability, in terms of project phasing, implementation time period and associated risks; and (e) any other factors that the consultant deems appropriate;

(v) Develop a recommended project structure, including justifications for the same, with a well-defined implementation phasing and list of approvals or licenses that would be required and the associated challenges and time frames for the same

C. Financial Analysis and Assessments. The consultant will carry out a detailed financial analysis and assessment of the project including:

(i) prepare tariff policy based on current tariffs in operational economic zones in Bangladesh, cost recovery/revenue generation options based on best practices or any other factors deemed relevant by the consultant, including discussions with all relevant Government of Bnagladesh authorities and appropriate BEZA officials, over the likely tenure of the project period, which are based on verifiable data and are sufficient to support project implementation and operation and which include step-ups and indexation where relevant, and indexation mechanism for various cost items;

(ii) Evolve a financing plan based on (a) evaluation of financing structures of recently financially closed similar or other infrastructure PPP projects in Bangladesh or neighboring developing economies; (b) interacting with potential sources of debt, sub-debt and equity in Bangladesh and also some potential international

financiers and the corresponding terms and conditions of the same; (c) securing inputs from BEZA regarding the funds available under the World Bank supported PRIDE project for supporting this project; (d) interactions with potential private sector partners to understand their preferred or likely financing structure for this / similar projects;

(iii) Prepare a detailed financial model in Microsoft Excel for the entire project, based on the revenue projections, project cost estimates and O&M cost estimates derived in the technical due diligence section of the feasibility study and the proposed financing plan. The financial model should include, but not be limited, to the following:

a. Assessing if the project is financially feasible and bankable, at different levels of revenue share with BEZA, based on its Project and Equity IRRs, NPV, Debt Service Coverage Ratio and other metrics of feasibility assessment;
b. Undertaking sensitivity analysis, i.e., "what if" scenarios, across various key parameters of the project to assess whether the project is financially feasible and bankable even under various adverse scenarios
c. determining value for money (VFM) for BEZA under PPP structure; and
d. evaluating other commercial structures as may be required;

The financial model should include appropriate accounting, depreciation and tax treatments relevant for the project. The financial model should allow for the input of an array of assumptions and outputs that are typical for similar DESAL projects to calculate pretax project IRR, project IRR, WACC, NPV, equity IRR, DSCR and LLCR. The financial model should provide outputs including projected financial statements (cash flow, balance sheet, profit and loss, etc.), feasibility metrics, project returns, etc., and provide outputs in tabular and chart forms.

The financial model in Microsoft Excel should be provided to BEZA in an unlocked form, i.e. formulas visible and editable in cells and, as a minimum, the models should include all of the above mentioned parameters and be for at least the likely PPP contract period.

Conduct walk-through of the financial model for BEZA as may be required; make and deliver presentations to other agencies of the Government of Bangladesh, like the Prime minister's Office (Line Ministry) and others, the World Bank, and other parties as requested on the financial analysis and other aspects of the project and respond to any queries or clarifications sought.

D. Economic Analysis and Assessment. The Consultant will carry out an economic analysis of the project in accordance with the guidelines of the Government of Bangladesh including:
(i) review the macroeconomic context of the project to provide an understanding of the economy's overall performance and outlook, and of how specific macroeconomic factors may affect project performance;
(ii) undertake a detailed demand analysis for drinking (municipal) and industrial water and analysis of the impact on the environment for the project;
(iii) help identify demands/problems to be solved by the project, the project intervention, outputs, expected outcomes and impacts;

(iv) identify project alternatives; least-cost analysis to be undertaken to identify the preferred alternative; the basis for selecting the preferred alternative should be clearly explained, particularly if it is not the least-cost alternative in economic terms;
(v) undertake and compare project benefits and costs in economic terms using with-project and without-project scenarios for each major project component; the basic criteria for assessing the project economic viability will be economic net present value and economic internal rate of return for subprojects/linked projects and total project; border parity pricing should be applied for major tradable cost and revenue items, along with other appropriate conversion factors;
(vi) undertake distributional analysis of project benefits to project beneficiary and stakeholder groups, and the extent to which they gain from benefits or bear costs associated with the project; undertake poverty impact assessment where necessary;
(vii) undertake sensitivity and risk analysis; where possible undertake a quantitative risk analysis and explicitly include probability distributions of key uncertain variables;
(viii) Undertake a value for money analysis to assess whether the project is beneficial economically and financially.

E. Environment and Social Footprint Assessment and Management Plan. As part of this exercise, the consulting team will conduct an assessment of potential environmental and social impacts of the project , including resettlement issues, if required. The consultant team will follow the ESF of World Bank while conducting the ES assessment. *This may not be a full environmental and social impact assessment (ESIA), or resettlement plan but a comprehensive review of the key ES issues.* Information from different ES instruments (ESMF, ESA, BMP etc.) developed so far for the PRIDE project may also be referred.

A review of the baseline study of physical environment should be included for the proposed site, which may include but not be limited to: i) climate, ii) land use/topography, iii) agriculture, iv) ecology, v) air quality, vi) noise, vii) soil quality and geology, viii) surface water, and ix) ground water etc.

In addition, an assessment of the biological environment should be undertaken and should include, but not be limited to: i) vegetation, ii) flora and fauna, iii) animals, and iv) ecologically sensitive/protected areas or special areas in the surrounding community.

Lastly, a review of the human and social environment should be undertaken and should include, but not be limited to: i) occupational health and safety and community health and safety, ii) socioeconomic, land acquisition and resettlement issues, iii) working & labour condition, iv) minority/child issues iii) historic and cultural aspects, if applicable. This review should also specifically address issues related to gender, the disadvantaged and the vulnerable, and i) if and how women and girls, the disadvantaged in particular will be impacted by the project and ii) how they can be included in the benefits that the community will derive from the project.

At this stage, the consulting firm should highlight areas of significant problems or highlight key ES issues and propose mitigation measurers and management plans in line with GREZ guidelines developed by BEZA (GREZ) with support from the World Bank. While undertaking this review, it should be kept in mind that the site will be utilized for a variety of industry sectors and green infrastructure facilities for which these impacts on the

physical and social environment must be identified and mitigated in the future. All mitigation measures along with the regulatory and safeguard requirements for both the environmental and social aspects should be quantified in such a way that the costs can be included directly in the financial and economic analysis.

The output of the consultant firm should include a detailed Terms of Reference for a Detailed Environment and Social Impact Assessment study and Management Plans to be undertaken at a later stage as per ESF of WB.

F. Climate risk assessment. Based on an initial climate risk screening assessment of the project, the performance of the proposed investment is likely to be affected by future changes in climate conditions and their impacts including temperature increase, precipitation increase, flood, and land slide risk. To achieve the impact and outputs of the proposed investments, a climate risk and vulnerability assessment (CRVA) is required to provide a detailed and focused risk and vulnerability assessment that will identify and, to the extent possible, quantify risks to the project from climate change and variability, and provide corresponding adaptation measures. Outputs of the CRVA will be used by the PPP SPV to finalize detailed design. The climate risk assessment for the DESAL plant should include the following analyses:

(i) Conduct a climate change vulnerability and risk assessment for the project area to identify vulnerability of the planned infrastructure, and adaptation measures to be incorporated into the project/ DESAL plant design;
(ii) review existing studies, data and information on current and projected climate change risks and vulnerability for the proposed specific geographic areas, sectors, and time covered by the project;
(iii) identify climate risks and vulnerabilities and potential adaptation options and practices as inputs to modelling and/or assessment of climate change impacts on relevant aspects of the project;
(iv) conduct technical and economic assessments of potential climate risk and vulnerability adaptation options and practices relevant to the project;
(v) within the context of the project, assess existing policies, laws and regulations and/or institutional framework that suggest for adaptation and identify ways to enhance the enabling environment (if necessary);

G. PPP Options. The consultant should identify and evaluate all the possible PPP options for implementing the DESAL project at BSMSN, and recommend the one best suited to this project. The pros and cons of each option should be evaluated rigorously across an exhaustive set of relevant criteria, which would include, amongst others, the following:

i. Deliver on BEZA's objectives from this project;
ii. Maximization of DESAL capacity and utilization/recovery of resources within BSMSN;
iii. Optimal risk sharing between BEZA and the Private Sector Partner, with each partner bearing the risks that they are best equipped to address / mitigate
iv. Attractiveness to potential private sector participants / bidders
v. Financial returns to the private sector partner and BEZA (if the option recommends investment participation by BEZA from its receipts from PRIDE Project or provides for a revenue share to BEZA)
vi. Bankability, i.e., levels of comfort to potential lenders to the project

vii. Ability to absorb the funding available to BEZA for this project from PRIDE project, in a manner that optimizes BEZA's financial returns as well as is in line with BEZA's capacity to manage this investment;
viii. Maximizes BEZA's and the Government of Bangladesh's Value-for-money;
ix. In line with the current legal and regulatory framework;
x. Any other criteria that the Consultants believe to be appropriate for this evaluation

The consultant should detail out the recommended PPP option across all its dimensions, including the roles and responsibilities of BEZA and the private sector partner. The Consultant should also outline the pros and cons of the recommended PPP option, as well as its risks and potential risk mitigation measures and risk-sharing mechanisms.

The consultant would support BEZA in preparing reports and presentations that may be required to seek approvals from CCEA, DoE, World Bank and any other Government of Bangladesh institution and in addressing any issues raised/ clarifications sought or revisions in the feasibility report required by the CCEA or any other Governmental entity prior to approving the project for implementation under the PPP Act.

***The feasibility study report shall be prepared in accordance with the scope as detailed above including the requirements of the Planning Commission of Bangladesh.*

Component 2: Market Sounding

In this component the consultants would engage in detailed consultation with potential private sector entities interested in this project.

Objectives

The main objective of market sounding is to test private sector's ability to assume risks that are to be transferred via the PPP contract from BEZA to the private sector. The objectives of the market sounding are to:

- Generate interest in the Project, and encourage new, private sector parties to come forward with their ideas.
- Understand the expectations, maturity and readiness of potential market participants in the project, and the factors affecting their level of interest.
- Test the market's appetite to share the risk of development and the size, scale and scope of the market for potential participation.
- Receive market views and feedback on how the potential development of the project could best be undertaken.
- Understand the merits of different development and procurement routes, to inform the next stages of project development

Market sounding would focus on the private sector as a whole, rather than on any individual company. The Consultant, together with BEZA, will conduct a Market Sounding exercise with existing and potential promoters,

funders, financiers, developers, advisors, construction contractors and other industry participants to assess market interest in the Project at BSMSN. It includes no element of evaluation, and there is no commitment of any kind involved.

The Consultant should conduct at least one offline market sounding workshop in Dhaka, inviting as many potential members of the target audience as possible, in association with BEZA and engage intensively to get a good understanding of the attractiveness and challenges with the project and proposed project structure. The Consultant should build in the costs for conduct of such a 2-3 hour workshop, including costs for venue, catering, etc., in Dhaka, into its financial proposal.

The other interactions as part of the market sounding exercise could be undertaken on a one-on-one or group basis, virtually or physically, by the Consultant.

Process

To provide respondents with some relevant background, the Advisor will also produce a **Market Sounding Briefing for DESAL Project (the 'Briefing Document')**. This Briefing Document would include a brief description of the DESAL Project, including its sub-projects, the total estimated capacity of the project, the estimated size of the investment, the broad contours of the PPP model, the role of BEZA as a Contracting Authority, and other key aspects of the project as deemed appropriate.

The consultations should be undertaken by a mix of using a free-flowing discussion as well as a discussion based on a broad guideline, covering specific areas, agreed on with BEZA, prior to the start of the Market Sounding interaction. The areas of discussion may be structured under the following topics, amongst others:

a. interest in and demand for the project
b. the readiness, maturity and capability of the market
c. structuring the development process
d. barriers and enablers to sharing risk of development

5. Expected Time Schedule

The total duration of consulting services is expected to be 09 months (6 months for drafting and finalizing of the feasibility study and proposed structure; 3 months for approval of the feasibility report by PPP Authority, CCEA and any other Government of Bangladesh institution).

6. Expertise Required

The required key experts for this work is given below:

Key Experts and indicative Expected Person-Months (PM)

SN	Position	No	MM	Total
I	Team leader/ PPP Expert	1	06	06
2	Desalination Engineering / technical expert	1	05	05
3	PPP/project financing expert	1	02	02
4	Legal expert	1	03	03
5	Environmental Specialist	1	03	03
6	Hydraulic & Water Modelling Expert	1	03	03
7	Chemical Engineer	1	02	02
8	Civil Engineer	1	02	02
9	Economic Expert	1	03	03
Total		8	29	29

Note that at least 2 of the 4 Key Experts namely Team Leader, Desalination/engineering expert, PPP/ Project Financing Expert, Chemical Engineer must have direct working experience with the Firms having experience of the same assignment.

Note: The above are purely estimates of the number of person months of engagement likely to be required for each position and are not definitive. Consultants should base their proposals based on their own estimates of person months of involvement required for each Position to deliver on the scope of work outlined above.

7. Qualification and Experiences

The following tables provide minimum qualification for educational background and professional experiences.

Code	Position	Qualification	Experience
K-1	Team leader /PPP Expert	Master's degree in business administration/ Chartered Accountant / CFA or similar with a Bachelor degree in engineering would be preferred.	➢ Minimum 20 years experience of developing and undertaking similar assignments of infrastructure PPP Projects , with experience of leading consulting teams in at least 3 similar assignments; ➢ Minimum specific consulting experience of working on at least 2 Desalination projects ➢ At least 10 years experience of working on infrastructure consulting and /or similar experience in Bangladesh and / or other South Asian countries would be preferable
K-2	Desalination Engineering / Technical Expert	Minimum Masters of Science in Environmental/Chemical/ Mechanical/Electrical Engineering, or any other relevant field.	➢ Minimum 10 years experience in developing, designing, structuring and implementation in the area of water treatment projects, preferably in South Asia; ➢ Experience of designing and working on detailed feasibility assessment of at least one Desalination project, preferably in South Asia;

			➢ Minimum 05 yearsspecific experience in planning, designing, and costing DESAL plant facilities and preparing Key Performance Indicators (KPIs) and output specifications.
K-3	PPP/project financing expert	Master's degree in finance/business administration/ Chartered Accountant / CFA or similar	➢ Minimum 10 years experience of developing, and working on detailed feasibility assessment assignments of infrastructure PPP Projects, with experience of developing financial models for at least 3 similar assignments ➢ Experience of working on detailed feasibility assessments and PPP structure development of at least two water treatment plant projects, preferably Desalination projects, in South Asia
K-4	Legal expert	Minimum Master's Degree in Law (L.L.M)	➢ Minimum 10 years experience of working on infrastructure sector PPP agreements. ➢ Experience of working on at least one water treatment plant projects, preferably Desalination project, in South Asia

K-5	Environmental Specialist	Master's and Bachelor degree in Environmental Engineering/Science/Management/Studies or Similar.	➢ Minimum 10 years experience of working on environmental aspects of infrastructure projects, preferably Water Treatment Plant projects ➢ Experience of working in at least one World Bank or other Multilateral financed infrastructure project, in a similar position, preferably in South Asia.
K-6	Hydraulic and Water Modelling Expert	Bachelor Degree in civil/chemical/environmental engineering, environmental sciences, water resource management, hydro engineering irrigation, natural resources management or similar. Advanced degree in environmental or water modeling is preferred.	➢ Minimum 10 years experience of working on water management and related development projects, preferably Water Treatment Plant projects; ➢ Minimum 5 years specific experience in hydraulic modelling of water supply system and urban utilities, hydrological or water quality modeling with supporting water sector reforms, institutional and legal context in South Asia. ➢ Experience of working in at least one World Bank or other Multilateral financed infrastructure project, in a similar position, preferably in South Asia.
K-7	Procurement Consultant	Master's degree in business administration/procurement/or Bachelors degree in engineering with an advanced academic/professional qualification in procurement and supply chain management (e.g.) MCIPS,CPSM)	➢ Minimum 10 years experience of procurement of private sector partner in PPP projects ➢ Experience of procurement of at least one Water Treatment Plant PPP project, preferably in South Asia; ➢ Experience of working on at least one World Bank or other Multilateral financed

			infrastructure project, in a similar position.
K-8	Chemical Engineer	B.Sc degree in Chemical Engineering or any other relevant field.	➢ Minimum 10 years general experience in the similar position for water treatment plant projects; ➢ Minimum 5 years specific experience in designing, build and implementation of desalination plant projects.
K-9	Civil Engineer	B.Sc degree in Civil Engineering or any other relevant field.	➢ Minimum 10 years general experience in the similar position for water treatment plant projects; ➢ Minimum 5 years specific experience in designing, build and implementation of desalination plant projects.
K-10	Economic Expert	Minimum of Master degree in economics or any relevant field.	➢ Minimum 10 years general experience in economic and financial analyses, evaluation of different project options and developing econometric models to assess economic viability of projects, preferably water supply / water treatment plant projects in South Asia ➢ Experience of working on at least one World Bank or other Multilateral financed infrastructure project, in a similar position.

***N.B**: In addition to the above experts, consulting firm may hire adequate number of quantitate and qualitative researchers, experts and supporting staffs to collect and analyze the data as deemed necessary as per requirements of the project deliverables which maybe indicated during RFP stage.*

8. Deliverables and Tentative Time Schedule for Deliverables

Deliverable No.	Payment Schedule	Deliverables / milestones	Timeline (from signing the contract)
Deliverable – 1	1st Payment (10%)	**Inception report with initial presentation for component 1(a):** including detailed work plan, methodology, surveying tools, stakeholder mapping and resourcing proposed to undertake the study and identification of key risk items, feedback from the field visit for the project along with approval from BEZA and world bank.	Within 1 month
Deliverable - 2	2nd Payment (20%)	Final Report on component 1 (a) incorporating BEZA and World Bank comments followed by their final approval.	Within 2 month
Deliverable - 3	3rd Payment (10%)	**Presentation and interim report for component 1(b)-**	Within 3 month
Deliverable - 4	4th Payment (10%)	**Final report of Component 1 (b),** including incorporating all observations and comments from BEZA and World Bank on the Interim Report **along with presentation** to BEZA	Within 4 months
Deliverable - 5	5th Payment (20%)	**Draft Final Feasibility Report** with presentation and workshop on the Feasibility Study as per requirements of the ToR.	Within 6 months
Deliverable – 6	6th Payment (10%)	Market Sounding Report based on Stakeholder Mapping, Consultations, workshop and presentation of the same with prior approval from BEZA and the World Bank.	Within 08 months

Deliverable No.	Payment Schedule	Deliverables / milestones	Timeline (from signing the contract)
Deliverable – 7	7 th Payment (20%)	**Final Feasibility Report:** Comprehensive Feasibility Report Prepared, incorporating BEZA and World Bank comments and Bankable PPP Project Structured and incorporating all learnings from Market Sounding.	Within 9 months

***10(Ten) copies of each report has to be submitted along with a soft copy. All submissions must be accompanied by a Multi-Media presentation to BEZA officials atBEZA conference room.*

9. BEZA's Input and Counterpart Personnel Services, facilities, and property to be made available to the Consultant by BEZA are as follows:

(i) introduce the Consultant to relevant Government of Bangladesh stakeholders in the collection of pertinent information on project sites;

(ii) provide access to the project site and furnish information related to land area, etc. of the project site and access to prior water availability and sources related reports, if any;

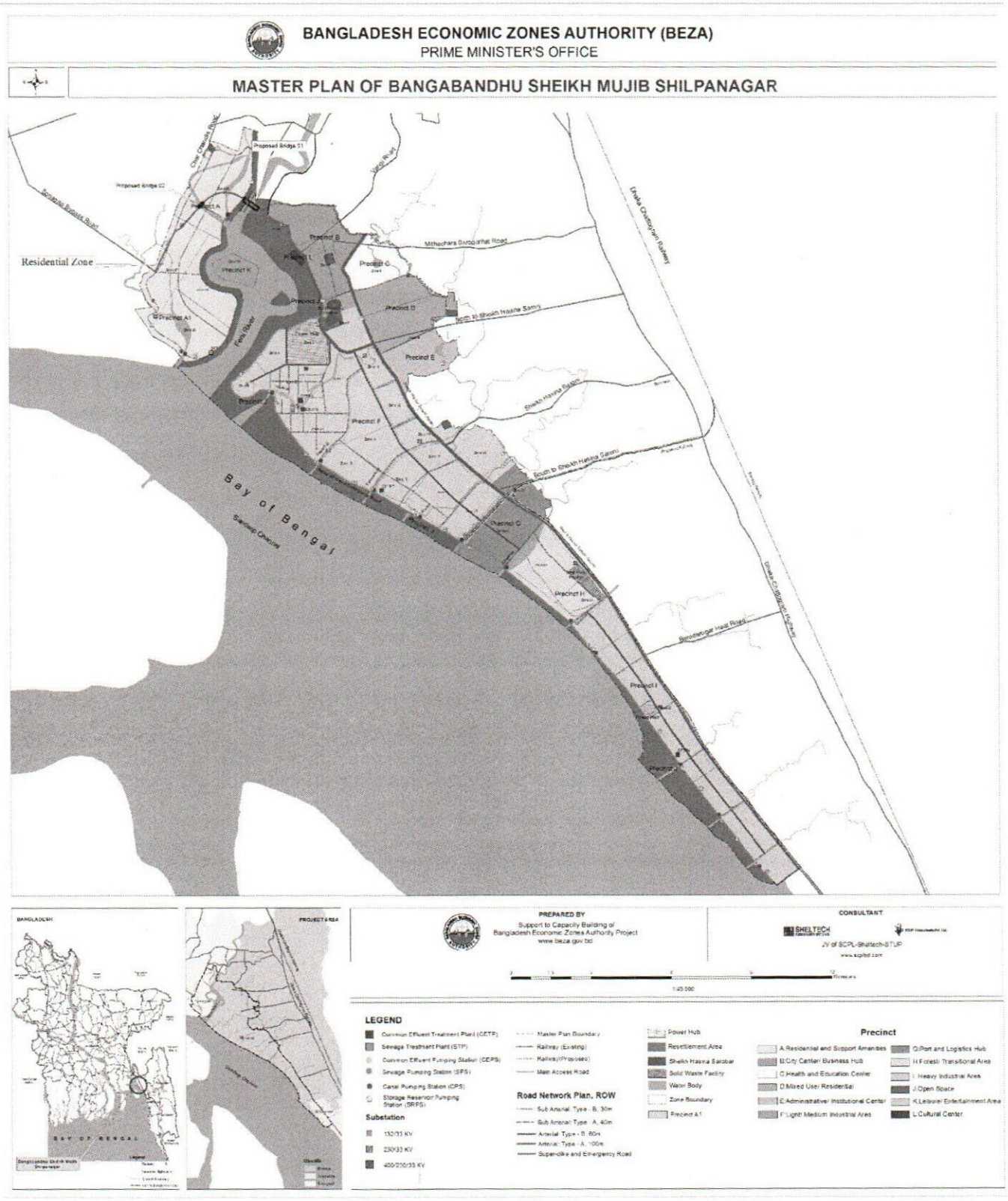
(iii) usage of the conference room for stakeholders' meetings/workshop;

(iv) furnish information on industrial units that have been allotted land to establish manufacturing facilities in BSMSN and make introductions to some of these companies, if required and

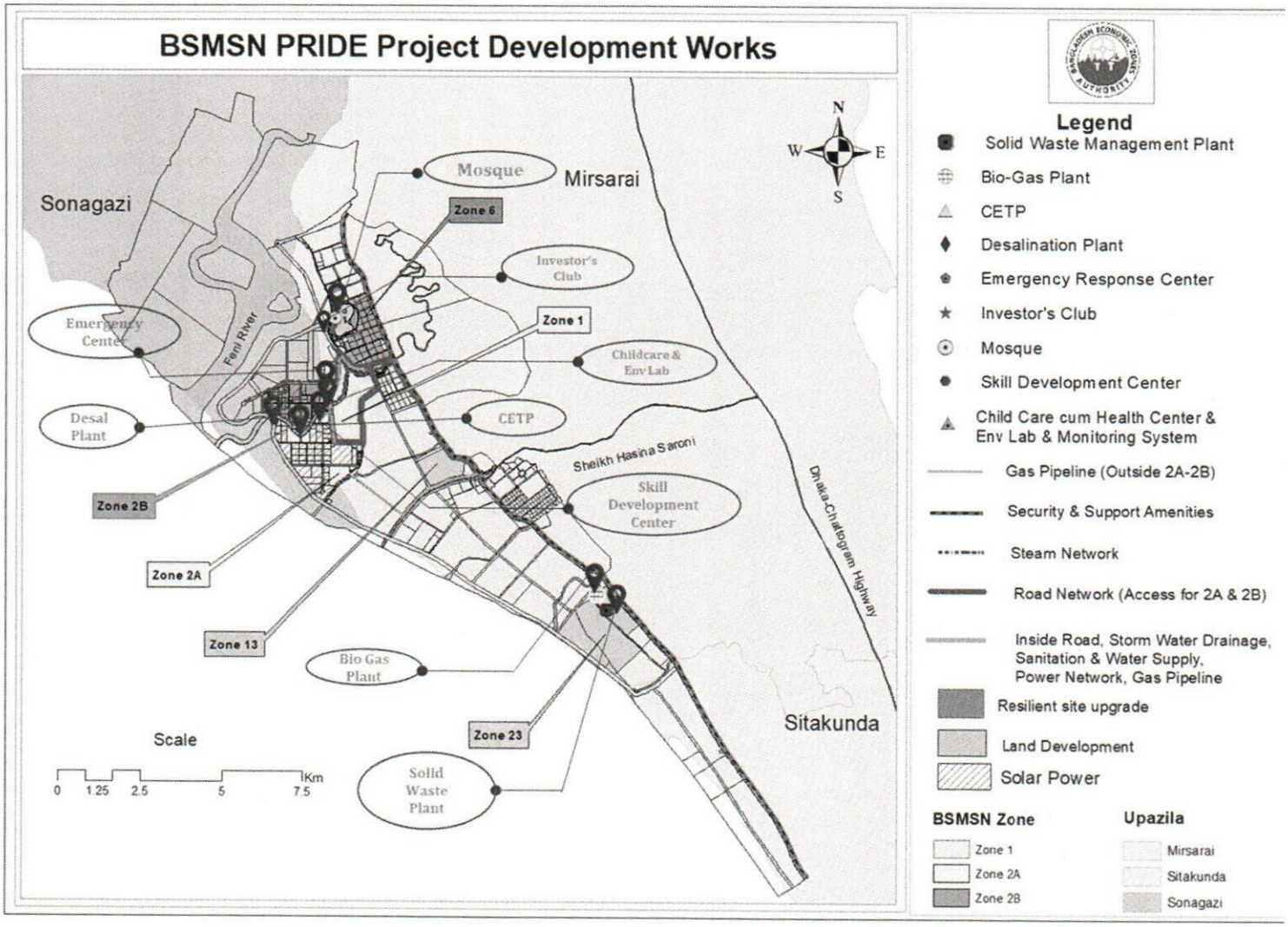
(v) try and support the Consultant with information on any other aspects related to the economic zone and introductions to other appropriate Government agencies

BEZA will nominate a senior resource as a single point of contact for the Consultant and will also nominate a core team who will be responsible to interact with the Consultant on a regular basis and be the first point of evaluation / assessment of all Consultant's outputs.

ANNEXURE 01: Masterplan of BSMSN



Annexure 2


BSMSN PRIDE Project Development Works
Sonagazi
Mirsarai
Sitakunda
Mosque
Zone 6
Investor's Club
Zone 1
Childcare & Env Lab
Emergency Center
Feni River
Desal Plant
CETP
Sheikh Hasina Saroni
Skill Development Center
Dhaka-Chattogram Highway
Zone 2B
Zone 2A
Zone 13
Bio Gas Plant
Zone 23
Solid Waste Plant
Scale
0 1.25 2.5 5 7.5 Km
N
W
E
S
Legend
Solid Waste Management Plant
Bio-Gas Plant
CETP
Desalination Plant
Emergency Response Center
Investor's Club
Mosque
Skill Development Center
Child Care cum Health Center & Env Lab & Monitoring System
Gas Pipeline (Outside 2A-2B)
Security & Support Amenities
Steam Network
Road Network (Access for 2A & 2B)
Inside Road, Storm Water Drainage, Sanitation & Water Supply, Power Network, Gas Pipeline
Resilient site upgrade
Land Development
Solar Power
BSMSN Zone
Zone 1
Zone 2A
Zone 2B
Upazila
Mirsarai
Sitakunda
Sonagazi