

# **SANGAR HOUSING PROJECT GWADAR**

## **TERMS OF REFERENCE**

### **TECHNICAL & FINANCIAL PROPOSALS ON BOT BASIS**

#### **FOR COMPLETION OF REMAINING WORKS AND OPERATION & MAINTENANCE OF 2 X 100,000 IGPD DESALINATION PLANT**

**October, 2020**

**DEPUTY COMMISSIONER /  
PROJECT DIRECTOR  
SANGAR HOUSING PROJECT,  
PROJECT OFFICE, KOH-E-BATAIL, GWADAR  
TEL: (0864) 210027    FAX: (0864) 211362**

# **TERMS OF REFERENCE**

## **BOT CONTRACT FOR ALL REMAINING WORKS OF 2 X 100,000 IGPD DESALINATION PLANT AND OPERATION & MAINTENANCE OF PROJECT FOR SPECIFIED PERIOD OF TIME.**

### **BACKGROUND**

The Seawater Desalination Plant at Sangar Housing Project, Gwadar is a project which remains incomplete and the employer will now get the remaining works completed as per contract. The remaining works will now be completed by the appointing Operator / Contractors Company as BOT Contractor for remaining construction and operation & maintenance of stated plant for the specified period.

A BOT arrangement gives a contractor the long term right to use all the assets conferred on the contractor, including responsibility for operations and investments. Asset ownership remains with the authority. Assets be reverted back to the authority at the end of the BOT contract period, including assets purchased by the contractor. Any replacement, additions or alterations needed during the entire term will be the responsibility of BOT Contractor.

The invited BOT operator / contractor should submit their Technical and Financial Proposals of remaining works and all related work as is where is basis. The BOT contractor / operator will act as contractor as well operator for the stated BOT contractor / operator agreement.

### **SCOPE OF WORK**

The selected BOT operator / contractor will be responsible for completion of in-complete works of desalination plant and in all aspects. Contractor will also be responsible for operation and maintenance of same for a specified period of time (25 years maximum). The proposed work with selected BOT operator / contractor will be carried on stated plant includes servicing, installation, satisfactory testing, replacements, construction, commissioning, maintenance, operation and any other work that may be needed for successful operation as well as uninterrupted water supply and running of the plant. They are also allowed to generate revenue from the outcome of the stated plant on shared formula basis as per agreement.

Interested BOT operator / contractor must inspect the stated plant at site in detail before submission of their technical and financial proposals. It is a BOT contract where the employer will not pay any amount of costs that may incur during or after execution; which shall be borne by the BOT operator / contractor. The BOT operator / contractor in their financial proposal should submit their offer to employer the share of profit in shape of free of cost quantity of water offered to employer and balance quantity which they will sell in market. The BOT operator / contractor will be responsible for Operation and maintenance of project. They must describe the methodology and understanding in their technical proposal. The technical proposal shall also include detail program and strategies to operate & maintain the stated project. It shall also explain strategies for making it a profitable venture.

A separate priced BOQ must also be furnished by the BOT operator / contractor for ease of understanding and confirming the time limit of the contract. However this BOQ can at no cost to client be extended to any other items if needed for the success operation and maintenance of the project. The water produced shall be as per international standards

The BOT agreement will be made for a period of 25 years. BOT operator / contractor shall be responsible for all direct and indirect expenses as may be needed for start and running of plant.

The successful contractor will submit detail design of all balance components for approval of consultant. The design of intake system needs to be properly done and executed.

The entire work required to be done by BOT contractor / operator includes supply, construction, execution, installation, testing, commissioning and operation & maintenance for minimum 25 year. The project will be handed over on as is where is basis and entire cost needed for the successful operations and running of this project shall be the responsibility of contractor/sponsor. There are 2 No's plants of 100,000 IGPD Desalination plants which are complete in all respects and the anticipated work will include but not limited to consideration as follows:

### **1. Water Intake Design**

- To carry out detail survey for design and construction of intake system for desalination plant and separate design of intake system should be submit to consultant for approval.
- Piping material and their accessories used in intake system should have ability to allow wear and tear and must have low head loss.
- The brine water disposal system including screening system should be design according to the environmental standard and discharge in safe disposal without any effect the aquatic life.
- Clearance of falling rock debris to strengthen the sea retaining wall and the intake structure.
- To carry out horizontal drilling in the absence of pond pipe connecting the sea. If not possible then a new intake system next to the retaining wall with intake at the bed of the sea, anchored properly, should be placed with floating submersible pumps and carry out its procurement.

### **2. Raw Water Storage Tank**

- Inspect the physical condition of the tank and their capacity, whereas require may repair or renew according to design criteria.
- Ipect properly disinfection unit and make it able to run properly, whereas required may replace the necessary component of the unit.
- Inspect that the sodium hypochlorite dosing pump and their dosing system (capacity) is properly working according to the design and makes it able to run properly.

### **3. Pre-Filtration System**

- Detailed inspect the sand Filter capacity, pressure and their construction material are used accordingly and make it able to run properly without any avoiding the quality of water and performance of plant.
- Inspect the coagulation dosing unit, mixing unit, pipes, piping networking are in functional position and make it in running condition.
- Inspect the chemical storage tank capacity, working capacity, their physical condition and make it useful for processing.

### **4. Filter Media**

- Inspect and repair/replace the sand if necessary without any affect the performance of the unit, also analyses the capacity, filtration rate, construction material, control system, piping network, piping material are used accordingly.
- Repair and maintain the other accessories of the filter media, whereas necessary.

### **5. Chemical Storage Tank**

- Inspect and make it able to run the chemical dosing system according to their function, where is necessary may repair any nonfunctional part of the tank.
- Examine working capacity, power capacity of electromagnetic dosing pump and make it able to run properly.
- Examine the proper ventilation system are accessible into the chemical storage area to avoid any suffocation or risk.

### **6. Cartage Filter**

- Procure, install and examine the material used in filter are according to the design recommendation and properly adjusted the plant as per their function, also inspect the pressure gauges are in working condition where it necessary may repair/replace according to their function.
- Examine and repair the anti-scale dosing unit and make it able to run properly.
- Replacement of Temperature Control gauges, Stainless Steel Piping resistant to High Pressure for Module feeding Lines and Thin Film Composite Polyamide Membranes where ever required.

### **7. Reverse Osmosis (RO) Unit**

#### **i. High pressure Pump**

- Examine & test the working condition and their performance where it is necessary may repair, alter/replace and make it into operation.

#### **ii. Pressure Switches & Pressure Gauge**

- Examine and repair or replace pressure switch and make it in fully operation.

**iii. Membranes**

- Examine and test the membranes life and bring it in operation according to the requirements. The costs must include its replacements if needed.
- Examine the physical condition and piping network of the existing condition, where ever necessary may alter the piping network to run properly.

**iv. Electronic pressure switch and conductivity Meter:**

- Examine and test the pressure switches where it is necessary may alter/replace the fixtures without any further damage.
- Where ever it is required may calibrate the required components of the unit.

**8. Energy Recovery System**

- Examine the capacity, such as pressure bar, power capacity of the existing booster pumps and also to analyses other accessories which are the sub components of the pump are in working condition, if it is not so, make it functional and where as necessary may acquire the missing items. Proper pumping system to be installed for the supply to the water tanks.

**9. Cleaning and Flushing Unit**

- Procure, examine and test the accessories such as pumps, cartages life, fittings and piping network and material are according to the working capacity, if necessary, may alter/replace the damaged fragment of the unit.

**10. Electrical Control Panels**

- Purchase of different invertors and installation of Main DB, LT Panel, Breakers, Change Overs, Para Feeder
- Examine and test the load capacity of each components used in the Electric panel such as breaker, circuits and inverter. Whereas required may calibrate or replace the necessary components from the electric panel and protect them from the moisture and rust.
- Examine the quality of cables are able to bear the load capacity, and the physical condition are in position to avoid any short circuit or any risk.

**11. Civil Work**

- All other facilities such as boundary wall, additional storage tanks, pumping stations, civil works including project office, stores etc., as per required standard. The design need to vet as approval by the consultant.
- All rooms associated with the plant should be provided with proper ventilation by installing the windows and whereas necessary install air conditioning system.
- All designs prepared must be submitted to consultants for approval.

## 12. O & M

- During and after execution the required manpower must be appointed that would be responsible for monitoring and resolving the problems associated with execution and operation of the plant.
- Prepare standard operating procedures (SOPs) for maintenance of each section to run the plant successful for long period of time.

### **KEY FEATURES FOR BOT OPERATOR / CONTRACTOR**

- The BOT operator / contractor responsibility not only for operation and maintenance of the assets but also for financing and managing all required investment.
- The BOT operator / contractor takes risk for the condition of the assets and for investment.
- The BOT operator / contractor may be responsible in relation to existing assets, an existing utility, or for extensive rehabilitation and extension of an existing asset.
- The BOT arrangement is typically for a period of 25 years.
- The BOT contract will give on Water Sharing formula.

Proposed formula;

- Client to be given free of cost 50% of the output per unit
- Operator to sell 50% in market.
- Asset ownership typically rests with the awarding authority and all rights in respect to those assets revert to the awarding authority at the end of the BOT agreement.
- General public is usually the customer and main source of revenue for the BOT contractor/operator.
- Unlike many management contracts, BOT operator / contractor are focused on outputs - i.e., the delivery of a service in accordance with performance standards. There is less focus on inputs - i.e., the contractor is left to determine how to achieve agreed performance standards, although there may be some requirements regarding frequency of asset renewal and consultation with the awarding authority or regulator on such key features as maintenance and renewal of assets, increase in capacity and asset replacement towards the end of the BOT term.
- Some infrastructure services are deemed to be essential, and some are monopolies. Limits will probably be placed on the BOT operator / contractor – by law, through the contract or through regulation – on tariff levels on mutually agreed terms. The BOT operator / contractor will need to give assurances that it will be able to finance its obligations in the project.

## **SUBMISSION OF PROPOSAL**

The following documents also be submitted with the proposal.

- General
- General Experience.
- Relevant Experience.
- Personnel Capabilities.
- Operational Capabilities
- Financial Position & Capabilities

The Technical and Financial proposal be submitted as per TOR.

The financial proposal must include execution and completion of all works; includes examine, design, testing, execution, servicing, replacements, construction, supplies, maintenance, operation and all other costs that may be anticipated for successful completion and commissioning of project.

The proposal must also include considerations for the operation and maintenance.

The employer will need the plant to be operative in complete working condition and as per the international standards. The financial and technical proposal should be comprising of the following statements.

- Details of technical work need to be carried out before its operation & its estimated cost.
- Operational & maintenance plan & its expected cost.
- Business proposals for the client based upon projected financial statements and expected attractive offers to client / BOT operator / contractor as water sharing formula for 25 Years.

Last date for submission of Proposals: **Fourteen (14) days from date of publication in daily newspapers.**

The Employer has rights to accept or cancel all or any proposals. The letter of award will be given to the selected firm and which will be followed by signing of agreement.

## **PREREQUISIT TO SUBMISSION OF PROPOSAL**

- Time for completion of all works for UNIT#: 1= 4 months
- Time for completion of all works for UNIT#: 2 = 4 months
- Bid security amount = Rs. 1.00 million
- Performance bond = Rs. 5.00 million

## **Other facilities:**

Client shall lease the premises on which plant is built to the operators / Contractor for 25 years  
Client will also allow 20% or as mutually agreed water for bottling from year 1 to Year 5. The plant can be installed at site with no cost to the client.

Terms and conditions can be mutually modified if needed for the success of this project.

## **COMPLETION TIME FOR REMAINING WORKS**

**UNIT #: 1     1 X 100,000 during 4 months of award of work**

**UNIT #: 2     2 X 100,000 to start after 3 months of successful operation of Unit #: 1 & to be completion of 4 months after start of work as per instructions of client**

**The proposal shall we evaluated as bow:**

### **1. Technical Proposal: 70 Marks**

- **Company background: 5 Marks**
- **Methodology and Understanding: 20 Marks.**
- **Related experience of firm with details of maximum 5 projects: 20 Marks**
- **Company registration Certificate and Income Tax Registration: 5 Marks**
- **Annual accounts for last three years: 5 Marks.**
- **List of staff to be deputed for the project with experience: 5 Marks.**
- **Detail program and schedule of works: 5 Marks**

### **2. Financial Proposal: 30 Marks**

- **Sharing of water offered to Client: 10 Marks**
- **Rates on which client will purchase in case of additional water needed: 10 Marks.**
- **Rates on which it will be sold in public: 10 Marks**

## **Note:**

- **Maximum water quantity offered to client**
- **Lowest rates for which client will buy additional water if needed for use of residents and in project area.**
- **Lowest rate for which water will be sold in market will get full marks.**