

**THE ISLAMIC REPUBLIC OF PAKISTAN**

**DETAILED DESIGN STUDY**

**ON**

**WEST WHARF**

**THERMAL POWER PLANT PROJECT**

**FINAL REPORT-II**

**LOT I (VOLUME 1)**

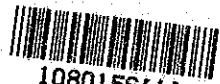
**JANUARY 1990**

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KARACHI ELECTRIC POWER SUPPLY CORPORATION LTD.

WEST WHARF THERMAL POWER STATION UNITS 1 AND 2

LOT I: POWER PLANT FACILITIES

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LOT I VOL 1





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KARACHI ELECTRIC POWER SUPPLY CORPORATION LTD.

WEST WHARF THERMAL POWER STATION UNITS 1 AND 2

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KARACHI ELECTRIC POWER SUPPLY CORPORATION LTD.

WEST WHARF THERMAL POWER STATION UNITS 1 AND 2

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KARACHI ELECTRIC POWER SUPPLY CORPORATION LTD.

WEST WHARF THERMAL POWER STATION UNITS 1 AND 2

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SECTION I

INSTRUCTIONS TO TENDERERS



SECTION I: INSTRUCTIONS TO TENDERERS

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## SECTION I. INSTRUCTIONS TO TENDERERS

### IT.1. INVITATION

#### IT.1.1 INTRODUCTION

The Karachi Electric Supply Corporation Limited, hereafter referred to as KESC or the Owner, invites experienced firms to submit Tenders for design, manufactures, supply, delivery, stores at the site, erection, test, start-up, operation and commissioning, equipment and material for two (2) sets of fuel oil fired steam power generating unit of 200 MW capacity each and its related accessories including civil and architectural works of the West Wharf Thermal Power Station Unit 1 and 2, Karachi, Pakistan.

The Project Site of the said power station is located at the West Wharf area of Karachi Bay near the center of Karachi City.

Karachi is the largest City in Pakistan and important commercial and industrial center. The distance between the project site and center of the City is approximately 10 km.

The Site is now being used for the existing West Wharf Thermal Power Plant, the total site area of which is about 37,000 m<sup>2</sup>. The existing power plant is comprised of Station "A", "B" and "BX". Station "A" has been decommissioned and all equipment and machinery have been dismantled. Only some vacant buildings remain.

The "B" station consist of two (2) turbine generator units and three (3) boilers having a total output of which is 30 MW (15 MW x 2).

This station was retired in 1987.

The "BX" station comprises of two (2) turbine generators and two (2) boilers having a total output of 66 MW (33 MW x 2). This station is still under operation, going to be descommissioned after completion of existing system rearrangement.

The equipment and buildings for the above stations are going to be dismantled by Lot-III contractor except some parts of equipment and buildings in consideration of constructional requirement/progress of main Contractor.

All the Tenderers should keep in mind that due to the narrow site area as mentioned above, special consideration shall be incorporated in design and site construction works to avoid any untoward happenings at the site.

These Instructions to Tenderers are intended to provide guidance in the preparation of Tenders. However, failure to comply with these instructions may render the Tender nonresponsive and liable to be rejected, unless otherwise stated.

The periods named in these Instructions to Tenderers shall be consecutive calendar days, except that, if a due date falls on a local holiday, the due date will be the next working day.

#### IT.1.2 INVITATION FOR TENDERS

The final Tender (see Clause IT.1.3 (3)) will be received via registered mail, or delivered personally by local time on or



before \_\_\_\_\_ to the following address of the Owner:

The Karachi Electric Supply Corporation Ltd.

Aimal House

Abdullah Haroon Road,

P.O. Box No. 7197,

Karachi-3, Pakistan.

Attention: Project Engineer,

West Wharf Thermal Power Station Project

Units 1 and 2

One (1) original and two (2) identical copies of the final Tender shall be delivered by the Tenderer to the Owner. One (1) copy to the Engineer by hand or mail before Tender-opening, at the following address and Tender submitted shall be enclosed in a sealed envelope clearly marked as follows:

SEALED TENDER FOR EQUIPMENT, MATERIAL AND SERVICES 200 MW each  
West Wharf Thermal Power Station Units 1 and 2 for the Karachi  
Electric Supply Corporation Ltd.

NOT TO BE OPENED BEFORE A.M. -----

Package Number \_\_\_\_\_ of \_\_\_\_\_

Submitted by \_\_\_\_\_

Name and Address
of
The Engineer

If a Tender is sent by registered mail, the inner sealed envelope

shall be enclosed in an outer envelope suitable for mailing.

### IT.1.3 AVAILABILITY OF TENDERING DOCUMENTS

#### (1) Purchase of Tendering Documents

A complete package of Tendering Documents for this Contract consisting of three (3) sets of six (6) volumes each, may be obtained from Owner's Office upon payment of US\$1,000.00 or equivalent PAK Rs.

One (1) set or more if required additionally can be obtained upon payment of US\$250.00 or equivalent PAK Rs. for each set.

#### (2) Tender Documents

Each of the set of Tendering Documents will consist of the following volumes:

##### VOLUME 1

- Instruction to Tenderer
- Tender and Appendices

##### Appendices

Form of Tender

Appendix A - Schedule of Prices

Appendix B - Form of Tender Bond

Appendix C - Special Stipulations

Appendix D - Receipt of Addenda

Appendix E - List for Goods Imported from Outside of

Eligible Source Countries

Appendix F - Delivery and Construction Schedule

Appendix G - Departures from or Qualifications to the  
Tender Documents (as required)

Appendix H - Management Procedures

Appendix I - Tenderer's Data Sheets

Appendix J - Mandatory and Recommended Spare Parts

- General Condition of Contract

Exhibits

A Form of Contract Agreement

B Form of Performance Bond

C-1 Undertaking by Contractor for Issuance of  
Provisional Taking Over Certificate

C-2 Provisional Taking Over Certificate

D Affidavit of Contractor

E Certificate of Compliance

F Release of Lien

G Form of Bank Guarantee for Advance Payment

VOLUME 2

Tenderer's Data Sheet (Appendix I)

VOLUME 3

- Technical General Conditions

- Design Standard

VOLUME 4

- General Specification

- Steam Generator and Auxiliary Equipment

- Steam Turbine and Auxiliary Equipment

- Common Auxiliary Equipment
- Generator and Auxiliary Equipment
- Plant Computer System

VOLUME 5

- Architectural, Structural and Civil Works

VOLUME 6

Drawings for Tendering

(3) Tender Requirements

In preparing the Tenders, the Tenderers shall observe the following requirements:

- Tenders shall be prepared on the prescribed Form of Tender, Schedules, Data Sheets, Tenderer's Qualification informations and Tender Bond without any alterations. All entries on the ORIGINAL set shall be typewritten or in clearly legible BLOCK CAPITALS. All entries in the Tender Form Schedules, Data Sheets, Tender's Qualifications and Tender Bond shall be in English language. SI or metric unit system shall be used in the Data Sheets. The ORIGINAL shall be signed by an authorized person in the space provided therefor. The COPIES shall be reproduced from the ORIGINAL.

The final Tender as submitted by the Tenderer to the Owner shall consist of:

(a) One (1) original proposal of the Volumes 1 to 6 each page duly stamped and initialled and two copies of the completed-sheets volumes as described above.

(b) One (1) copy of each item duly completed to the Engineer .

(c) A copy of the Tender Bond or certified cheque attached to each copy of the Tender, alongwith the original.

(d) A copy of power of attorney, if Tender Form is executed by a person other than President, partner or owner of Tenderer's company, attached to copy of Tender, alongwith the original.

In the event of a Tender being submitted by a consortium, one member of the consortium shall be designated as the Coordinator or leader and this member shall be the point of contact for the Owner/Engineer. All members of the Consortium shall duly execute the Contract if the Consortium is the successful Tenderer.

In order to minimize coordination and communication problems during the Tender preparation and evaluation periods, the Tenderer is cautioned to observe the following instructions. Failure to comply may result in rejection of the Tender except stated otherwise.

(a) All Specification Data Sheets must be typed/hand-written for each item called for. If, for the

Tenderer's equipment, a particular item is not applicable or required, the letters NA (not applicable) or NR (not required) shall be typed in the space provided.

- (b) Tenderer must state any deviation from material or other standards specified. In the case American/BS material standards called for in the technical Specifications are required to be filled in by the Tenderer, comparable European, Japanese standards or other national standards may be cited by the Tenderer in filling the technical Specifications Data Sheets. A separate list of proposed standards shall then be attached to the Tender indicating the appropriate standards proposed by the Tenderer, stating in each case the comparable standards specified.
- (c) Any explanation desired by the Tenderer regarding the meaning or interpretation of the Tendering Documents must be requested in writing and addressed to the office of the Owner with copies to Engineer. If any explanation or interpretation is necessary, it will be issued in the form of a numbered Addendum which will formally supplement or revise the Tendering Documents and be issued to all Tenderer's. Any written request must be sent early enough, at least four (4) weeks before Tender due date, to allow sufficient time for the Addendum to reach all Tenderers before submission

of their Tenders. The receipt of every addendum issued during the bidding period must be acknowledged in the space provided in the tender form and also by letter or cable received before the Tender due time. Oral explanations or instructions given during the Tendering period will not be binding.

- (4) Tenderer will be himself responsible for ensuring that his Tender is received in accordance with the instructions stated in. A late Tender will not be considered even if it becomes late as a result of circumstances beyond the Tenderer's control.

#### IT.2. SOURCE OF FUNDS (TENTATIVE)

The financing source for this project has not been decided yet. Therefore, this clause will be finalized after a favorable funding arrangement has been settled.

This clause will be incorporated, together with the necessary instructions for applying the fund for the project, by considering relevant regulations and instructions based upon the particulars related to the funding agency.

**IT.2. SOURCE OF FUNDS (TENTATIVE)**

(To be filled in at a later date)



**IT.2. SOURCE OF FUNDS (TENTATIVE)**

(To be filled in at a later date)

(End of clause)

**IT.3. QUALIFICATION OF TENDERERS**

- (1) Tenders are only invited from firms (individual) or joint-venture) who are prepared to submit complete and comprehensive tenders for the whole of the supply, erection and other works included in these documents. Tenderers must have previously successfully completed contracts of similar magnitude and complexity.

Tenderers must also prove and provide evidence to the fact that they have adequate administration, technical and site staff to complete the project by the required dates in accordance with the Tender Documents. Documentary evidence of tenderers experience on previous similar contracts must accompany the Tender.

Tenderers shall also submit proof of their financial capacity to undertake the contract.

- (2) Tenderer shall be a firm of international repute, designated in the eligible source countries, and having experience of exporting three (3) or more steam power plant of 200 MW capacity each or above.
- (3) Manufacturers shall have recognized experience in the execution of projects of similar characteristics to the work specified and the plant in the project shall have been put in successful and continuous operation for at least five (5) years in the tropical zone countries in order to demonstrate thoroughly their dependability and suitability for this type of power plant.

Steam turbine and generator manufacturers shall have an experience of manufacturing of five (5) or more 200 MW and bigger capacity units with similar and above steam conditions.

Steam generator manufacturers shall have an experience of manufacturing of five (5) or more drum type boilers of 200 MW

or more capacity having similar and above steam condition.

The civil contractor shall have experience in the execution of civil/architectural works of thermal power plant (main powerhouse, concrete stack, circulating water system) of one (1) or more projects of 200 MW or larger capacity units, and shall have more than ten (10) years experience in the construction field.

Also, the civil contractor shall have experience in the execution of cofferdam at sea shore and experience in excavation with retaining wall (depth : GL-10 m or more) adjacent to an existing structure/building.

The civil designer shall have experience in the execution of civil/architectural works of thermal power plant (main powerhouse, concrete stack, circulating water system) of three (3) or more projects of 200 MW or larger capacity units, and shall have more than ten (10) years experience in the design field.

All equipment and materials shall be manufactured by companies which have at least ten (10) years previous experience in the design and manufacture of equipment and/or material of comparative type or more capacity and operating conditions, unless specified otherwise in the Technical Specification.

- (4) As the site area is limited no deviation of site plan is possible, that is, the main building, the boiler area and

other auxiliary buildings etc., shall be kept in the dimension as shown in the Owner's Drawings.

Matching of the size of equipment and other facilities shall be strictly in accordance with the site plan, which is prime importance and attention for each Tenderer.

- (5) Any tender not complying with the above items (1), (2) and (3) shall be rejected and not evaluated.
  
- (6) The Tenderer shall furnish the following information to substantiate conformance to the above qualifications for general and technical experience:
  - (i) Experience list of Tenderer for exporting steam power plant.
  
  - (ii) Experience list of boiler, turbine, generator and civil work respectively including;
    - (a) Name of Owner
    - (b) Plant Location
    - (c) Type of Unit or Equipment
    - (d) Capacity
    - (e) Date of putting into Commercial Operation
    - (f) Operation Period Recorded
    - (g) Availability and Plant Efficiency Records

Note: The following two (2) figures corresponding to the two (2) years period after entering commercial operation shall be submitted.

$$i) \text{ Availability Rate (AR)} = \frac{SH}{PH}$$

$$= \frac{PH - (POH+MOH+FOH)}{PH} \times 100 (\%)$$

where; PH = periodic hours

SH = service hours

POH = planned outage hours

MOH = maintenance outage hours

FOH = forced outage hours

ii) Plant Heat Rate

$$\text{Net Plant Heat Rate} = \frac{FQ \times q + Gmu \times hmu}{kW_1 - kW_2} \text{ kcal/kwh}$$

where; FQ : Fuel oil consumption ( )

q : Fuel oil heating value (H.H.V) kcal/ )

Gmu: Make up water quantity (kg)

h : Make up water enthalpy (kcal/kg)

kW<sub>1</sub>: Generator output (kWh)

kW<sub>2</sub>: Plant auxiliary power (kWh)

(iii) User's certification for above item (i) and (ii)

- (7) Logical construction sequence to meet such narrow site to avoid congestion of the site works shall be submitted.
- (8) The Tenderer/manufacturer erector and civil contractor shall submit satisfactory evidence with the proposal that they have adequate facilities for research, development and testing of the offered equipment, and shall demonstrate his design resources, experience and ability necessary to attain the

reliability and performance as specified.

The Tenderer/manufacturer of major equipment who manufactures such equipment under the license shall identify his licensor from which the offered equipment are originated, and shall have manufacturing experience of three (3) sets or more of each equipment by themselves.

The Tenderer/manufacturer shall have a valid license agreement with internationally recognized licensor for atleast last five (5) years for the offered equipment.

- (9) The designer/manufacturer/erector/civil contractor being a consortium/joint venture shall arrange its internal agreement to execute the work. Such evidence shall be submitted with the Tender.
- (10) The Tenderer/manufacturer shall have a "Quality Assurance" organization and programme to ensure that appropriate standards of equipment reliability are attained.
- Such organization and programme shall be submitted with the Tenders.
- (11) The Tenderer/manufacturer of steam generator and turbine-generator shall have an organization and financial standing commensurate with the execution of its full scope of the works. Company organization chart and financial reports shall be submitted for each company.
- (12) If any portion of the Works or equipment is to be supplied or

imported from the countries other than Tenderer's/manufacturer's country, the Tenderer/manufacturer shall submit with his Tender the list of such equipment or parts, country of origin and their price included in his Tender.

(13) The Tenderer, shall be able to provide, technical services in Pakistan for supervisors and servicemen required by the specifications and the supporting documents in this regard be included in the Tender.

(14) The above stated requirement are a minimum and the Owner reserves the right to request the submittal of additional information (if required).

(15) The Owner reserves the right to reject the Proposal of any Tenderer without assigning any reasons.

(16) The Tenderer/manufacturer shall not provide equipment/ material and other facilities which have some outstanding claims from some other clients.

(17) All qualification and information asked for shall be completed and forwarded with the Tender.

#### IT.4. ALTERNATIVE TENDERS

##### IT.4.1 ALTERNATIVE TENDERS

Each Tenderer must submit a Tender (called "Base Tender") exactly in accordance with the Tender Documents. At the Tenderer's option, alternative Tender(s) may be submitted for equipment which will

give the same or better guaranteed performance than the equipment specified in the Base Tender, at the same or reduced costs.

If the Tenderer elects to submit alternative Tender(s), complete information shall be given on such alternative equipment including all technical specification data sheets and tender forms in the pricing section duly completed.

Alternative Tender(s) will probably have auxiliary requirements differing from the Base Tender. However, in selecting auxiliaries for alternative Tender(s), design margins shall not be less than those specified for the Base Tender.

#### IT.4.2 DETAILS OF OFFER AND DEPARTURES FROM THE SPECIFICATIONS

If the Tenderer wishes to vary or amend parts of the Specification as an alternative, he shall complete the corresponding Schedule of "Appendix G - Departures from or Qualifications to the Tender Documents" Associated with Alternative Tender" - as provided herein and he must refer to the Part, Clause and Section of the Specifications which the Tender proposes to vary or amend. In such case the Tenderer shall provide a statement of his reasons for proposing such alternatives, modifications or qualifications.

Notwithstanding any description, drawings, or illustrations which may be submitted with the Tender, only those departures or variations as listed will be considered and apart from these it will be deemed that the Tenderer complies entirely with the requirements of the Specifications.



IT.5. TENDER BOND

- (a) The Tenderer must accompany his Tender with a Tender Bond (see Exhibit-A) or certified cheque drawn on a bank of international repute payable to the order of the Owner, in an amount equal to two (2) percent of the Tender's firm bid price.
- (b) The Tender Bond or certified cheque will be acceptable in the currency of the country of the Owner or in the currency of the country in which the Tender originates.
- (c) The Tender Bond or certified cheque of all unsuccessful Tenderer will be returned after the issuance of the award of Contract to a successful Tenderer, within 195 days from the Tender opening date.
- (d) Each successful Tenderer shall be required to keep his tender bond or certified cheque valid until he activates his Performance Bond.
- (e) Should a successful Tenderer fails or refuses to execute final Contracts and/or to furnish a Performance Bond satisfactory to the Owner within forty-five (45) days after execution of the Contract the Tenderer will be considered to have abandoned his Tender and the amount of the Tender Bond or certified cheque delivered with the Tender shall thereupon be due and owing to the Owner as liquidated damages and shall be encashed for such failure or refusal. The Owner may thereupon award the Contract

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to any other Tenderer. In addition, the Tenderer will be blacklisted by the Owner. The term "successful Tenderer" shall then be deemed to mean the Tenderer whose Tenderer is thereafter accepted.

- (f) A bond of a foreign bank shall be counter-guaranteed by a Scheduled Bank of Pakistan.
- (g) If alternative Tender(s) are submitted, the Tender Bond must be for the Tender of highest value.
- (h) Awards will be made within 195 days after Tender opening date. However, upon request by the Owner to extend the validity period, Tenderer may extend the validity of the offer without changing of the offered price.
- (i) Should a Tenderer withdraw his Tender or declare it invalid within 195 days after the Tender-opening, the Tenderer will be considered to have abandoned his Tender and the amount of the Tender Bonds or certified cheques delivered with the Tender shall thereupon be due and owing to the Owner as liquidated damages.

#### IT.6. TENDERING PERIOD

The Tendering period will be Four (4) months.

Tenderer are responsible for despatching their Tenders in such time as to allow ample margin for timely delivery personally or by registered mail. No Tender will be received after Tender due date

and time, regardless of the cause of delay. Any Tender modification sent by cable or telex will not be accepted unless written confirmation, executed by the same authorized person as in the original Tender, is received prior to the Tender due time.

#### IT.6.1 TENDER OPENING

All Tenders will be opened publicly by the Owner at the date and time at Karachi address given in Clause IT.1 above. The amounts of each Tender will be read aloud and recorded.

#### IT.7. PRICES

##### IT.7.1 EQUIPMENT/MATERIAL AND TRANSPORTATION

###### (1) Material/Equipment

The Tenderer shall quote firm equipment and material prices on the basis of F.O.B. port of export in column (A) of Schedule of Prices Appendix A such prices shall include the followings:

- (a) Design, manufacture, factory testing, export packing, and all shipping costs incurred in placing the equipment on board the vessel.
- (b) Provision of clear on board bills of lading.
- (c) Responsibility for any loss or damage until the equipment and materials have been placed on board the vessel.
- (d) The cost of export taxes, fees or charges levied on exporting goods in the country of origin.

(e) Certificate of origin, consular invoices (if required) or any other documents issued in the country of shipment.

(2) Marine Transportation

The Tenderer shall quote maximum or ceiling price(s) for marine transportation from port of shipment to the port in Pakistan, in Appendix A, Column (B). Such prices shall include all marine transportation costs for ocean freight, heavy lift charges incurred by the vessel, fees, other charges, etc. including supervision and responsibility for any loss or damage while unloading, storing and trimming all major equipment on board the inland carrier.

It is understood that in the event that marine transportation costs are less than the ceiling prices quoted by the Tenderer, any savings therefrom shall accrue to the Owner. Any marine transportation costs in excess of those quoted shall be borne by the Contractor. Such saving or excess in marine transportation costs shall be on the basis of all equipment and material as a whole and not on the basis of each item.

(3) Inland Transportation

Inland transportation from the Port of Karachi (Pakistan) to the Project storage area. All Plant equipment and materials shall be the responsibility of the Contractor and all charges occurring therefrom including fees and charges for loading unloading, clearing and forwarding expenses shall be borne by the Contractor.

Loading and transportation from the project storage area and unloading at Site, issue of all receiving and damaged reports, storage and subsequent handling of the Plant equipment and materials shall be the responsibility of the Contractor.

(4) Indigenous Equipment and Material

The quoted prices for the local materials should include all costs, including transportation, loading, unloading, overheads and all duties and taxes except reimbursible charges, such as, excise duty, sales taxes and surcharges if any leviable on the finished goods and octroi charges, which shall be reimbursed to the Contractor on the basis of actual costs and submittal of original receipts and documents.

(5) Erection and Commissioning

The Tenderer shall also quote price(s) for installation and commissioning of the Plant equipment and materials at the Project Site. Such prices shall include unloading at site, handling to designated point of site, storage, checking and verifying all shipments received against shipping documents, submission of receiving reports and damage reports (when applicable), handling from site, storage to point of final installation, installation and erection including all construction, inspection, training of Owner, personnel at Site, initial performance tests, and responsibility for operation and maintenance of equipment until acceptance by the Owner. The cost and local transportation of any indigenous

equipment and material and insurance for the transportation shall also be included under this category. All other charges not specifically mentioned herein but necessary for the completion of the Works shall also be included under this category.

(6) Training for Owner's Staff

The Tenderer shall quote the price for training at the manufacturer(s) work. The total cost for all living that is, boarding and lagging, return air ticket and transport expenses of the trainees during the period of training including daily allowance, medical expenses, or medical insurance from time to time shall be covered by the Contractor.

(7) Spare Parts

The Tenderer shall also quote prices for mandatory and recommended spare parts in accordance with the instructions given in Appendix J hereof.

All prices quoted shall be firm during the entire period of execution of Contract and no escalation on any account.

IT.7.2 INSURANCE

The Tenderer shall quote the price(s) for insurance cover from Ex-works to the Site for all equipment and material including erection/commissioning for the Project, and responsibility for all

loss or damages while loading, unloading, storing, and trimming on board or on inland carrier. The insurance cover shall be taken from National Insurance Corporation of Pakistan or a Japanese insurance company, and shall obtain prior approval from the Owner after the Contract signing for use of the Company.

Insurance cover shall be obtained by Contractor for the equipment, material and personnels loss or damages during the erection/ commissioning activities.

### IT.7.3 UNIT RATE FOR CIVIL AND ARCHITECTURAL WORKS

Unit rate of each job item for Civil and Architectural Works in the Schedule of Prices shall include the all necessary costs required to perform and complete the work as listed below, but not limited to the followings.

- (1) Direct cost
  - . Main, subsidiary and consumable materials equipment
  - . Labor cost
  - . Rent and purchase of constructional equipment and instrument including assembling, disassembling and transportation cost of the equipment
  - . Transportation fees and expenses for various materials and equipment including ocean freight
  - . Fuel expenses

- . Royalty
- . Cost of material and labor for temporary work
- (2) Common cost
  - . Cost of material and labor for temporary facilities
  - . Cost of Safety equipment and facility
  - . Rent of area for the material storage, constructional equipment and temporary facilities etc.
  - . Cost of personnel expence related to safety
  - . Expenses of common constructional equipment
- (3) Site administration cost
  - . Site personnel Expense
  - . Welfare expense
  - . Insurance for employee's accident
  - . Other expenses such as communication expense, social expense and others
- (4) General administration cost
  - . Business expenses of the main and branch offices
- (5) Insurance
  - . Legal insurance expense in accordance with the laws
  - . Insurance for property damage under



construction

. Insurance for property damage during shipping

. Other insurances

(6) Tax . All kinds of taxes

#### IT.8. PROGRESS SCHEDULE

Tentative project implementation Schedules are attached in Vol. 6 as part of the Tender Documents. These tentative schedules show the completion dates of the individual stages as desired by the Owner and the estimated delivery and erection times that will be required to meet these completion dates.

The Tenderer shall furnish his implementation schedule(s) showing the times for manufacture, shipment from Warehouse to Site, erection, preliminary testing, initial startup, trial operation and performance testing for the equipment provided in his Tender.

Schedule(s) shall be generally in accordance with the tentative schedules attached hereto, using the same symbols for convenience in making evaluations. Furthermore, the Tender shall show in the implimentation schedule the readiness of electrical, mechanical and civil works, which will give access to interface works to be performed by the Contractor himself or by some other Contractor.

Since power is so urgently needed in Karachi, such schedules will be a major consideration in evaluation of each Tender and the Tenderer shall submit his best guaranteed completion date(s) and

the guaranteed readiness for connection dates.

#### IT.9. PRELIMINARY EXAMINATION OF TENDERS

No Tenderer will be permitted to alter his Tender after it has been opened, but clarifications not changing the substance of the Tender will be accepted. The Owner may ask any Tenderer for clarifications but any change suggested by the Tenderer in the substance of his original Tender will not be accepted.

Tenders will be reviewed to determine their responsiveness to the requirements of the Tendering Documents. A responsive Tender is one which complies with all the terms and conditions of the bidding documents without material modification. A material modification is one which effects the prices, quantity, quality, delivery, installation or commissioning dates of the equipment or materials or which limits in any way the responsibilities, duties or liabilities of the Tenderer or any rights of the Owner as defined in the tendering documents. The Owner may waive off any minor informality in the Tender which does not constitute a material modification.

Only Tenderers fulfilling the requirements of eligibility and offering Tenders substantially responsive to the requirements of the Tendering Documents will be shortlisted in the following manner:

- (1) Eligibility and Qualifications of all Tenderers/Manufacturers will be checked to determine the conformance as specified in

Clause IT.3 hereof.

(2) All eligible Tenders will be examined to determine whether they are substantially responsive to the Tender Documents i.e. whether (i) Tenders have been properly signed (ii) Tender bond and all required guarantees and sureties have been provided, and are valid and in good order (iii) prices quoted are fixed i.e. non-escalable, during the performance of the Contract (iv) the Tenders meet the technical criteria detailed in the Technical Provisions and (v) the Tender are otherwise generally in order.

(3) Guaranteed Performance and Output of the Equipment offered, as indicated by the Tenderer will also be taken into account.

(4) Tender will not be shortlisted if:

(i) it is determined as not conforming with the specified eligibility requirements.

(ii) it is determined as not substantially responsive.

(iii) it indicates Commercial Operation Period more than 12 weeks later than the specified period of the Commercial Operation in the Tendering Documents.

A Tender determined as substantially non-responsive will not subsequently be made responsive by the Tenderer by correction of the non-conformity.

Discrepancies that do not essentially affect the substance of

the Tender, such as arithmetical errors do not normally result in the rejection of the Tender but are clarified with the Tender.

- (5) Alternative Tender if any, will be considered only if they comply with Clause IT.4, Alternative Tender, hereof and, will be examined in the similar manner.

The Owner reserves the right to waive minor irregularities or errors in any Tender, if it appears to the Owner that such irregularities or errors were made inadvertently. Any such irregularities or errors so waived must be corrected in the Tender in which they occur prior to the execution of the Contract which may be awarded thereon.

The Owner may limit the number of shortlisted Tenders to a maximum of (3) for detailed evaluation on the basis of initial evaluated ranking.

#### IT.10. CONTRACT

The Contract when executed, shall be deemed to include the entire Agreement between the parties thereto, and the Contractor shall not claim any modification thereof resulting from any representation or promise made at any time by any officer, agent or employee of the Owner or his representative or by any other person.

The Tenderer shall visit the offices of the Owner/Engineer, if called to do so, for the purpose of discussing and clarifying his Tender so that the Tender-evaluation is completed as soon as

possible. The Tenderer may bring with him other concerned persons to assist him in the discussions.

All expenses in connection with the said visits and discussions shall be borne by the Tenderer.

Date of Award of Contract shall be the date of issuance of Notice of Award. However, the Contract shall become effective on the date of Notification of approval of the Contract by the funding agency.

#### IT.10.1 CONTRACT DOCUMENTS

The Contract shall consist of articles setting forth the basic understanding between Owner and the Contractor and incorporating but not limited to the following:

- (1) Tendering Documents consisting of Instructions to Tenderers, Tender Form as completed and submitted by the Contractor as part of his Tender and accepted by the Owner, General Conditions of Contract, the Technical Specifications with Data Sheets as completed and submitted by the Tenderer as part of his Tender, and the Drawings.
- (2) Implementation schedule(s) giving Contract completion dates and dates for readiness for interface works.
- (3) Where applicable and accepted by the Owner in writing the deviations from the Tendering Documents.

The Contractor's customary Tender and Contractor's contract forms shall not be accepted as a part of the Contract

Documents.

#### IT.10.2 CURRENCY CONVERSION RATES

For the purpose of comparison of Tenders, each Tender price shall be valued in terms of the Pakistani rupee. The rate of exchange be used for such evaluation shall be the selling rate officially prescribed by the State Bank of Pakistan and prevailing on the Tender date (i.e. date of Bid opening), (unless there should be a change in the value of the currencies before the award is made. In the later case, the exchange rates prevailing at the time of the decision to notify the award to the successful Tenderer, shall be used.)

#### IT.11. EVALUATION CRITERIA AND COMPARISON OF TENDERS

- 1) The Owner will evaluate and compare the Tenders determined to be substantially responsive, pursuant to Clause IT.9 hereof.
- 2) Comparison KWH cost for generation will be made to determine the lowest evaluated Tender in following manner:

$$Ca = \frac{Fa + Am + Ma + Ea}{Gu}$$

Where Ca = KWH cost in Rupees for generation delivery to 220KV bus bars.

Fa = Annual cost of fuel in Rupees against produced annual generation with 75 % of load factor.

Fuel cost in Rs.2,034.05 per metric ton.

Am = Annual amortization charge which will be taken as 12.4% of the adjusted Tender Price in

Ma = Annual maintenance charge which will be calculated at 3 % of the adjusted Tender Price.

Ea = The fixed establishment cost which will be taken as million.

Gu = Annual Generation (KWH) with 75 % load factor.

$$Gu = \frac{60Ga + 23Gb + 17Gc}{100} \times 24 \text{ hrs} \times 365 \text{ days} \times 0.75 \times 1,000$$

Where  $G_a = \frac{(\text{MW at generation terminal end at } 4/4 \text{ rated load}) + (\text{KW of auxiliary power at } 4/4 \text{ rated load})}{1,000}$

$G_b = \frac{(\text{MW at generation terminal end at } 3/4 \text{ rated load}) + (\text{KW of auxiliary power at } 3/4 \text{ rated load})}{1,000}$

$G_c = \frac{(\text{MW at generation terminal end at } 2/4 \text{ rated load}) + (\text{KW of auxiliary power at } 2/4 \text{ rated load})}{1,000}$

Fa is calculated as follows

$$Fa = \frac{Gu \text{ (KWH)} \times Fu \times \text{Fuel cost (Rs/t)}}{10^7 \text{ Kcal/t}}$$

Where Fu = Average net plant heat rate (Kcal/KWH) proposed by Tenderer

3) Adjusted Tender Price shall include Tender Price and Tender adjustments as given below:

a) Tender Price will be increased at the rate of 0.1 % of the

Tender Price per day for each calendar day of completion later than the specified day of completion.

- b) Credit shall be given for the purpose of evaluation at the rate of 0.05 % of the Tender Price for each calendar day of earlier completion up to a maximum limit of 2.5 % of the Tender Price.
- c) Deficiencies in the Tender
- d) Deviations from the specifications
- e) Correction of errors
- f) Recommended spare parts will not be evaluated as part of the Tender Price
- g) No credit of any kind will be given in evaluation for units of above 200 MW rating. Units having rating below 200 MW will be rejected.

#### IT.12 ACCEPTANCE OF TENDERS

The Owner does not bind himself to award the Contract to the lowest or any Tenderer.

However, the Contract will be normally awarded to the lowest evaluated responsive qualified Tenderer. A "responsive" Tender is one that complies with all the terms and conditions in the Tender Documents without material deviation or modification. A material deviation or modification is one which affects in any way the price, quality, scope, or completion date of construction, services



or which limits in any way any responsibilities, duties, or liabilities of the Contractor or any rights of the Owner or as any of the foregoing have been specified or defined in the Tender Documents. Tenderers may not modify nonresponsive Tenders after opening in order to make them responsive. However, the Owner may request a Tenderer to clarify its Tender as long as no material modification is made.

The Owner reserves the right to reject any or all Tenders and to waive minor informalities if it appears in the Owner's best interest to do so.

Tenderers are requested not to contact the Owner on any matter relating to the Tender, from the time of the opening to the time the Contract is awarded, except to respond to inquiries by the Owner.

Any effort by a Tenderer to influence the Owner in the Tender evaluation, Tender comparison or contract award decisions may result in the rejection of his Tender. Once the Owner has arrived at a decision regarding the award of the Contract, he will notify promptly the successful Tenderer in writing by issuing "Notice of Award". The successful Tenderer will be required to send to Owner's Chief Engineer Project and Civil (P & C), in writing the acceptance of the same notice, within ten (10) days of the date of receipt of such notice, A representative or representatives with proper power of attorney for the purpose of executing the Contract in the form set out in the Contract Documents with such alterations or additions thereto as may be required to adopt to the circumstances

of the Tender shall be dispatched to the Owners office after receipt of such notice.

Failure on the part of the successful Tenderer to provide a Performance Bond in accordance with the Conditions of Contract and/or to enter into a Contract with the Owner shall be sufficient grounds for the annulment of the award and in the event of such annulment the Tender guarantee of the successful Tenderer shall be retained by and become payable to the Owner. The award may then be made to another Tenderer, or the Owner may call for the submission of new Tenders.

All recipients of the Tender Documents (whether they submit a Tender or not) shall treat the details of the Tender Documents as private and confidential.

Any Tender which does not conform to the foregoing instructions may be rejected.





SECTION II

TENDER AND APPENDICES

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SECTION II

TENDER AND APPENDICES

PAGE

Form of Tender .....  
APPENDIX A - Schedule of Prices .....  
APPENDIX B - Form of Tender Bond .....  
APPENDIX C - Special Stipulations .....  
APPENDIX D - Receipt of Addenda .....  
APPENDIX E - List for Goods Imported Outside of Eligible  
Source Countries .....  
APPENDIX F - Delivery and Construction Schedule .....  
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APPENDIX K - Form of Certificates for Source & Origin,  
and Eligibility .....  
APPENDIX L - Weight and Volumes of Packages for Shipment .....





FORM OF TENDER

WEST WHARF THERMAL POWER STATION PROJECT UNIT NO.1 AND NO.2

LOT-I POWER PLANT FACILITIES AND CIVIL/ARCHTECTURAL WORKS

(NOTE: - Tenderers are required to fill in all blank spaces in this Tender Form and Appendices).

TO:

KARACHI ELECTRIC SUPPLY CORPORATION LIMITED

GENTLEMEN,

1. Having examined the Tender Documents and Appendices, Conditions of Contract, Conditions of Particular Application, Specifications, Drawings, Schedule of Prices, and Addenda Numbers \_\_\_\_\_ for above named works, and having been satisfied as to all conditions under which the above-named works must be performed, we the undersigned offer to design, manufacture, furnish, deliver, store at site, erect, start to work, test and maintain the whole of the said Works, in conformity with the said Conditions of Contract, Conditions of Particular Application, Specifications, Schedule of Prices etc., for the total Tender Price of (Currency of Japanese Yen) \_\_\_\_\_ consisting of foreign currency component in equivalent Pakistani Repee \_\_\_\_\_ and local currency component in Pakistani Rupee \_\_\_\_\_.

2. Should this Tender be accepted by you, we propose to send a representative or representatives having our power of attorney to KARACHI, PAKISTAN, within ten days following receipt of your written acceptance of this Tender for the purpose of executing a Contract Agreement in the form set out in the Contract Documents with such alterations or additions thereto as you may require to adopt such Agreement to the circumstances of this Tender.

3. We undertake, if our Tender is accepted, to commence the Works upon receipt of the Owner/Engineer's orders to commence and to complete all the Works comprised in the Contract in accordance with Appendix F (Delivery and Completion Schedule).

4. We propose to retain the following firms:  
(Name, Type of Service and Country of Registration)

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as Surety or Sureties if approved by you to be jointly and severally bound with us for the due performance of said Contract in sum in Japanese Yen currency and Pakitani Rupee equivalent to the sum named in Paragraph 1 hereof, and to procure and to have executed by the said surety or such other surety as approved by you within 30 days of notification by you that we should do so, a Performance Bond in the form set forth in the Contract Documents.

5. We agree that this Tender shall remain valid for a period of 210 days following the Tender Date and may be accepted by you at any time before the expiration of such period.
6. Unless and until a formal Agreement is prepared and executed, this Tender together with your written acceptance thereof shall constitute a binding Contract between us.
7. We understand that you are not bound to accept the lowest or any Tender you may receive and that you will not defray any expense incurred by us in tendering.
8. As security for the due performance of the undertakings and obligations of this Tender, we submit herewith a Tender Bond in the amount of \_\_\_\_\_ or the equivalent in Pakistani Rupee drawn in your favour or made payable to you and valid for \_\_\_\_ days from the Tender Date.

9. We understand that all Appendices attached hereto form part of this Tender.

DATED this \_\_\_\_\_ Day of \_\_\_\_\_ 1990.

TENDERER: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

(Secretary)

(Seal)

SUMMARY OF  
SCHEDULE OF PRICES  
(UNIT 1 AND 2)

WEST WHARF UNITS I & II  
Summary of Price Schedule

Description	Unit - 1		Unit - 2		Unit 1 + Unit 2	
	Yen	Rs	Yen	Rs	Yen	Rs
I. Power Plant Equipment						
II. Civil & Architectural						
III. Spare Parts						
IV. Technical Advisor						
V. KESC Personnel Training at Manufacturer's Factory						
Total						







APPENDIX A

SCHEDULE OF PRICES

\_\_\_\_\_  
(Tenderer's Name)

Preamble

1. General

The Schedule of Prices shall be read in conjunction with the "Instructions to Tenderer's", "Conditions of Contract", "Conditions of Particular Application", "Technical Specifications" and "Drawings for Tendering".

2. Quoted Prices

In the Schedule of Prices (Appendix A to Tender) the prices shall be quoted for the total quantity of each item required to fully complete the works strictly in accordance with the Tender Documents, the quoted prices shall be deemed to include all costs incurred by the Contractor in performance of the Works including his overheads, income tax, super tax, other indirect costs, profits and costs of accepting the general risks, liabilities or obligations set forth or implied in the Contract except for such costs which are specified herein as reimbursable.

We, \_\_\_\_\_ (Company name), the Tenderer do hereby certify that the Schedule of Prices submitted to the Owner is in full compliance with the requirement stated above.

Signed \_\_\_\_\_

Date \_\_\_\_\_

Seal of Tenderer



SUMMARY

OF

SCHEDULE OF PRICES

(UNIT 1)

(Tenderer's Name)

SUMMARY OF  
SCHEDULE OF PRICES

(1/8)

DESCRIPTION	FOREIGN CURRENCY	LOCAL CURRENCY (Rs)	TOTAL IN EQUIVALENT LOCAL CURRENCY (Rs)
I. POWER PLANT EQUIPMENT			
1. STEAM GENERATOR AND AUXILIARY EQUIPMENT			
(1) Equipment and materials (FOB)			
(2) Transportation to port of Karachi, customs clearance and inland transportation to site			
(3) Insurance for transport to Site			
(4) Erection on Site			
(a) Equipment and materials for erection and test operation			
(b) Manufacturer's Specialists			
(c) Erection specialists, technicians and labors			
(d) Insurance for erection			
SUB-TOTAL			

(Tenderer's Name)

(2/8)

DESCRIPTION	FOREIGN CURRENCY	LOCAL CURRENCY (Rs)	TOTAL IN EQUIVALENT LOCAL CURRENCY (Rs)
2. STEAM TURBINE AND AUXILIARY EQUIPMENT			
(1) Equipment and materials (FOB)			
(2) Transportation to port of Karachi, customs clearance and inland transportation to site			
(3) Insurance for transport to Site			
(4) Erection on Site			
(a) Equipment and materials for erection and test operation			
(b) Manufacturer's Specialists			
(c) Erection specialists, technicians and labors			
(d) Insurance for erection			
SUB-TOTAL			

(Tenderer's Name)

(3/8)

DESCRIPTION	FOREIGN CURRENCY	LOCAL CURRENCY (Rs)	TOTAL IN EQUIVALENT LOCAL CURRENCY (Rs)
3. COMMON AUXILIARY EQUIPMENT	_____	_____	_____
(1) Equipment and materials (FOB)	_____	_____	_____
(2) Transportation to port of Karachi, customs clearance and inland transportation to site	_____	_____	_____
(3) Insurance for transport to Site	_____	_____	_____
(4) Erection on Site	_____	_____	_____
(a) Equipment and materials for erection and test operation	_____	_____	_____
(b) Manufacturer's Specialists	_____	_____	_____
(c) Erection specialists, technicians and labors	_____	_____	_____
(d) Insurance for erection	_____	_____	_____
SUB-TOTAL	_____	_____	_____

(Tenderer's Name)

(4/8)

DESCRIPTION	FOREIGN CURRENCY	LOCAL CURRENCY (Rs)	TOTAL IN EQUIVALENT LOCAL CURRENCY (Rs)
4. GENERATOR AND ELECTRICAL EQUIPMENT	_____	_____	_____
(1) Equipment and materials (FOB)	_____	_____	_____
(2) Transportation to port of Karachi, customs clearance and inland transportation to site	_____	_____	_____
(3) Insurance for transport to Site	_____	_____	_____
(4) Erection on Site	_____	_____	_____
(a) Equipment and materials for erection and test operation	_____	_____	_____
(b) Manufacturer's Specialists	_____	_____	_____
(c) Erection specialists, technicians and labors	_____	_____	_____
(d) Insurance for erection	_____	_____	_____
<b>SUB-TOTAL</b>	_____	_____	_____

(Tenderer's Name)

(5/8)

DESCRIPTION	FOREIGN CURRENCY	LOCAL CURRENCY (Rs)	TOTAL IN EQUIVALENT LOCAL CURRENCY (Rs)
5. PLANT COMPUTER SYSTEM			
(1) Equipment and materials (FOB)	_____	_____	_____
(2) Transportation to port of Karachi, customs clearance and inland transportation to site	_____	_____	_____
(3) Insurance for transport to Site	_____	_____	_____
(4) Erection on Site	_____	_____	_____
(a) Equipment and materials for erection and test operation	_____	_____	_____
(b) Manufacturer's Specialists	_____	_____	_____
(c) Erection specialists, technicians and labors	_____	_____	_____
(d) Insurance for erection	_____	_____	_____
SUB-TOTAL			



(Tenderer's Name)

(6/8)

DESCRIPTION	FOREIGN CURRENCY	LOCAL CURRENCY (Rs)	TOTAL IN EQUIVALENT LOCAL CURRENCY (Rs)
II. ARCHITECTURAL/STRUCTURAL AND CIVIL WORKS (including Building Service Facility)			
(1) Main powerhouse			
(2) Stack			
(3) Auxiliary buildings			
(4) Cooling waterway			
(5) Other civil works			
(6) Misc. foundations			
(7) Road and drainage system			
(8) Site finishing work			
SUB-TOTAL			

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(Tenderer's Name)

(7/8)

DESCRIPTION	FOREIGN CURRENCY	LOCAL CURRENCY (Rs)	TOTAL IN EQUIVALENT LOCAL CURRENCY (Rs)
III. MANDATORY SPARE PARTS AND EXPENDABLES (excluding Tenderer's recommended spare parts and recommended testing equipment)			
1. POWER PLAN EQUIPMENT			
(1) Mandatory spare parts (FOB)			
(2) Expendables (consumable) (FOB)			
(3) Transportation to port of Karachi, customs clearance and inland transportation to site			
(4) Insurance for transport to site			
2. BUILDING SERVICE FACILITY			
(1) Mandatory spare parts (FOB)			
(2) Freight to site Storage			
(3) Insurance for transport to site			
SUB-TOTAL			

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(Tenderer's Name)

(8/8)

DESCRIPTION	FOREIGN CURRENCY	LOCAL CURRENCY (Rs)	TOTAL IN EQUIVALENT LOCAL CURRENCY (Rs)
IV. TECHNICAL ADVISERS FOR OPERATION AND MAINTENANCE	_____	_____	_____
V. TRAINING FOR KESC PERSONNEL	_____	_____	_____
VI. Performance * (i) for 10% Bond	_____	_____	_____
Total of * (i) for 10% Tender Price	_____	_____	_____



SCHEDULE OF PRICES

I. Power Plant Equipment

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
1. EQUIPMENT														
1.1 STEAM GENERATOR														
(1) Boiler general equipment including following items specified in clause 1.1 of "Scope of supply" in Section II; items (1) through (8), (11), (14), (15), (21), and (23)														
(2) Fuel oil firing system and auxiliary fuel gas firing system														
(3) Air preheater and steam coil air preheater														
(4) Air ducts and flue gas ducts and soots hopper														
(5) Fans including following items specified in clause 1.1 of "Scope of supply" in Section II; items (18), (19) and (20)														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
(6) Seal air, aspirating air system														
(7) Auxiliary steam system														
(8) Main steam piping														
(9) Cold reheat piping														
(10) Hot reheat piping														
(11) Feed water and spray water piping														
(12) Wash water, waste water, cooling water and N2 gas system														
(13) Boiler control system														
(14) Burner control system														
(15) Instrumentation														
(16) Power cable, control cable, control instrument cable, computer cable, cable duct, tray conduit and grounding wire														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
(17) Steam general of supporting steel and hanger beam, platform, stairs ladders, walk ways, etc.														
(18) Painting														
(19) Insulation and lagging (including boiler and piping)														
(20) Testing including all field test items and all testing materials														
Note: The following items specified in clause 1.1 of "Scope of Supply" in Section II; items (34), (35), (36) and (41) shall be included in the above appropriate items.														
1.2 AUXILIARY EQUIPMENT														
(1) Steam converter system														
(2) Instrument air system														
(3) Service air system														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
(4) Chemical feed system														
(5) Sampling rack system														
(6) Piping for items (1) through (6)														
(7) Painting for items (1) through (6)														
(8) Test and testing materials (including chemical, lubricant, etc.)														
SUB-TOTAL														
TOTAL OF ITEM 1														
Spare parts of Item 1														
Total of Item 1 with Spare parts														



(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin						Local Currency						Total in Equivalent Pak Rupees	
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)		Total in Rupees (F)+(G)+(H)+(I)+(J)
2. STEAM TURBINE AND AUXILIARY EQUIPMENT														
2.1 STEAM TURBINE														
(1) Turbine including following items specified in Caluse 1.1 of "Scope of supply" in Section III; items (1), (2), (3), (5), (9), (13), (14) and (15)														
(2) Lubricating and hydraulic oil system														
(3) Gland steam seal system														
(4) Turbine supervisory instrument														
(5) Turbine instrumentation														
(6) Insulation and metal lagging														
(7) Painting														
(8) Test and testing materials (including turbine lubricating oil)														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin						Local Currency						Total in Equivalent Pak Rupees	
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)		Total in Rupees (F)+(G)+(H)+(I)+(J)
2.2 AUXILIARY EQUIPMENT														
(1) Surface condenser														
(a) Surface condenser including following items specified in clause 2.1 of "Scope of Supply" in Section III; items (1), (2), (3), (6), (7), (8), (9), (10) and (12)														
(b) Continuous tube cleaning system														
(c) Debris filter														
(d) Operating galleries														
(2) Air ejector with starting air ejector														
(3) Priming vacuum equipment														
(4) Circulating water pump														
(5) Condensate pump														
(6) Feedwater heater														
(7) Deaerator														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
(8) Boiler feed pumping equipment														
(9) Bearing cooling water system														
(10) Make up water tank and transfer pump														
(11) Turbine clean drain tank and pump														
(12) Piping														
(13) Instrumentation														
(14) Painting for above items (1) through (13) and (17)														
(15) Insulation and lagging for above items (2), (6), (7), (8), (11), (12) and (13)														
(16) Test and testing materials (including chemical, lubricant, etc.)														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
(17) Power cable, control cable, control instrument cable, cable duct, tray, conduit and grounding wire														
SUB-TOTAL														
TOTAL OF ITEM 2														
Spare parts of Item 2														
Total of Item 2 with Spare parts														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin.							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
3. ANCILLARY SYSTEM AND COMMON AUXILIARY EQUIPMENT														
3.1 HOUSE BOILER														
3.2 TURBINE ROOM OVER-HEAD CRANE														
3.3 WATER SUPPLY SYSTEM														
(1) Water pretreatment system														
(2) Drinking water system														
(3) Raw water tank including service water pump														
(4) Water treatment system														
(5) Demineralized water tank including Transfer Demineralized water pump														
3.4 DRAINAGE AND WASTE WATER TREATMENT EQUIPMENT														
3.5 FUEL OIL SYSTEM														
3.6 FIRE PROTECTION SYSTEM														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin						Local Currency						Total in Equivalent Pak Rupees	
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)		Total in Rupees (F)+(G)+(H)+(I)+(J)
3.7 INTAKE SCREEN														
3.8 CHLORINATION EQUIPMENT														
3.9 YARD INSTRUMENT AIR SYSTEM														
3.10 PIPE SUPPORT AND STRUCTURAL STEEL FOR YARD PIPING														
3.11 LABORATORY														
3.12 REPAIR ROOM INSTRUMENTS														
3.13 TRUCK CRANE														
3.14 FORK LIFT TRUCK														
3.15 MACHINE SHOP EQUIPMENT														
3.16 MISCELLANEOUS INSTRUMENT AND CONTROL APPARATUS														
3.17 INSULATION AND LAGGING FOR EQUIPMENT INCLUDED IN ITEM 3														
3.18 PAINTING FOR EQUIPMENT INCLUDED IN ITEM 3														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
Note: Power cases, control cooler control instrument cable, computer cable, cable ducts, trays, conduits and grounding wires shall be included in the above each item.														
3.19 TEST AND TESTING MATERIALS (including chemical lubricant, etc.)														
SUB-TOTAL														
TOTAL OF ITEM 3														
Spare parts of Item 3														
Total of Item 3 with Spare parts														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin						Local Currency						Total in Equivalent Pak Rupees	
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)		Total in Rupees (F)+(G)+(H)+(I)+(J)
4. GENERATOR AND ELECTRICAL EQUIPMENT														
4.1 GENERATOR EQUIPMENT														
(1) Generator, excitation equipment with accessories including hydrogen gas supplying unit, carbon dioxide supply equipment and seal oil system														
(2) Hydrogen generating system														
(3) Isolated phase bus duct with accessories (including mounting structure)														
(4) Potential transformer cubicle with accessories														
(5) Surge absorber cubicle with accessories														
(6) Neutral grounding resistor cubicle with accessories														
SUB-TOTAL														



(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin						Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	
4.2 POWER TRANSFORMER													
(1) Main transformer with accessories (including insulation oil and cooler cubicle)													
(2) Auxiliary transformer with accessories (including insulation oil and secondary cubicle)													
(3) Starting transformer with accessories (including insulation oil and secondary cubicle)													
4.3 METAL CLAD SWITCH GEAR													
(1) 6,600 volt metal clad switch gear (M/C) with accessories													
(a) Unit No. 1 M/C													
(b) Common M/C													
(2) 400 volt power center (P/C) with accessories													
(a) Unit No. 1 P/C													
(b) Common P/C													
SUB-TOTAL													

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
(c) Unit No. 1 P/C transformer														
(d) Common P/C transformer														
(3) 400 volt control center (C/C) with accessories														
(a) 1-1A C/C														
(b) 1-1B C/C														
(c) 1-2A C/C														
(d) 1-2B C/C														
(e) 1-3 C/C														
(f) Motor valve C/C														
(g) Screen and chlo. C/C														
(h) No. 1 common C/C														
(4) Water treatment switchgear with accessories														
(a) 400 v C/C														
(b) 380 V - 220 V distribution panel assembly														
(5) Waste water treatment switchgear														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
(6) DC 220 V control center with accessories														
(7) CVCF with distribution panel														
4.4 PANEL AND BOARD														
(1) BTG board with accessories														
(2) Distribution panel (D/P) with accessories														
(a) 220 V normal and emergency lighting D/P														
(b) 220 V instrument D/P														
(c) DC 220 V D/P														
(d) 380 V - 220 V miscellaneous power D/P														
(e) 220 V lighting D/P														
(f) 220 V - 110 V laboratory D/P														
(g) 380 V - 220 V administration building D/P														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin .							Local Currency						Total in Equiva- lent Pak Rupees
	FOB Port of Export  (A)	Marine Transpor- tation to Port of Karachi  (B)	Insurance for Transpor- tation  (C)	Erection and Commis- sioning  (D)	Insurance for Erection and Commis- sion  (E)	Total Currency of Country of Origin  (A)+(B)+ (C)+(D)+ (E)	Equiva- lent Pak Rupees	Customs Clearance & Inland Transpor- tation to Project Storage Area  (F)	Indige- nous Equip- ment Material  (G)	Insurance from port of Karachi to Project Storage Area  (H)	Erec- tion, Commis- sioning  (I)	Insur- ance for Erection and Commis- sioning  (J)	Total in Rupees  (F)+(G)+ (H)+(I)+ (J)	
(3) Auxiliary control panel														
(4) Auxiliary relay panel														
(5) Substation monitoring panel														
4.5 EMERGENCY DIESEL ENGINE GENERATOR														
(1) Diesel engine generator with accessories														
(2) Control panel with accessories														
4.6 BATTERY AND BATTERY CHARGER														
(1) DC 220 V battery and battery charger with accessories														
(a) Storage battery														
(b) Battery charger														
(2) DC 24 V battery and battery charger with accessories														
(a) Storage battery														
(b) Battery charger														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
(3) DC 48 V battery and battery charger with accessories														
(a) Storage battery														
(b) Battery charger														
4.7 COMMUNICATION														
(1) Paging system with accessories														
(a) Amplifier panel														
(b) Power source panel														
(c) Hand set														
(d) Speaker														
(e) Operator console desk														
(2) Private automatic branch exchanger (PABX) with accessories														
(a) PABX														
(b) Attendant console														
(c) Telephone set														
(3) Clock system with accessories														
(a) Master clock														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin						Local Currency						Total in Equivalent Pak Rupees	
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)		Total in Rupees (F)+(G)+(H)+(I)+(J)
(b) Slave clock														
4.8 LIGHTING														
(1) Lighting fixture														
(2) Lighting distribution panel with accessories														
(3) AC-DC changeover panel														
4.9 CV (XLPE) CABLE														
(1) 220 kV CV cable with accessories for main transt.														
(2) 132 kV CV cable with accessories for starting transt.														
4.10 CONSTRUCTION MATERIALS														
(1) Cable and wire														
(a) 6,600 V power cable														
(b) 600 V power cable														
(c) 600 V control cable														
(d) Communication cable														
(e) Special cable														
(2) Steel conduit														
SUB-TOTAL														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin						Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	
(3) Cable tray													
(4) Grounding wire													
(5) Distribution panel for maintenance works													
4.11 TEST AND TESTING MATERIALS													
SUB-TOTAL													
TOTAL OF ITEM 4													
Spare parts of Item 4													
Total of Item 4 with Spare parts													

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
5. PLANT COMPUTER SYSTEM														
5.1 CENTRAL PROCESSING UNIT WITH MAIN MEMORY (INCLUDING SOFTWARE)														
5.2 AUXILIARY MEMORY UNIT WITH ACCESSORIES														
5.3 PROCESS INPUT/OUTPUT UNIT WITH ACCESSORIES														
5.4 CABINET OF COMPUTER SYSTEM INCLUDING FOLLOWING ITEMS														
CPU and FDD unit cabinet, auxiliary memory unit cabinet, CRT controller cabinet, I/I Device cabinet, termination cabinet and distribution cabinet														
5.5 CRT UNIT														
5.6 PRINTER														
5.7 I/O PRINTER														
5.8 TREND RECORDER														
5.9 FLOPPY DISK DEVICE														
SUB-TOTAL														



(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin.							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
5.10 HARD COPY UNIT														
5.11 OPERATOR'S CONSOLE														
5.12 OPERATOR'S DESK														
5.13 PRINTER DESKS														
5.14 ENGINEER'S DESK														
5.15 CONSTRUCTION MATERIALS														
Including following items specified in clause 1.1 of "Scope of supply" in Section VI; items (23), (24), (25), (26) and (28)														
SUB-TOTAL														
TOTAL OF ITEM 5														
Spare parts of Item 5														
Total of Item 5 with Spare parts														

(Tenderer's Name)

Description	Foreign Currency in Currency of Country of Origin							Local Currency						Total in Equivalent Pak Rupees
	FOB Port of Export (A)	Marine Transportation to Port of Karachi (B)	Insurance for Transportation (C)	Erection and Commissioning (D)	Insurance for Erection and Commissioning (E)	Total Currency of Country of Origin (A)+(B)+(C)+(D)+(E)	Equivalent Pak Rupees	Customs Clearance & Inland Transportation to Project Storage Area (F)	Indigenous Equipment Material (G)	Insurance from port of Karachi to Project Storage Area (H)	Erection, Commissioning (I)	Insurance for Erection and Commissioning (J)	Total in Rupees (F)+(G)+(H)+(I)+(J)	
6. MANDATORY SPARE PARTS														
6.1 STEAM GENERATOR AND AUXILIARY EQUIPMENT														
(1) Steam generator														
(2) Auxiliary equipment														
6.2 STEAM TURBINE AND AUXILIARY EQUIPMENT														
(1) Steam turbine														
(2) Auxiliary equipment														
6.3 COMMON AUXILIARY EQUIPMENT														
6.4 GENERATOR AND ELECTRICAL EQUIPMENT														
6.5 PLANT COMPUTER SYSTEM														
TOTAL OF ITEM 6														
Spare parts of Item 6														
Total of Item 6 with Spare parts														



SCHEDULE OF PRICES  
FOR  
CIVIL AND ARCHITECTURAL WORKS  
( UNIT 1 )

The quantities and working items which are listed in the Schedule of Prices are considered to be the estimated quantities and items for which the Bidder will be held responsible and on which the Bidder will submit his proposal price. The Bidder shall include all required materials and labors required to complete all works as stipulated in the Specification and/or Drawings.

Notes:

FC means foreign currency in country of origin.



PROJECT: WEST WHARF THERMAL POWER PLANT

DATE

SCHEDULE OF PRICES

SUBJECT: UNIT-1 Civil & Architectural Works

SHEET OF

DESCRIPTION	SPECIFICATION	UNIT QUANTITY	Rs		REMARKS
			UNIT-PRICE	AMOUNT	
			UNIT-PRICE	AMOUNT	FC
A. Main Powerhouse		L.S 1			Including Boiler mat foudation
B. Stack		L.S 1			
C. Auxiliary Buildings		L.S 1			
D. Cooling Water Way		L.S 1			
E. Other Civil Works		L.S 1			
F. Mis. Foundations		L.S 1			
G. Road and drainage system		L.S 1			
H. Site Finishing Work		L.S 1			
Total					

PROJECT: WEST WHARF THERMAL POWER PLANT

SCHEDULE OF PRICES

DATE

SHEET OF

SUBJECT: Unit-1 Main Powerhouse

DESCRIPTION	SPECIFICATION	UNIT QUANTITY	RS		REMARKS
			UNIT-PRICE	AMOUNT	
			UNIT-PRICE	AMOUNT	FC
A. Main Powerhouse					
(1) Earth Work		L.S	1		
(2) Piling Work		L.S	1		
(3) Reinforced Concrete Work		L.S	1		
(4) Structural Steel Work		L.S	1		
(5) Concrete Block Work		L.S	1		
(6) Waterproofing Work		L.S	1		
(7) Tile Work		L.S	1		
(8) Carpentry		L.S	1		
Sub total (1) - (8)					

DESCRIPTION	SPECIFICATION	UNIT	QUANTITY	Rs		FC		REMARKS
				UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
(9) Metal Work		L.S	1					
(10) Plaster Work		L.S	1					
(11) Doors, Windows and Louvers		L.S	1					
(12) Painting Work		L.S	1					
(13) Interior Finish Work		L.S	1					
Sub total (9) - (13)								
(14) Ventilation and Air-conditioning system								
1. Equipment work		L.S	1					
2. Piping work		L.S	1					
3. Air duct work		L.S	1					
4. Ventilation system		L.S	1					



DESCRIPTION	SPECIFICATION	UNIT	QUANTITY	Rs		FC		REMARKS
				UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
5. Automatic control and secondary electrical work		L.S	1					
Sub total (14)								
(15) Water Supply, Drainage Sewage System								
1. Water supply equipment work		L.S	1					
2. Hot water supply equipment work		L.S	1					
3. Sanitary fixture		L.S	1					
4. Drainage and vent system		L.S	1					
5. Clarification tank equipment		L.S	1					
Sub total (15)								
(16) Elevator Facilities		L.S	1					
Total (1) - (16)								



DESCRIPTION	SPECIFICATION	UNIT	QUANTITY	Rs		FC		REMARKS
				UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
(2) Piling work								
Steel pipe pile	Driving length ø609.6 x 9.0mm thick	m	11,661					Including materials, sand in pile, top reinforcement and field weld joint
Sub total (2)								
(3) Reinforced Concrete Work								
Reinforcing bar	ASTM A615 Gr.40 deformed	ton	780					Including bending, cutting and placing
Reinforced concrete	Mat foundation Class-D	m <sup>3</sup>	7,650					Including form work
Reinforced concrete	Under-ground wall Class-D	m <sup>3</sup>	100					Including form work
Reinforced concrete	Slab Class-D	m <sup>3</sup>	1,860					Including form work

DESCRIPTION	SPECIFICATION	UNIT	QUANTITY	Rs		FC		REMARKS
				UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
Reinforced concrete	Equipment fnds Class-D	m <sup>3</sup>	700					Including form work
Reinforced concrete	T/G pedestal Class-B	m <sup>3</sup>	850					Including form work
Precast concrete panel	t=120mm Class-C	m <sup>2</sup>	2,165					including form with steel attachment and back-up materila & caulking
Fill concrete	Air mortar	m <sup>3</sup>	2,700					
Light weight concrete		m <sup>3</sup>	2					
Expansion joint	Asphalt felt 12mm thick	m <sup>2</sup>	127					
Chipping		m <sup>2</sup>	590					For top of equipment foundation & T/G pedestal
Form staging for T/G pedestal	Steel	m <sup>3</sup>	2,800					
Anchor frame and bolt setting		ton	5					
Support frame for T/G pedestal reinforcement		ton	5					

DESCRIPTION	SPECIFICATION	UNIT QUANTITY	Rs		FC		REMARKS
			UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
Reinforcing bar	T/G pedestal and Equipment Foundations	ton 180					
Sub total (3)							
(4) Structural Steel Work							
Structural steel	SS41	ton 1,238					Material & Fabrication
Structural steel	SM41A	ton 396					Material & Fabrication
Structural steel erection		ton 1,634					Including Grouting for column base
Miscellaneous steel	Mono-rails, etc. SS41	ton 30					Material, Fabrication & erection
Sub total (4)							



DESCRIPTION	SPECIFICATION	UNIT QUANTITY	Rs		FC		REMARKS
			UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
(6) Waterproofing Work							
Built-up asphalt waterproof	Class-A	m <sup>2</sup> 3,020					
Built-up asphalt waterproof	Class-B	m <sup>2</sup> 40					
Caulking		m 2,020					Doors, windows, parapet lowers
Sub total (6)							
(7) Tile work							
Ceramic mosaic tile		m <sup>2</sup> 30					Including mortar bed
Grazed wall tile		m <sup>2</sup> 80					Including mortar bed
Sub total (7)							

DESCRIPTION	SPECIFICATION	UNIT	QUANTITY	Rs		FC		REMARKS
				UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
(8) Carpentry work								
Wood trim and stool	w=750	m	100					Including painting
Kettle unit		set	2					Including painting
Mop rack		each	2					Including painting
Blind box	150 x 150 mm	m	20					Including painting
Hanging shelf	Painted plywood	set	1					With double swing door and enclosure
Sub total (8)								
(9) Metal Work								
Grating for floor and cutwalk	t=32mm galvanized	m <sup>2</sup>	550					
Grating for tread of stair	t=25mm galvanized	m <sup>2</sup>	170					



DESCRIPTION	SPECIFICATION	UNIT	QUANTITY	Rs		FC		REMARKS
				UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
Steel deck	614 x 50 x 1.2 galvanized	m <sup>2</sup>	8,700					
Metal siding Vinyl coated	With fixing hardware	m <sup>2</sup>	2,800					Including boiler
Handrail	H=1,100	m	940					With painting including stair handrail
Handrail removable	H=1,000	m	60					With painting
Corner guards	H=3,000	each	44					With painting
Steel ladder	With safety cage	m	22					With painting including anchoring
Trench covers and frames		ton	15					With corner angle with painting
Vinyl coated metal flushing		m <sup>2</sup>	325					
Coping	Flattened area	m <sup>2</sup>	350					Including pipe space covering
Vinyl coated metal for parapet rear side		m <sup>2</sup>	370					
Corner beads		m	890					

DESCRIPTION	SPECIFICATION	UNIT QUANTITY	RS		FC		REMARKS
			UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
Toe plate	6.0mm thick	ton	45				With painting
Border strip for slab opening of T/G pede		m	80				
Embedded plates hook and sleeve		ton	10				With painting
Steel ring		each	55				With painting
Light weight suspended ceiling		m <sup>2</sup>	1,820				
Light weight wall bed		m <sup>2</sup>	1,380				
Roof drain	125mm dia vertical type	each	19				
Down spout	125mm galvanized	m	460				Including boiler
Door sill	Stainless steel	m	30				
Free access floor	450 x 450 x 40	m <sup>2</sup>	280				With cell fittings
Checkered plate	t=6.0mm	m <sup>2</sup>	630				With painting for cable space
Vinyl coated metal V beam roofing		m <sup>2</sup>	615				For boiler

DESCRIPTION	SPECIFICATION	UNIT QUANTITY	Rs		FC		REMARKS
			UNIT-PRICE	AMOUNT	UNIT-PRICE	AMOUNT	
Vinyl coated metal fascia and coping		m	100				For boiler
Metal gutter		m	24				For boiler
Vinyl coated metal siding		m <sup>2</sup>	500				For boiler
Metal trim		m	720				
Sub total (9)							
(10) Plaster Work							
Mortar plastering for wall		m <sup>2</sup>	1,540				
Mortar base board		m	420				
Mortar steel trowelled	With metal lath	m <sup>2</sup>	130				Stair tread & roof gutter
Mortar steel trowelled finish		m <sup>2</sup>	1,430				