



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 07

Ref: PSER:SCT:KLN-M1876:TCN-07

Date: 29-03-2018

Sub	Tender Change Notice -TCN-07
Job	PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh. PACKAGE-B : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Ventilation System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh
Ref	1.0 Tender no PSER:SCT:KLN-M1876:18
	2.0 BHEL's NIT, vide reference no PSER:SCT:KLN-M1876: 6472 Date: 06-02-2018
	3.0 BHEL's TCN-01 vide ref PSER:SCT:KLN-M1876:TCN-01 dated 27-02-2018
	4.0 BHEL's TCN-02 vide ref PSER:SCT:KLN-M1876:TCN-02 dated 09-03-2018
	5.0 BHEL's TCN-03 vide ref PSER:SCT:KLN-M1876:TCN-03 dated 13-03-2018
	6.0 BHEL's TCN-04 vide ref PSER:SCT:KLN-M1876:TCN-04 dated 14-03-2018
	7.0 BHEL's TCN-05 vide ref PSER:SCT:KLN-M1876:TCN-05 dated 19-03-2018
	8.0 BHEL's TCN-06 vide ref PSER:SCT:KLN-M1876:TCN-05 dated 26-03-2018
	9.0 All other pertinent issues till date.

With reference to above, following points/ documents, relevant to tender, may please be noted and complied with while submitting offer.

- 1.0 Revised BOQ cum price schedule, **VOLUME-III A ,PRICE SCH-REV-01(PACKAGE-A)** is attached **superseding VOLUME-III A- PRICE SCH-REV-00(PACKAGE-A)** issued earlier along with NIT. Bidder shall quote as per this revised Volume-III A, Rev-01 only (Applicable for Package-A). Bidder is also requested to submit a declaration in techno-commercial offer that they have submitted their price bid for Package-A as per **REVISED price schedule** format (**VOLUME-III A- TOTAL PRICE, REV-01**) issued **alongwith this TCN-07**
- 2.0 Clarification to Bidder's Queries vide Annexure-A to TCN-07.
- 3.0 Amendment-01 to BHEL Doc No PE-TS-421-553-A001 issued **alongwith this TCN-07**
- 4.0 Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 5.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

DY MGR (SCT)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

TENDER NO – PSER:SCT:KLN-M1866:17	
TCN-01	PAGE 2 OF 2

Encl : As above.

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh. PACKAGE-B : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Ventilation System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh	
Ref	1.0	Tender no PSER:SCT:KLN-M1876:18
	2.0	BHEL's NIT, vide reference no vide reference no PSER:SCT:KLN-M1876: 6472Date: 06-02-2018
	3.0	BHEL's TCN-01, vide reference PSER:SCT:KLN-M1876:TCN-01, dated 27-02-2018
	4.0	BHEL's TCN-02, vide reference PSER:SCT:KLN-M1876:TCN-02, dated 09-03-2018
	5.0	BHEL's TCN-03, vide reference PSER:SCT:KLN-M1876:TCN-03, dated 13-03-2018
	6.0	BHEL's TCN-04, vide reference PSER:SCT:KLN-M1876:TCN-04, dated 14-03-2018
	7.0	BHEL's TCN-05, vide reference PSER:SCT:KLN-M1876:TCN-05, dated 19-03-2018
	8.0	BHEL's TCN-06, vide reference PSER:SCT:KLN-M1876:TCN-06, dated 26-03-2018
	9.0	BHEL's TCN-07, vide reference PSER:SCT:KLN-M1876:TCN-06, dated 29-03-2018
	10.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

ANNEXURE-A TO TCN-07

PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh
 PACKAGE-B: Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Ventilation System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.

TENDER NO -PSER:SCT:KLN-M1876:18

Sl No.	REFERENCE CLAUSE OF TENDER	EXISTING PROVISION	BIDDER'S QUERY	BHEL'CLARIFICATION
1	VOL-III-A-R00,PRICE SCHEDULE SCH-11 -GUARANTEED POWER CONSUMPTION	AC PLANT FOR MAIN CONTROL ROOM AREAS AND SERVICE BUILDING	Service Bulding equipment details are not appearing in GPC Sheet. Kindly clarify that we have to consider GPC for service building also or not. Kindly also clarify about consideration of Admin building Power consumption,since the same is not appearing in GPC .	PI refer revised GPC and follow specification



**MAITREE BANGLADESH TPS
2 X 660 MW TPS
AIR-CONDITIONING SYSTEM**

BHEL Doc No: PE-TS-421-553-A001

Amendment 01

DATE 23.03.2018

SHEET Page 1 of 1

A. AMENDMENT TO EXISTING CLAUSES IN SCHEDULE 11 GPC

S.No.	Description / Page No.	Clause No.	Existing Description	To Be Read As / Remarks
1	VOLUMNE – IIIA, SCH-11 - GUARANTEED POWER CONSUMPTION, OF PRICE SCHEDULE	1.0	AC PLANT FOR MAIN CONTROL ROOM AREAS AND SERVICE BUILDING	AC PLANT FOR MAIN CONTROL ROOM AREAS BUILDING

ANNEXURE -1
Revision 1 of Schedule-11 GPC.

**VOLUME-III
PRICE SCHEDULE, REV-01**

PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.

TENDER NO PSER:SCT:KLN-M1876:18

SL NO	PREAMBLE
1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully before filling in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender and other tender sections as applicable and shall have precedence over any contrary statement mentioned anywhere in this document.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with the tender are only preliminary and for tender purposes and giving some idea of the work involved. The work is to be executed as per drawings & documents, which shall be furnished during execution.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within fifteen percent ($\pm 15\%$) of the awarded price as per LOI.
6	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution and approval to be obtained before execution of further quantity for this item.
7	In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based contract, possibility of variation of quantity/ addition/deletion of items can not be ruled out. Under such circumstances, after execution of work, if it is observed that standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill. This condition shall not be applicable where the tender is finalised through Reverse Auction.
8	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against unit rate items and/ or other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order.
9	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing, clearing of old structures and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same. However, if separate rate for such item is available in the rate
10	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
11	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.
12	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
13	No splitting of the job is envisaged. Decision of BHEL in this regard shall be final and binding to the bidders.
14	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them. BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified/ altered by them. Also putting any comments instead of rates/price in the designated column of the rate schedule shall make the offer liable for rejection.
15	Bidders to note that for Civil &/Structural packages, against a particular item against a ST No. appearing in more than one schedule of the BOQ, same rate must be quoted in all schedules for that particular items with same descriptions. If by error, different rates are quoted in different schedules for same ST No. (i.e. item with same description), then the higher of the rates shall be considered for evaluation but awarding shall be done with the lower rate, if the bidder becomes L-1."
16	For Lumpsum Service Contract: The items/components indicated in the tender is indicative and may vary to any extent. No compensation shall be payable in case of any variation in the items/components listed in the bill of quantities if the executed weight remains within the variation limit. However, in case of deletion of any item or
17	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
18	In case of tender for Civil and/or Structural works, if the Non-schedule items are not quoted by the bidder, it will be treated at par with rate of corresponding item of
19	No interest, whatsoever, shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder/contractor.
20	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items
21	Bidder's Total price will be shall be considered for evaluation unless stated otherwise.
22	In case of BOP packages, if Bidder does not quote/indicate the price for freight charges against indicated rate schedule, the same shall be considered as 2% of basic price and adjusted with the total quoted price against each item keeping the total quoted price unaltered.

VOLUME-III A		
PRICE SCHEDULE, REV-01		
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.		
TENDER NO - PSER:SCT:KLN-M1876:18		
SCH-1 - TOTAL PRICE - AIR CONDITIONING SYSTEM (PKG -A)		
SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	TOTAL QUOTED PRICE (Rs)
1.0	Total price for SUPPLY PART, SERVICES PART & MANDATORY SPARES comprising of design (i.e. Preparation and submission of drawing/ documents including " As Built " drawings and O&M Manuals) , engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles (as applicable), fill of lubricants & consumables, mandatory spares alongwith spares for erection, startup and commissioning as required, forwarding, proper packing (sea-worthy packing and in containerized packing for electronic & Instrumentation and any fragial items), shipment and delivery at site, unloading, handling, transportation & storage at site, in site transportation, assembly, minor civil works, erection & commissioning, trial run at site, Operation and maintenance, preperation of drawings in 3D (if applicable) and carrying out performance guarantee /Functional / Demonstration tests at site (As applicable), training of customer/ client O&M staff (if applicable), carrying out Performance and Guarantee tests at site & final painting of complete system & final handing over to end customer in flawless condition for project and package specified above complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order for Air Conditioning System .	
NOTE		
1.0	Bidder to note that total price at sl no 1.0 above shall be considered for evaluation & awarding for this package. As such total price at sl no 1.0 should be complete in all respect for the full scope defined and considering all terms and conditions.	
2.0	Bidder to note that percentage break-up of above total price into supply part, service part are frozen and indicated in SCH-2. Based on this broad break-up, item/ system-wise percentage break-up of supply part & service part are frozen & indicated in subsequent schedules. Based on this break-up and further break-up in subsequent schedules, separate orders will be placed for (i) Main Supply, (ii) Main Service, (iii) Operation & Maintenance, & (iv) Mandatory Spares .	
3.0	For supply part, bidder shall furnish break-up of broad allocated item/ system-wise prices in the respective schedule in the following manner:	
3.1	SCH-3 - Main supply price break-up for various items/ systems as per prescribed format.	
3.2	SCH-4 - Start-up & commissioning spares price break-up, indicating items-wise break-up corresponding to allocated percentage of SCH-3..	
3.3	SCH-5 - Special tools & tackles for maintenance price break-up, indicating items-wise break-up corresponding to allocated percentage of SCH-3..	
3.4	SCH-6 - Mandatory Spares price break-up, indicating items-wise break-up corresponding to allocated percentage of SCH-2.	
4.0	SCH-7 - Main service price break-up for various items/ systems as per prescribed format.	
5.0	SCH-8 - Operation & Maintenance price break-up for various items/ systems as per prescribed format.	

VOLUME-III PRICE SCHEDULE, REV-01	
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.	
TENDER NO - PSER:SCT:KLN-M1876:18	
SCH-1 - TOTAL PRICE - AIR CONDITIONING SYSTEM (PKG -A)	
6.0	SCH-9-Indian Content as per prescribed format.
7.0	SCH-10 - Bidder shall provide list of Recommended spares. However, price of the same shall not be included at sl. No. 1.0 above and it shall not be considered for evaluation purpose.
8.0	If the bidder fail to furnish break-up as per above or furnish break-up in variance to above, BHEL reserve the right to fill-in or amend break-up, as applicable, as per BHEL's discretion in line with broad frozen break-up. Decision of BHEL in this regard shall be final & binding on bidder.
9.0	Based on mode of finalisation of contract (Either through Reverse Auction or price bid opening, followed by negotiation, if any, while absolute price may change, percentage allocation as per the price schedule shall remain unchanged.
10.0	Bidder shall furnish item-wise rate/ price for special tools & tackles for maintenance as per specified list of technical specification or separately furnish item-wise rate/ price break-up gainst allocated percentage in the price scehdule. In case, bidder do not furnish any rate/ price or indicate `NA' against any item due to non-applicability as per bidder's design, etc, they have to supply such items, if found required on detail engineering or due to any other reason at a later date as per direction of BHEL/ customer.
11.0	Bidder shall furnish item-wise rate/ price for erection & commissioning spares as per specified list of technical specification or separately furnish item-wise rate/ price break-up against allocated percentage in the price scehdule. In case, bidder do not furnish any rate/ price or indicate `NA' against any item, they have to supply such items, if required on detail engineering or due to any other reason at a later date as per direction of BHEL/ customer.
12.0	In case bidder do not indicate price component or indicate `NA', etc in the relevant schedule for any other items component required for completion of package, if applicable, they have to supply & execute such items, if required on detail engineering for completion of the package, at no extra cost to BHEL.
13.0	Quantity of variable items (marked *), if included, is likely to vary during detailed design & engineering stage, mainly due to change in layout/ dimension, etc. The unit rates quoted & accepted by BHEL for these items shall be considered and no separate unit rates shall be quoted. Unit rates shall be valid throughout the contract period, including extension.
14.0	Unit rate items, if included, shall not be considered for evaluation. The rates for the Unit rate items shall be applied for addition/ deletion of scope and rates shall be valid throughout the contract period, including extension.
15.0	Other optional items, if included, shall not be considered for evaluation.
16.0	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against variable items, Unit Rate items other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order.
17.0	BHEL shall issue requisite document, if required, for imported items, if included, limited to the CIF values furnished by bidder in the relevant schedule.
18.0	Estimated power consumption (EPC), if included, for the system (For working drives only) has been specified in relevant schedule.
19.0	Bidder's quoted GPC at the relevant schedule shall be demonstrated by successful bidder during performance testing at works/ site.
20.0	Any item as per scope of work, if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.
21.0	Bidder must submit prices in the Pro Forma duly filled in signed and stamped on every page without any ambiguity. The price shall be written against each item. Term such as "refer covering letter" etc. are not acceptable. Extra sheet may be attached if the space provided is not sufficient
22.0	Price format shall not be changed by bidder in any case, since it may lead to cancellation of bidder's offer.
23.0	CHINESE CODES AND STANDARD ARE NOT ALLOWED. INDIAN CODES ALLOWED SUBJECT TO COMPLIANCE OF CLAUSE NO. 9 (CODES AND STANDARD) OF SECTION-IA OF TECHNICAL SPECIFICATION.

VOLUME-III A			
PRICE SCHEDULE, REV-01			
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.			
TENDER NO - PSER:SCT:KLN-M1876:18			
SCH-2 - TOTAL PRICE BREAK-UP - AIR CONDITIONING SYSTEM (PKG -A)			
SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	ALLOCATION OF TOTAL PRICE (IN PERCENT)	ALLOCATION OF TOTAL PRICE (IN INR)
(1)	(2)	(3)	(4)
BREAK-UP OF TOTAL PRICE, SL NO 1.0 OF SCH-1			
1.0	MAIN SUPPLY Total lumpsum price on FOR site basis for supply part for complete design, engineering, manufacturing, inspection & testing at manufacturers works, painting at manufacturers' works, supply in duly packed condition (sea-worthy packing and in containerized packing for electronic & Instrumentation and any fragial items), delivery at site, etc complete with all accessories including supply of special tools & tackles, commissioning spares for the total scope defined in technical specification and terms & conditions of tender taking into account of all clarifications/ modifications.	77.50%	
2.0	MAIN SERVICE Total lumpsum price for service part receipt at site, handling, storage, structural work, erection, painting, testing, commissioning, trial run, PG test, handing over etc complete for the total scope defined in technical specification and terms & conditions of tender taking into account of all clarifications/ modifications.	18.50%	
3.0	OPERATION AND MAINTENANCE Total lumpsum price for operation and maintenance at site, as per specification and terms & conditions of tender taking into account of all clarifications/ modifications.	1.50%	
4.0	MANDATORY SPARES Total lumpsum price on FOR site basis for mandatory spares for complete design, engineering, manufacturing, inspection & testing at manufacturers works, painting at manufacturers' works, supply in duly packed condition, delivery at site, etc as per scope defined in technical specification and terms & conditions of tender taking into account of all clarifications/ modifications.	2.50%	
TOTAL PRICE (MAIN SUPPLY+ MAIN SERVICE + O&M + MANDATORY SPARES)		100.00%	
NOTE			
1.0	Bidder to note broad percentage break-up prices at sl no 1.0 in SCH-1 as per above.		
2.0	Bidder to note based on above break-up and together with break-up in subsequent schedules, separate orders will be placed for (i) Main supply (ii) Main service, (iii) Operation & Maintenance, & (iv) Mandatory Spares.		

VOLUME-III PRICE SCHEDULE, REV-01						
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18						
SCH-3 - MAIN SUPPLY PRICE BREAK-UP						
SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY	QUOTED PRICE (IN INR)			AMOUNT
			UNIT BASIC PRICE	OTHER INCIDENTAL UNIT	TOTAL UNIT PRICE	
(1)	(2)	(3)	(4)	(5)	(6) = (4)+(5)	(7) = (6)*(3)
BREAK-UP OF MAIN SUPPLY PRICE, SL NO 1.0 OF SCH-2						
1.1	AC PLANT -1 (Main control room areas in power house building)					
1.1.1	AIR COOLED SCREW CHILLERS package, each of actual 175 TR capacity consisting of Screw refrigerant compressor complete with motors, control panel, Redundant micro processor panel as per specification, multi drive set, controls and interlocks other accessories as specified, air cooled condenser of matching capacity, shell & lube type water chiller & other accessories, as specified. (Refrigerant shall be R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package as specified.)	3	NO			
1.1.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil (coil shall be same for cooling and heating), centrifugal blower, TEFC sq cage induction motor, VVFD drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load of control room areas at +17.00 M of power house building. S.P minimum 125mm.	3	NO			
1.1.3	FINE FILTERS in Common discharge plenum for AHUs at 24.0 M level, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of fine filters.	1	LOT			
1.1.4	HEPA FILTERS in discharge for AHUs at 24.0 M level, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of HEPA filters.	1	LOT			
1.1.5	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating (coil shall be same for cooling and heating), centrifugal blower, TEFC sq cage induction motor, VVFD drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load of control room areas at +8.5.00 M of power house building. S.P minimum 125mm.	2	NO			
1.1.6	FINE FILTERS in Common discharge plenum for AHUs at 8.5 M level, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of fine filters	1	LOT			
1.1.7	HEPA FILTERS in discharge for AHUs at 8.5 M level, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of HEPA filters	1	LOT			
1.1.8	CENTRIFUGAL PUMPS for chilled water recirculation complete with TEFC motor & all accessories as specified. Pump shall be 2x100% or 3x50% configuration, to be decided during detailed engineering by BHEL.	1	LOT			
1.1.9	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line. level gauge shall be provided.	1	NO			
1.1.10	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line. level gauge shall be provided.	1	NO			
1.1.11	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges, air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications.)	1	LOT			
1.1.12	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT			
1.1.13	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification	1	LOT			
1.1.14	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT			
1.1.15	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc.	1	LOT			
1.1.16	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc. including necessary control panel form hook up with main DDCMS as per specifications	1	LOT			
1.1.17	Electrical Hot Water Generator of suitable Capacity to meet the requirement. Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, step controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (Two 1sh)	2	Nos			
1.2	AC plant-2 & 3 (ESP Control Room Building) for Unit-1&2					
1.2.1	DX type, air cooled condensing unit of 30TR (ACTUAL) capacity. The refrigerant compressor shall be Srew / Scroll, Open / Semi-hermetic type suitable for Refrigerant R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package (for open type compressor only), Suction and discharge valves, capacity control system, expansion valve, crank case heater etc. A control panel shall be provided to house all gauges and controls. The panel shall contain all necessary terminal strips to facilitate external wiring. The unit shall be complete with expansion valve, all necessary fittings, Redundancy micro processor panel as per specification, accessories, insulated refrigerant piping to and from AHUs. foundation bolts, nuts, washers etc complete in all respect.	4	NO			
1.2.2	Sheet metal cabinet type air handling units (double skin as per specification) The draw through horizontal AHUs shall comprise of , Dampers, Filters (pre filter and fine filters with DP gauge across filters), DX- cooling coil Fan section with fan & TEFC sq cage induction motor, VVFD, drive set, face and bypass damper with modulating motor, condensate drain pan, thermostatic controls, control panel and other accessories to meet the AC load of ESP control room area. S.P minimum 60mm.	4	NO			
1.2.3	MONSOON REHEATING / WINTER HEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT			
1.2.4	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc	1	LOT			
1.2.5	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT			
1.2.6	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc.	1	LOT			
1.2.7	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc. including necessary control panel form hook up with main DDCMS as per specifications	1	LOT			

VOLUME-III PRICE SCHEDULE, REV-01						
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18						
SCH-3 - MAIN SUPPLY PRICE BREAK-UP						
1.3	AC plant-4 (Service Building)					
1.3.1	AIR COOLED SCREW CHILLERS package, each of actual 250 TR capacity consisting of Screw refrigerant compressor complete with motors, control panel, Redundancy micro processor panel as per specification, multi drive set, controls and interlocks other accessories as specified, air cooled condenser of matching capacity, shell & tube type water chiller & other accessories, as specified. (Refrigerant shall be R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package as specified.)	2	NO			
1.3.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil (coil shall be same for cooling and heating), centrifugal blower, TEFC sq cage induction motor, VVFD drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load requirement of Service Building , S.P minimum 60mm.	10	NO			
1.3.3	FINE FILTERS in Common discharge plenum for AHUs of service building, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of fine filters	1	LOT			
1.3.4	CENTRIFUGAL PRIMARY PUMPS for chilled water recirculation complete with TEFC motor & all accessories as specified.	2	NO			
1.3.5	CENTRIFUGAL SECONDARY PUMPS for chilled water recirculation complete with TEFC motor & all accessories as specified.	2	NO			
1.3.6	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided.	1	NO			
1.3.7	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided.	1	NO			
1.3.8	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges, air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications.)	1	LOT			
1.3.9	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT			
1.3.10	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification.	1	LOT			
1.3.11	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT			
1.3.12	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc.	1	LOT			
1.3.13	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc. including necessary control panel form hook up with main DDCMS as per specifications	1	LOT			
1.3.14	Electrical Hot Water Generator of suitable Capacity to meet the requirement. Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, stop controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (1w+1sh)	2	NO			
1.4	AC plant-5 (Administrative Building)					
1.4.1	AIR COOLED SCREW CHILLERS package, each of actual 225 TR capacity consisting of Screw refrigerant compressor complete with motors, control panel, Redundancy micro processor panel as per specification, multi drive set, controls and interlocks other accessories as specified, air cooled condenser of matching capacity, shell & tube type water chiller & other accessories, as specified. (Refrigerant shall be R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package as specified.)	2	NO			
1.4.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil (coil shall be same for cooling and heating), centrifugal blower, TEFC sq cage induction motor, VVFD drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load requirement of Administrative Building , S.P minimum 60mm.	8	NO			
1.4.3	FINE FILTERS in Common discharge plenum for AHUs of service building, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of fine filters	1	LOT			
1.4.4	CENTRIFUGAL PUMPS PRIMARY for chilled water recirculation complete with TEFC motor & all accessories as specified.	2	NO			
1.4.5	CENTRIFUGAL PUMPS SECONDARY for chilled water recirculation complete with TEFC motor & all accessories as specified.	2	NO			
1.4.6	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided.	1	NO			
1.4.7	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided.	1	NO			
1.4.8	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges, air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications.)	1	LOT			
1.4.9	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT			
1.4.10	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification.	1	LOT			
1.4.11	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT			
1.4.12	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc.	1	LOT			
1.4.13	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc. including necessary control panel form hook up with main DDCMS as per specifications	1	LOT			

VOLUME-III PRICE SCHEDULE, REV-01						
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18						
SCH-3 - MAIN SUPPLY PRICE BREAK-UP						
1.4.14	Electrical Hot Water Generator of suitable Capacity to meet the requirement- Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, step controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (1+1+1sh)	2	NO*			
1.5	AC plant-6 (Auditorium Building)					
1.5.1	DX type, air cooled condensing unit of 40TR (ACTUAL) capacity. The refrigerant compressor shall be Srew / Scroll, Open / Semi-hermetic type suitable for Refrigerant R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package (for open type compressor only), Suction and discharge valves, capacity control system, expansion valve, crank case heater etc. A control panel shall be provided to house all gauges and controls. The panel shall contain all necessary terminal strips to facilitate external wiring. The unit shall be complete with expansion valve, all necessary fittings, Redundancy micro processor panel as per specification, accessories, insulated refrigerant piping to and from AHUs, foundation bolts, nuts, washers etc complete in all respect.	2	NO			
1.5.2	Sheet metal cabinet type air handling units (double skin as per specification) The draw through horizontal AHUs shall comprise of , Dampers, Filters (pre filter and fine filters with DP gauge across filters), DX- cooling coil Fan section with fan & TEFC sq cage induction motor, VVVF, drive set, face and bypass damper with modulating motor, condensate drain pan, thermostatic controls and other accessories to meet the AC load of Water system control room area. S.P minimum 60mm.	2	NO			
1.5.3	MONSOON REHEATING / WINTER HEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT			
1.5.4	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification	1	LOT			
1.5.5	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT			
1.5.6	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc.	1	LOT			
1.5.7	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc. including necessary control panel form hook up with main DDCMS as per specifications	1	LOT			
1.6	Common items for all AC Plants of AC system					
1.6.1	FAN COIL UNIT consisting of chilled water cooling coil, blower, motor, drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls and other accessories					
1.6.1.1	3.0TR	2	NO*			
1.6.1.2	2.0TR	2	NO*			
1.6.1.3	1.5TR	2	NO*			
1.6.2	Fire damper.					
1.6.2.1	Fire damper with auto resetting, limit switches, indication lamps etc.	50	SOM*			
1.6.2.2	Motorized actuator with single phase power supply for the above fire damper.	60	NO*			
1.6.2.3	Fusible link type fire damper.	10	NO*			
1.6.3	Grills / Diffusers / Volume control dampers etc for all the AC Plants					
1.6.3.1	SUPPLY AIR DIFFUSERS / GRILLS with VCD (Extruded Aluminium powder coated) complete with fixing frames, nuts, bolts, gaskets, washers etc	150	SQM*			
1.6.3.2	RETURN AIR DIFFUSERS / GRILLS without VCD (Extruded Aluminium powder coated) complete with fixing frames, nuts, bolts, gaskets, washers etc	200	SQM*			
1.6.3.3	VOLUME CONTROL DAMPERS (Manual) in GI construction as per specifications for supply / return ducts complete with fixing arrangement.	15	SOM*			
1.6.3.4	VOLUME CONTROL DAMPERS (Motorized) in GI construction as per specifications for supply / return ducts complete with fixing arrangement.	15	SOM*			
1.7	BTU Meter	10	NO*			
1.8	VARIABLE AIR VOLUME (VAV) BOXES complete with damper, differential pressure sensor, motorized damper, actuator, motorized aluminium construction damper with actuator, cooling / heating thermostat with ON/OFF control, differential pressure sensor, 24 Volt power supply unit for each VAV box, controller capable of accepting analogue signal from Co2 Sensor/Thermostat and output to damper actuator. Distribution board floor wise of service, administrative canteen and auditorium building, VAV boxes shall be suitable for following air flow capacities.					
1.8.1	50 -499CFM	4	NO*			
1.8.2	500 -590CFM	4	NO*			
1.8.3	600-790 CFM	4	NO*			
1.8.4	800 -990CFM	4	NO*			
1.8.5	1000 -1100CFM	4	NO*			
1.8.6	1101 -1500CFM	4	NO*			
1.8.7	1501 -2000CFM	4	NO*			
1.8.8	2001 -3000CFM	4	NO*			
1.8.9	3001 -4000CFM	4	NO*			
1.9	DX type, air cooled condensing unit of 30TR (ACTUAL) capacity. The refrigerant compressor shall be Srew / Scroll, Open / Semi-hermetic type suitable for Refrigerant R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package (for open type compressor only), Suction and discharge valves, capacity control system, expansion valve, crank case heater etc. A control panel shall be provided to house all gauges and controls. The panel shall contain all necessary terminal strips to facilitate external wiring. The unit shall be complete with expansion valve, all necessary fittings, accessories, insulated refrigerant piping to and from AHUs, foundation bolts, nuts, washers etc complete in all respect.	1	NO*			
1.10	Sheet metal cabinet type air handling units (double skin as per specification) Suitable capacity of 30TR DX condensing unit. The draw through horizontal AHUs shall comprise of , Dampers, Filters (pre filter and fine filters with DP gauge across filters), DX- cooling coil Fan section with fan & TEFC sq cage induction motor, VVVF, drive set, face and bypass damper with modulating motor, condensate drain pan, Heater and Humidification, Instruments, thermostatic controls and other accessories. S.P minimum 60mm.	1	NO*			
1.11	DX type, air cooled condensing unit of 60TR (ACTUAL) capacity. The refrigerant compressor shall be Srew / Scroll, Open / Semi-hermetic type suitable for Refrigerant R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package (for open type compressor only), Suction and discharge valves, capacity control system, expansion valve, crank case heater etc. A control panel shall be provided to house all gauges and controls. The panel shall contain all necessary terminal strips to facilitate external wiring. The unit shall be complete with expansion valve, all necessary fittings, accessories, insulated refrigerant piping to and from AHUs, foundation bolts, nuts, washers etc complete in all respect.	2	NO*			

VOLUME-III PRICE SCHEDULE, REV-01 PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18 SCH-3 - MAIN SUPPLY PRICE BREAK-UP						
1.12	Sheet metal cabinet type air handling units (double skin as per specification) Suitable capacity of 60TR DX condensing unit. The draw through horizontal AHUs shall comprise of , Dampers, Filters (pre filter and fine filters with DP gauge across filters), DX- cooling coil Fan section with fan & TEFC sq cage induction motor, VVVF, drive set, face and bypass damper with modulating motor, condensate drain pan, Heater and Humidification, Instruments, thermostatic controls and other accessories. S.P minimum 60mm.	2	NO*			
1.13	MS medium class INSULATED DRAIN WATER PIPING from various equipment like AHUs (including equalising line), FCUs, chilled water pumps etc upto nearest available drain point with necessary fittings like tees, reducers, expanders, elbows, flanges, valves with flanges, P trap etc as per specifications.					
1.13.1	50mm	300	Rmt*			
1.13.2	40mm	300	Rmt*			
1.14	AC System for Aux. building for unit#1 & 2)					
1.14.1	Air Cooled PAC-Unit complete with all accessories as specified The package unit shall be complete with all accessories like duct hetaers, humidifier, filters, acoustic insulation of duct for 5m from PU, drain piping with insulation upto nearest drain, required instrumentation etc.					
1.14.1.1	10 TR net capacity	1	NO*			
1.14.1.2	15 TR net capacity	1	NO*			
1.14.2	Air Cooled Precision AC-Unit complete with all accessories as specified The package unit shall be complete with all accessories like duct hetaers, humidifier, filters, acoustic insulation of duct for 5m from PU, drain piping with insulation upto nearest drain, required instrumentation etc.					
1.14.2.1	10 TR net capacity	1	NO*			
1.14.2.2	15 TR net capacity	1	NO*			
1.15	Air Cooled Scroll Chiller					
1.5.1	Air Cooled Scroll Chiller actual 10TR capacity					
1.15.1.1	Air Cooled Scroll Chiller actual 10TR capacity consisting scroll refrigerant compressor complete with motors, control panel, multi driveset, control and interlocks and air cooled condenser of matching capacity, shell & tube type water chiller & other accessories	1	NO*			
1.15.1.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil, centrifugal blower, TEFC sq cage induction motor, VVVF drive set, filters (pre filter and fine), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load. S.P minimum 60mm.	1	NO*			
1.15.1.3	Chilled water Pump of suitable capacity	2	NO*			
1.15.1.4	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided.	1	NO*			
1.15.1.5	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided.	1	NO*			
1.15.1.6	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges, air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications).	1	LOT*			
1.15.1.7	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT*			
1.15.1.8	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification	1	LOT*			
1.15.1.9	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT*			
1.15.1.10	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc	1	LOT*			
1.15.1.11	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc, including necessary control panel hook up with main DDCMS as per specifications	1	LOT*			
1.15.1.12	Electrical Hot Water Generator of suitable Capacity to meet the requirement- Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, step controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (1+1sh)	2	Nos*			
1.15.2	Air Cooled Scroll Chiller actual 20TR capacity					
1.15.2.1	Air Cooled Scroll Chiller actual 20TR capacity consisting scroll refrigerant compressor complete with motors, control panel, multi driveset, control and interlocks and air cooled condenser of matching capacity, shell & tube type water chiller & other accessories	1	NO*			
1.15.2.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil, centrifugal blower, TEFC sq cage induction motor, VVVF drive set, filters (pre filter and fine), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load. S.P minimum 60mm.	1	NO*			
1.15.2.3	Chilled water Pump of suitable capacity	2	NO*			
1.15.2.4	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided.	1	NO*			
1.15.2.5	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided.	1	NO*			
1.15.2.6	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges, air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications).	1	LOT*			
1.15.2.7	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT*			
1.15.2.8	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification	1	LOT*			

VOLUME-III PRICE SCHEDULE, REV-01						
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18						
SCH-3 - MAIN SUPPLY PRICE BREAK-UP						
1.15.2.9	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT*			
1.15.2.10	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc	1	LOT*			
1.15.2.11	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc, including necessary control panel form hook up with main DDCMS as per specifications	1	LOT*			
1.15.2.12	Electrical Hot Water Generator of suitable Capacity to meet the requirement. Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, step controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (Two-Tsh)	2	Nos*			
1.16	AIR COOLED SPLIT UNITS consisting of outdoor unit (having compressor condenser coils with fan and motor), indoor unit (having evaporator coil, filter, fan with motor), interconnecting refrigerant piping as per site requirement & fittings with insulation, cordless remote, electrical power cord upto the nearest available point along with Isolator / MCB, fixing frame for indoor and outdoor unit, Stabilizer etc.					
1.16.1	5.0 TR capacity (ductable type, 415 V, 3 phase with isolation switch).	2	NO*			
1.16.2	2.0 TR capacity (non-ductable type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	80	NO*			
1.16.3	1.5 TR capacity (non-ductable type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	80	NO*			
1.16.4	1.5 TR capacity (Cassette type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	10	NO*			
1.16.5	2.0 TR capacity (Cassette type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	10	NO*			
1.16.6	3.0 TR capacity (Cassette type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	10	NO*			
1.17	Manually operated, platform trolley of 1 Ton capacity with base area 2m x 1.5m	6	NO*			
1.18	Air Curtain					
1.18.1	For Minimum door height 3M and width 900MM	4	NO*			
1.18.2	For Minimum door height 3M and width 1200MM	4	NO*			
1.18.3	For Minimum door height 3M and width 1800MM	4	NO*			
1.18.4	For Minimum door height 3M and width 2100MM	4	NO*			
1.19	Handling Arrangement for AC Equipments					
1.19.1	3T Electric Hoist arrangement for AC Plant as per specification	1	NO*			
1.19.2	2T Chain Pulley Block arrangement for AC Plant/ equipments as per specification	1	NO*			
1.19.3	1T Chain Pulley Block arrangement for AC Plant/ equipments as per specification	16	NO*			
1.20	Accoutic Insulation of walls of AHU/PU room as per Specification, Sound baffles, attenuators and Vibration eliminators	2000	SOM*			
1.21	Total price for Start-up and commissioning spares. (Bidder shall submit item-wise break-up in techno-commercial offer as well as in price offer)	1	LOT			
1.22	Total price for maintenance tools & tackles. (Bidder shall submit item-wise break-up in techno-commercial offer as well as in price offer)	1	LOT			
1.23	Electrical items like Junction box for control & instrumentation cable, Any special type of cable like compensating, co-axial, prefab, MICC, optical fibre, 100/ 50 mm cable trays/ Conduits/ Galvanised steel cable troughs for local cabling, Cable glands, lugs and bimetallic strip for equipment supplied by Vendor, Conduit and conduit accessories for cabling between equipment supplied by vendor, LT Motors with base plate and foundation hardware, etc., Details as per electrical specification and scope.	1	LOT			
1.24	Any other item required for Service Building, Administrative Building, Auditorium and Canteen Building to make these buildings Green Building compliant to minimum LEEDs GOLD rating.	1	LOT			
1.25	Any other item not indicated above, but required to make the system complete in all respects.	1	LOT			
TOTAL AMOUNT-SUPPLY						
NOTE						
1.0	While break-up of main supply price (77.5%) w.r.t. total price is frozen in SCH-2. Further break-up of main supply price into various supply components is to be provided by bidder as per above SCH-3.					
2.0	Other incidental charges shall include custom clearance, port handling, freights, etc. charges					
3.0	Bidder has to furnish detail break-up of price of individual item as per above prescribed format.					
4.0	Total amount shall correspond to sl no 1.0 of SCH-2.					
5.0	Any item/quantity not specifically indicated in this break up but required as per system requirement, shall be supplied by vendor without any additional financial implication to BHEL.					
6.0	The bidder shall furnish unit rates for variable item marked with(*) (e.g supply grilles (with and without VCD), fire damper for all the AC Plants, Package AC, Split AC Units, FCUs etc) for necessary adjustment (plus or minus) variation during detailed engg. stage. The unit rates quoted above shall be considered and no separate unit rates shall be quoted. Unit rates shall be valid throughout the contract. Final qty. shall be paid as per actual measurement at site for supply as well as erection for all the variable items.					

VOLUME-III PRICE SCHEDULE, REV-01						
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18						
SCH-4 - START-UP & COMMISSIONING SPARES PRICE BREAK-UP						
SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY	QUOTED COMPONENT OF ALLOCATION (IN INR)			
			UNIT BASIC PRICE	OTHER INCIDENTAL UNIT CHARGES	TOTAL UNIT PRICE	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6) = (4)+(5)	(7) = (6)*(3)
BREAK-UP OF S&C SPARES PRICE, SL NO 1.21 OF SCH-3						
1.0						
2.0						
3.0						
TOTAL (S&C SPARES)						
NOTE						
1.0	Bidder may attach separate sheet to furnish detailed item-wise break-up of above items corresponding to quoted price in SCH-3, Sl. No. 1.21.					
2.0	Other incidental charges shall include custom clearance, port handling, freights, etc. charges					

VOLUME-III PRICE SCHEDULE, REV-01						
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18						
SCH-5 - MAINTENANCE TOOLS & TACKLES SUPPLY PRICE BREAK-UP						
SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY	QUOTED COMPONENT OF ALLOCATION (IN INR)			
			UNIT BASIC PRICE	OTHER INCIDENTAL UNIT CHARGES	TOTAL UNIT PRICE	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6) = (4)+(5)	(7) = (6)*(3)
BREAK-UP OF TOOLS & TACKLES FOR MAINTENANCE SUPPLY PRICE, SL NO 1.22 OF SCH-3						
1.0						
2.0						
3.0						
TOTAL (MAINTENANCE TOOLS & TACKLES)						
NOTE						
1.0	Bidder may attach separate sheet to furnish detailed item-wise break-up of above items corresponding to quoted price in SCH 3, Sl. No. 1.22.					
2.0	Other incidental charges shall include custom clearance, port handling, freights, etc. charges					

VOLUME-III PRICE SCHEDULE, REV-01						
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18						
SCH-6 - MANDATORY SPARES						
SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY	QUOTED COMPONENT OF ALLOCATION (IN INR)			
			UNIT BASIC PRICE	OTHER INCIDENTAL UNIT CHARGES	TOTAL UNIT PRICE	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6) = (4)+(5)	(7) = (6)*(3)
BREAK-UP OF MANDATORY SPARES SUPPLY PRICE, SL NO 4.0 OF SCH-2						
1	Screw Compressor Chilling Machine for each type / rating / model(if supplied for the project)					
1.1	Oil filter – O ring	1 Set				
1.2	Refrigerant filter	1 Set				
1.3	Master solenoid valve	1 Set				
1.4	Master solenoid valve coil	1 Set				
2	Air handling unit (for each model)					
2.1	V-belts for AHU Blower	2 Sets				
2.2	AHU Blower bearing	1 Set				
2.3	Blower motor bearing	1 Set				
2.4	Filters at suction and discharge of all AHUs	25% of installed population				
3	Electrical Actuators					
3.1	Actuators	10% or 1 No. of each type, model and rating, whichever is more.				
4	Control & Instrumentation					
4.1	Air-Conditioning System					
4.1.1	Electronic Transmitters					
4.1.1.1	Transmitters of all types and model no. (for the measurement of pressure, differential pressure flow, level, temperature etc.)	5% or 1 Nos. of each make, model and type whichever is more (to be divided to various ranges in proportion to main population)				
4.1.2	Temperature elements					
4.1.2.1	RTD's	5% or 1 No. which ever is more**				
4.1.2.2	Thermo well *(With head assembly, terminal block and nipple)	5% or 1 No. which ever is more**** (to be divided into various insertion lengths in proportion to main population)				
4.1.2.3	All types of Local indicators	5% or 1 Nos. of each make, model and type whichever is more (to be divided to various ranges in proportion to main population of all make, model and type)				

4.1.3	Process Actuated Switch Devises Includes all types of Pressure, differential pressure, flow, temperature, and differential temperature, level switch Devises.	5% or 1 Nos. of each type, class, size and model whichever is more.				
4.1.4	Relative Humidity Sensors	2 Nos.				
4.1.5	Geysterstat	2 Nos.				
4.1.6	Local Humidity / Temperature indicators	2 Nos. each				
4.1.7	Process Connection Piping (for Impulse Piping / Tubing, Sampling Piping / Tubing and Air Supply Piping as Applicable)					
4.1.7.1	Valves	10% or 1 Nos. of each type, class, size and model whichever is more.				
4.1.7.2	2 way, 3way, 5way valve manifolds	10% or 1 Nos. of each type, class, size and model whichever is more.				
4.1.8	Fittings	10% or 1 Nos. of each type, class, size and model whichever is more.				
TOTAL PRICE (MANDATORY SPARES)						
NOTE						
1.0	The above list is to be read in conjunction with description given under Annexure III clause no. B0.3.8.1.					
2.0	Apart from items mentioend above, other additional spares as per clause no. B0.3.8.1 -I (b) Annexure III of List of Mandatory Spares of Specification -necessary to repair , operate , repair / maintain the plant to achieve guranteed avaialbity during warranty period and maintain plant efficiency is included in bidder's scope of supply. No separate cost for the same will be payable by BHEL.					
3.0	Bidder may attach separate sheet to furnish detailed ite-wise break-up of mandatory spares corresponding to allocation in SCH-2, Sl. No. 4.0.					
4.0	Other incidental charges shall include custom clearance, port handling, freights, etc. charges					

**VOLUME-III
PRICE SCHEDULE, REV-01**

PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.

TENDER NO - PSER:SCT:KLN-M1876:18

SCH-7 - MAIN SERVICE PRICE BREAK-UP

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY	QUOTED PRICE (IN INR)	
			UNIT PRICE	AMOUNT
(1)	(2)	(3)	(4)	(5) = (4)*(3)
BREAK-UP OF MAIN SERVICE PRICE, SL NO 2.0 OF SCH-2				
1.1	AC PLANT -1 (Main control room areas in power house building)			
1.1.1	AIR COOLED SCREW CHILLERS package, each of actual 175 TR capacity consisting of Screw refrigerant compressor complete with motors, control panel, Redundant micro processor panel as per specification, multi drive set, controls and interlocks other accessories as specified, air cooled condenser of matching capacity, shell & tube type water chiller & other accessories, as specified.The refrigerant shall be R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package as specified.	3	NO	
1.1.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil (coil shall be same for cooling and heating), centrifugal blower, TEFC sq cage induction motor, VVVF drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load of control room areas at +17.00 M of power house building. S.P minimum 125mm.	3	NO	
1.1.3	FINE FILTERS in Common discharge plenum for AHUs at 24.0 M level, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of fine filters.	1	LOT	
1.1.4	HEPA FILTERS in discharge for AHUs at 24.0 M level, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of HEPA filters.	1	LOT	
1.1.5	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating (coil shall be same for cooling and heating), centrifugal blower, TEFC sq cage induction motor, VVVF drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load of control room areas at +8.5.00 M of power house building. S.P minimum 125mm.	2	NO	

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY		QUOTED PRICE (IN INR)	
				UNIT PRICE	AMOUNT
(1)	(2)	(3)		(4)	(5) = (4)*(3)
1.1.6	FINE FILTERS in Common discharge plenum for AHUs at 8.5 M level, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of fine filters	1	LOT		
1.1.7	HEPA FILTERS in discharge for AHUs at 8.5 M level, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of HEPA filters	1	LOT		
1.1.8	CENTRIFUGAL PUMPS for chilled water recirculation complete with TEFC motor & all accessories as specified.. Pump shall be 2x100% or 3x50% configuration, to be decided during detailed engineering by BHEL.	1	LOT		
1.1.9	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO		
1.1.10	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO		
1.1.11	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges, air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications.).	1	LOT		
1.1.12	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidista/ sensors etc.	1	LOT		
1.1.13	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification	1	LOT		
1.1.14	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT		
1.1.15	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc	1	LOT		
1.1.16	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc, including necessary control panel form hook up with main DDCMIS as per specification	1	LOT		
1.1.17	Electrical Hot Water Generator of suitable Capacity to meet the requirement- Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, step controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (1w+1sb)	2	Nos*		

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY		QUOTED PRICE (IN INR)	
				UNIT PRICE	AMOUNT
(1)	(2)	(3)		(4)	(5) = (4)*(3)
1.2	AC plant-2 & 3 (ESP Control Room Building) for Unit-1&2				
1.2.1	DX type, air cooled condensing unit of 30TR (ACTUAL) capacity. The refrigerant compressor shall be Srew / Scroll, Open / Semi-hermetic type suitable for Refrigerant R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package (for open type compressor only), Suction and discharge valves, capacity control system, expansion valve, crank case heater etc. A control panel shall be provided to house all gauges and controls. The panel shall contain all necessary terminal strips to facilitate external wiring. The unit shall be complete with expansion valve, all necessary fittings, Redundancy micro processer panel as per specification, accessories, insulated refrigerent piping to and from AHUs, foundation bolts, nuts, washers etc complete in all respect.	4	NO		
1.2.2	Sheet metal cabinet type air handling units (double skin as per specification) The draw through horizontal AHUs shall comprise of , Dampers, Filters (pre filter and fine filters with DP gauge across filters), DX- cooling coil Fan section with fan & TEFC sq cage induction motor, VVVF, drive set, face and bypass damper with modulating motor, condensate drain pan, thermostatic controls, control panel and other accessories to meet the AC load of ESP control room area. S.P minimum 60mm.	4	NO		
1.2.3	MONSOON REHEATING / WINTER HEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT		
1.2.4	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc	1	LOT		
1.2.5	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT		
1.2.6	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc	1	LOT		
1.2.7	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc, including necessary control panel form hook up with main DDCMIS as per specification	1	LOT		
1.3	AC plant-4 (Service Building)				
1.3.1	AIR COOLED SCREW CHILLERS package, each of actual 250 TR capacity consisting of Screw refrigerant compressor complete with motors, control panel, Redundancy micro processer panel as per specification, multi drive set, controls and interlocks other accessories as specified, air cooled condenser of matching capacity, shell & tube type water chiller & other accessories, as specified.The refrigerant shall be R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package as specified.	2	NO		
1.3.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil (coil shall be same for cooling and heating), centrifugal blower, TEFC sq cage induction motor, VVVF drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load requirement of Service Building . S.P minimum 60mm.	10	NO		
1.3.3	FINE FILTERS in Common discharge plenum for AHUs of service building, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of fine filters	1	LOT		
1.3.4	CENTRIFUGAL PRIMARY PUMPS for chilled water recirculation complete with TEFC motor & all accessories as specified..	2	NO		

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY		QUOTED PRICE (IN INR)	
				UNIT PRICE	AMOUNT
(1)	(2)	(3)		(4)	(5) = (4)*(3)
1.3.5	CENTRIFUGAL SECONDARY PUMPS for chilled water recirculation complete with TEFC motor & all accessories as specified..	2	NO		
1.3.6	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO		
1.3.7	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO		
1.3.8	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges, air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications.).	1	LOT		
1.3.9	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT		
1.3.10	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification.	1	LOT		
1.3.11	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT		
1.3.12	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc	1	LOT		
1.3.13	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc, including necessary control panel form hook up with main DDCMIS as per specification	1	LOT		
1.3.14	Electrical Hot Water Generator of suitable Capacity to meet the requirement- Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, step controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (1w+1sb)	2	NO*		
1.4	AC plant-5 (Administrative Building)				
1.4.1	AIR COOLED SCREW CHILLERS package, each of actual 225 TR capacity consisting of Screw refrigerant compressor complete with motors, control panel, Redundancy micro processer panel as per specification, multi drive set, controls and interlocks other accessories as specified, air cooled condenser of matching capacity, shell & tube type water chiller & other accessories, as specified.The refrigerant shall be R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package as specified.	2	NO		
1.4.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil (coil shall be same for cooling and heating), centrifugal blower, TEFC sq cage induction motor, VVFD drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load requirement of Administrative Building. S.P minimum 60mm.	8	NO		
1.4.3	FINE FILTERS in Common discharge plenum for AHUs of service building, complete with fixing frame, nuts, bolts, washers and other items required for complete installation of fine filters	1	LOT		
1.4.4	CENTRIFUGAL PUMPS PRIMARY for chilled water recirculation complete with TEFC motor & all accessories as specified..	2	NO		
1.4.5	CENTRIFUGAL PUMPS SECONDARY for chilled water recirculation complete with TEFC motor & all accessories as specified..	2	NO		
1.4.6	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO		

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY		QUOTED PRICE (IN INR)	
				UNIT PRICE	AMOUNT
(1)	(2)	(3)		(4)	(5) = (4)*(3)
1.4.7	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO		
1.4.8	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges, air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications.).	1	LOT		
1.4.9	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT		
1.4.10	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification	1	LOT		
1.4.11	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT		
1.4.12	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc	1	LOT		
1.4.13	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc, including necessary control panel form hook up with main DDCMIS as per specification	1	LOT		
1.4.14	Electrical Hot Water Generator of suitable Capacity to meet the requirement- Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, step controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (1w+1sb)	2	NO*		
1.5 AC plant-6 (Auditorium Building)					
1.5.1	DX type, air cooled condensing unit of 40TR (ACTUAL) capacity. The refrigerant compressor shall be Srew / Scroll, Open / Semi-hermetic type suitable for Refrigerant R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package (for open type compressor only), Suction and discharge valves, capacity control system, expansion valve, crank case heater etc. A control panel shall be provided to house all gauges and controls. The panel shall contain all necessary terminal strips to facilitate external wiring. The unit shall be complete with expansion valve, all necessary fittings, Redundancy micro processer panel as per specification, accessories, insulated refrigerent piping to and from AHUs, foundation bolts, nuts, washers etc complete in all respect	2	NO		
1.5.2	Sheet metal cabinet type air handling units (double skin as per specification) The draw through horizontal AHUs shall comprise of , Dampers, Filters (pre filter and fine filters with DP gauge across filters), DX- cooling coil Fan section with fan & TEFC sq cage induction motor, VVVF, drive set, face and bypass damper with modulating motor, condensate drain pan, thermostatic controls and other accessories to meet the AC load of Water system control room area. S.P minimum 60mm	2	NO		

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY		QUOTED PRICE (IN INR)	
				UNIT PRICE	AMOUNT
(1)	(2)	(3)		(4)	(5) = (4)*(3)
1.5.3	MONSOON REHEATING / WINTER HEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT		
1.5.4	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification	1	LOT		
1.5.5	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT		
1.5.6	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc	1	LOT		
1.5.7	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc, including necessary control panel form hook up with main DDCMIS as per specification	1	LOT		
1.6	Common items for all AC Plants of AC system				
1.6.1	FAN COIL UNIT consisting of chilled water cooling coil, blower, motor, drive set, filters (pre filter), 3 way motorised mixing valve with thermostatic controls and other accessories				
1.6.1.1	3.0TR	2	NO*		
1.6.1.2	2.0TR	2	NO*		
1.6.1.3	1.5TR	2	NO*		
1.6.2	Fire damper.				
1.6.2.1	Fire damper with auto resetting, limit switches, indication lamps etc.	50	SQM*		
1.6.2.2	Motorized actuator with single phase power supply for the above fire damper.	60	NO*		
1.6.2.3	Fusible link type fire damper.	10	NO*		
1.6.3	Grills / Diffusers / Volume control dampers etc for all the AC Plants				
1.6.3.1	SUPPLY AIR DIFFUSERS / GRILLS with VCD (Extruded Aluminium powder coated) complete with fixing frames, nuts, bolts, gaskets, washers etc	150	SQM*		
1.6.3.2	RETURN AIR DIFFUSERS / GRILLS without VCD (Extruded Aluminium powder coated) complete with fixing frames, nuts, bolts, gaskets, washers etc	200	SQM*		
1.6.3.3	VOLUME CONTROL DAMPERS (Manual) in GI construction as per specifications for supply / return ducts complete with fixing arrangement.	15	SQM*		
1.6.3.4	VOLUME CONTROL DAMPERS (Motorized) in GI construction as per specifications for supply / return ducts complete with fixing arrangement.	15	SQM*		
1.7	BTU Meter	10	NO*		
1.8	VARIABLE AIR VOLUME (VAV) BOXES complete with damper, differential pressure sensor, motorized damper, actuator, motorized aluminium construction damper with actuator, cooling / heating thermostat with ON/OFF control, differential pressure sensor, 24 Volt power supply unit for each VAV box, controller capable of accepting analogue signal from Co2 Sensor/Thermostat and output to damper actuator, Distribution board floor wise of service, administrative canteen and auditorium building, VAV boxes shall be suitable for following air flow capacities				
1.8.1	50 -499CFM	4	NO*		
1.8.2	500 -590CFM	4	NO*		
1.8.3	600-790 CFM	4	NO*		
1.8.4	800 -990CFM	4	NO*		
1.8.5	1000 -1100CFM	4	NO*		
1.8.6	1101 -1500CFM	4	NO*		
1.8.7	1501 -2000CFM	4	NO*		
1.8.8	2001 -3000CFM	4	NO*		
1.8.9	3001 -4000CFM	4	NO*		

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY		QUOTED PRICE (IN INR)	
				UNIT PRICE	AMOUNT
(1)	(2)	(3)		(4)	(5) = (4)*(3)
1.9	DX type, air cooled condensing unit of 30TR (ACTUAL) capacity. The refrigerant compressor shall be Srew / Scroll, Open / Semi-hermetic type suitable for Refrigerant R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package (for open type compressor only), Suction and discharge valves, capacity control system, expansion valve, crank case heater etc. A control panel shall be provided to house all gauges and controls. The panel shall contain all necessary terminal strips to facilitate external wiring. The unit shall be complete with expansion valve, all necessary fittings, accessories, insulated refrigerent piping to and from AHUs, foundation bolts, nuts, washers etc complete in all respect.	1	NO*		
1.10	Sheet metal cabinet type air handling units (double skin as per specification) Suitable capacity of 30TR DX condensing unit. The draw through horizontal AHUs shall comprise of , Dampers, Filters (pre filter and fine filters with DP gauge across filters), DX- cooling coil Fan section with fan & TEFC sq cage induction motor, VVVF, drive set, face and bypass damper with modulating motor, condensate drain pan, Heater and Humidification, Instruments, thermostatic controls and other accessories. S.P minimum 60mm.	1	NO*		
1.11	DX type, air cooled condensing unit of 60TR (ACTUAL) capacity. The refrigerant compressor shall be Srew / Scroll, Open / Semi-hermetic type suitable for Refrigerant R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package (for open type compressor only), Suction and discharge valves, capacity control system, expansion valve, crank case heater etc. A control panel shall be provided to house all gauges and controls. The panel shall contain all necessary terminal strips to facilitate external wiring. The unit shall be complete with expansion valve, all necessary fittings, accessories, insulated refrigerent piping to and from AHUs, foundation bolts, nuts, washers etc complete in all respect.	2	NO*		
1.12	Sheet metal cabinet type air handling units (double skin as per specification) Suitable capacity of 60TR DX condensing unit. The draw through horizontal AHUs shall comprise of , Dampers, Filters (pre filter and fine filters with DP gauge across filters), DX- cooling coil Fan section with fan & TEFC sq cage induction motor, VVVF, drive set, face and bypass damper with modulating motor, condensate drain pan, Heater and Humidification, Instruments, thermostatic controls and other accessories. S.P minimum 60mm.	2	NO*		
1.13	MS medium class INSULATED DRAIN WATER PIPING from various equipment like AHUs (including equalising line), FCUs, chilled water pumps etc upto nearest available drain point with necessary fittings like tees, reducers, expanders, elbows, flanges, valves with flanges, P trap etc as per specifications.				
1.13.1	50mm	300	Rml*		
1.13.2	40mm	300	Rml*		
1.14	AC System for Aux. building for unit#1 & 2)				
1.14.1	Air Cooled PAC-Unit complete with all accessories as specified The package unit shall be complete with all accessories like duct hetaers, humidifier, filters, acoustic insulation of duct for 5m from PU, drain piping with insulation upto nearest drain, required instrumentation etc				
1.14.1.1	10 TR net capacity	1	NO*		
1.14.1.2	15 TR net capacity	1	NO*		
1.14.2	Air Cooled Precision AC-Unit complete with all accessories as specified The package unit shall be complete with all accessories like duct hetaers, humidifier, filters, acoustic insulation of duct for 5m from PU, drain piping with insulation upto nearest drain, required instrumentation etc				
1.14.2.1	10 TR net capacity	1	NO*		
1.14.2.2	15 TR net capacity	1	NO*		
1.15	Air Cooled Scroll Chiller				
1.5.1	Air Cooled Scroll Chiller actual 10TR capacity				
1.15.1.1	Air Cooled Scroll Chiller actual 10TR capacity consisting scroll refrigerant compressor complete with motors, control panel, multi driveset, control and interlocks and air cooled condenser of matching capacity, shell & tube type water chiller & other accessorie:	1	NO*		
1.15.1.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil, centrifugal blower, TEFC sq cage induction motor, VVVF drive set, filters (pre filter and fine), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load. S.P minimum 60mm.	1	NO*		
1.15.1.3	Chilled water Pump of suitable capacity	2	NO*		
1.15.1.4	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO*		
1.15.1.5	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO*		
1.15.1.6	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges,air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications.).	1	LOT*		

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY		QUOTED PRICE (IN INR)	
				UNIT PRICE	AMOUNT
(1)	(2)	(3)		(4)	(5) = (4)*(3)
1.15.1.7	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidista/ sensors etc.	1	LOT*		
1.15.1.8	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification	1	LOT*		
1.15.1.9	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT*		
1.15.1.10	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc	1	LOT*		
1.15.1.11	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc, including necessary control panel form hook up with main DDCMIS as per specification	1	LOT*		
1.15.1.12	Electrical Hot Water Generator of suitable Capacity to meet the requirement- Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, step controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (1w+1sb)	2	Nos*		

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY		QUOTED PRICE (IN INR)	
				UNIT PRICE	AMOUNT
(1)	(2)	(3)		(4)	(5) = (4)*(3)
1.15.2	Air Cooled Scroll Chiller actual 20TR capacity				
1.15.2.1	Air Cooled Scroll Chiller actual 20TR capacity consisting scroll refrigerant compressor complete with motors, control panel, multi driveset, control and interlocks and air cooled condenser of matching capacity, shell & tube type water chiller & other accessories:	1	NO*		
1.15.2.2	Sheet metal cabinet type double skin AIR HANDLING UNITS consisting of chilled water cooling/ heating coil, centrifugal blower, TEFC sq cage induction motor, VVFD drive set, filters (pre filter and fine), 3 way motorised mixing valve with thermostatic controls, control panel and other accessories to meet the AC load. S.P minimum 60mm.	1	NO*		
1.15.2.3	Chilled water Pump of suitable capacity	2	NO*		
1.15.2.4	MAKE-UP WATER TANK of capacity 2 Cubm. Tanks shall be FRP. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO*		
1.15.2.5	CHILLED WATER EXPANSION TANK of capacity 1 Cubm. Tanks shall be MS/FRP & insulated as per specification. Make up water line with float valve & backup, quick fill line with ball valve, drain line with ball valve, overflow & vent line, level gauge shall be provided	1	NO*		
1.15.2.6	INSULATED CHILLED WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges, air vents etc as per specifications. This item shall cover the entire chilled water piping for AC plant room, all the AHU rooms and FCUs and the interconnecting pipes between AC plant and AHUs, FCUs of the buildings (pipe, valves, strainers, insulation material with all ancillaries for insulation finishing as per specifications.).	1	LOT*		
1.15.2.7	MONSOON REHEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidista/ sensors etc.	1	LOT*		
1.15.2.8	HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc. as per specification	1	LOT*		
1.15.2.9	ACOUSTIC INSULATION of the first 6m of ducting from AHU outlets with material and finish as per specifications.	1	LOT*		
1.15.2.10	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc	1	LOT*		
1.15.2.11	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meter, Pressure Transmitter, Temperature Transmitter and flow Transmitter etc, including necessary control panel form hook up with main DDCMIS as per specification	1	LOT*		
1.15.2.12	Electrical Hot Water Generator of suitable Capacity to meet the requirement- Electrical Hot Water generator of vertical/ horizontal construction equipped with sufficient number of flanges and electrical immersion heaters. The pressure vessel shall be constructed as per ASME standards and insulated on all sides with 100 mm thick fibreglass. The hot water generator shall be equipped with all automatic and safety controls such as manual reset high temperature water outlet, step controller and recycling relay, ON-OFF switch, thermostats, pilot light, 'ON' status of individual banks, low water cut off all as per manufacturers recommendations. All basic controls and terminal shall be located in an internal control cabinet, factory wired and tested. The hot water generator shall be suitable for 415 ± 10% volts, 50 cycles, 3 phase power supply. (1w+1sb)	2	Nos*		

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY		QUOTED PRICE (IN INR)	
				UNIT PRICE	AMOUNT
(1)	(2)	(3)		(4)	(5) = (4)*(3)
1.16	AIR COOLED SPLIT UNITS consisting of outdoor unit (having compressor condenser coils with fan and motor), indoor unit (having evaporator coil, filter, fan with motor) interconnecting refrigerant piping as per site requirement & fittings with insulation, cordless remote, electrical power cord upto the nearest available point along with isolator / MCB, fixing frame for indoor and outdoor unit, Stabilizer, etc.				
1.16.1	5.0 TR capacity (ductable type, 415 V, 3 phase with isolation switch).	2	NO*		
1.16.2	2.0 TR capacity (non-ductable type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	80	NO*		
1.16.3	1.5 TR capacity (non-ductable type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	80	NO*		
1.16.4	1.5 TR capacity (Casette type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	10	NO*		
1.16.5	2.0 TR capacity (Casette type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	10	NO*		
1.16.6	3.0 TR capacity (Casette type, 240 V, 1 phase isolation switch) with isolation switch, i.e MCB of suitable rating as specified.	10	NO*		
1.17	Manually operated, platform trolley of 1 Ton capacity with base area 2m x 1.5m	6	NO*		
1.18	Air Curtain				
1.18.1	For Minimum door height 3M and width 900MM	4	NO*		
1.18.2	For Minimum door height 3M and width 1200MM	4	NO*		
1.18.3	For Minimum door height 3M and width 1800MM	4	NO*		
1.18.4	For Minimum door height 3M and width 2100MM	4	NO*		
1.19	Handling Arrangement for AC Equipments				
1.19.1	3T Electric Hoist arrangement for AC Plant as per specification	1	NO*		
1.19.2	2T Chain Pulley Block arrangement for AC Plant/ equipments as per specification	1	NO*		
1.19.3	1T Chain Pulley Block arrangement for AC Plant/ equipments as per specification	16	NO*		
1.20	Bidders price for providing full support during FAT of DDCMIS, preparation of control scheme, and commissioning of DDCMIS as per relevant specification.	21	Mandays*		
1.21	Acoustic Insulation of walls of AHU/PU room as per Specification, Sound baffles, attenuators and Vibration eliminators	2000	SQM*		
1.22	Electrical items like Junction box for control & instrumentation cable, Any special type of cable like compensating, co-axial, prefab, MICC, optical fibre, 100/ 50 mm cable trays/ Conduits/ Galvanised steel cable troughs for local cabling, Cable glands, Jugs and bimetallic strip for equipment supplied by Vendor, Conduit and conduit accessories for cabling between equipment supplied by vendor, LT Motors with base plate and foundation hardware, etc., Details as per electrical specification and scope.	1	LOT		
1.23	Any other item required for Service Building, Administrative Building, Auditorium and Canteen Building to make these buildings Green Building compliant to minimum LEEDs GOLD rating.	1	LOT		
1.24	Any other item not indicated above, but required to make the system complete in all respects.	1	LOT		
TOTAL PRICE -SERVICE					
NOTE					
1.0	While break-up of main service price (18.5%) w.r.t. total price is frozen in SCH-2. Further break-up of main service price into various components is to be provided by bidder as per above SCH-7.				
2.0	Bidder has to furnish detail break-up of price of individual item as per above prescribed format.				
3.0	Total amount shall correspond to sl no 2.0 of SCH-2.				
4.0	Any item/quantity not specifically indicated in this break up but required as per system requirement, shall be provided by vendor without any additional financial implication to BHEL.				
5.0	The bidder shall furnish unit rates for variable item marked with(*) (e.g. supply grilles (with and without VCD), fire damper for all the AC Plants, Package AC, Split AC Units, FCUs etc) for necessary adjustment (plus or minus) variation during detailed engg. stage. The unit rates quoted above shall be considered and no separate unit rates shall be quoted. Unit rates shall be valid throughout the contract. Final qty. shall be paid as per actual measurement at site for supply as well as erection for all the variable items.				

**VOLUME-III A
PRICE SCHEDULE, REV-01**

**PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System
for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.**

TENDER NO - PSER:SCT:KLN-M1876:18

SCH-8 - OPERATION & MAINTENANCE (O&M) PRICE BREAK-UP

SL NO	DESCRIPTION OF ITEM	QUANTITY	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
(1)	(2)	(3)	(4)	(5) = (4) * (3)
O&M PRICE BREAK-UP OF 3.0 OF SCH-2.				
1.0	Price for providing OPERATION AND MAINTENANCE SERVICE including manpower, supervision, consumables etc. for operation & maintenance of Air Conditioning System after commissioning for the total scope defined as per technical specification.	12	MONTHS*	
NOTE				
1.0	Bidder shall quote rate per month and amount in this schedule. Total amount shall correspond to sl no 3.0 of SCH-II.			
2.0	There may be increase or decrease in the total number of months as mentioned above. However, payment shall be made as per above quoted rate on per month basis.			

**VOLUME-III
PRICE SCHEDULE, REV-01**

PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.

TENDER NO - PSER:SCT:KLN-M1876:18

SCH-9 INDIAN CONTENT

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	ALL INCLUSIVE PRICE (As per tender)
1.0	Total price of items sourced from India, as required, for total scope defined as per technical specification and terms & conditions of tender taking into account all clarifications, confirmations and agreements till date.	

NOTE

1.0	Bidder's quoted price/ allocations in various schedules shall be inclusive of above total price.
2.0	Bidder shall furnish item-wise break-up of above items.

VOLUME-III PRICE SCHEDULE, REV-01						
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18						
SCH-10 - RECOMMENDED SPARES						
SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	QUANTITY	QUOTED COMPONENT OF ALLOCATION (IN INR)			
			UNIT BASIC PRICE	OTHER INCIDENTAL UNIT CHARGES	TOTAL UNIT PRICE	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6) = (4)+(5)	(7) = (6)*(3)
TOTAL PRICE (RECOMMENDED SPARES)						
NOTE						
1.0	Bidder shall furnish, along with the bid, list of recommended spares for three years of normal operation with their unit rates as per above schedule. These items will be considered as optional items and unit rates will be valid throughout the period of execution of the contract including extension, if any.					
2.0	Bidder shall refer Annexure II (Spares) of Technical specification for details. The recommended spares have to be quoted over and above the mandatory spares.					
3.0	The Recommended spares quoted as per above schedule shall not be considered for evaluation of the tender.					
4.0	Other incidental charges shall include custom clearance, port handling, freights, etc. charges					

VOLUME-III A						
PRICE SCHEDULE, REV-01						
PACKAGE-A : Design, Engineering, Manufacturing, Supply, Erection & Commissioning, etc. of Air Conditioning System for 2x660 MW Maitree Super Thermal Power Project, Rampal, Bangladesh.						
TENDER NO - PSER:SCT:KLN-M1876:18						
SCH-11 - GUARANTEED POWER CONSUMPTION						
SL NO	DESCRIPTION OF EQUIPMENTS	NO OF EQUIPMENTS		TOTAL GUARANTEED POWER CONSUMPTION FOR EACH EQUIPMENT AT MOTOR INPUT TERMINAL AND CONTROL PANEL	DUTY FACTOR	TOTAL (KW)
		WORKING	STANDBY			
(1)	(2)	(3A)	(3B)	(4)	(5)	(6)=(3Ax4x5)
1.0	AC PLANT FOR MAIN CONTROL ROOM AREAS.					
1.1	Screw Chiller-175TR	2	1		1	
1.2	AHU for MCR	2	1		1	
1.3	AHU for at 8.5 M level	1	1		1	
1.4	Chilled water pumps (2x100% or 3x50%)	1 or 2	1		1	
1.5	Fresh air fans for above AHU room.	2	0		1	
2.0	ESP Control Room AC PLANT-2 & 3					
2.1	Air Cooled Condensing unit AC 30TR for ESP Control Room for unit-1 & 2	2	2		1	
2.2	AHU for above	2	2		1	
2.3	Fresh air fans for above PAC room.	2	0		1	
TOTAL (KW)						605
NOTE						
1.0	Estimated power consumption (EPC) figure for the system (for working drives only) has been considered as 605 KW					
2.0	If bidder's quoted guaranteed power consumption (GPC) above remains within this EPC, there will be no technical loading of bid on power consumption for evaluation. However, if bidder's quoted GPC exceeds EPC, there shall be technical loading of bid for evaluation @ USD 4060 per KW of additional power over EPC.					
3.0	Bidder's guaranteed power consumption at motor input terminals (not shaft power) as furnished in relevant schedule shall be demonstrated by the successful bidder during performance testing at works. In addition GPC will also be demonstrated at site at rated duty condition.					
4.0	In case power consumption is noted higher than EPC / bidder's quoted GPC whichever is higher, during inspection/ PG test, penalty@ USD 4060 per additional KW shall be levied on vendor.					
5.0	If the contract currency is other than US \$, then the price loading/penalty shall be in equivalent amount in contract currency based on billing selling exchange rate of State Bank of India prevailing on the date of Award of Contract to BHEL i.e. 31.01.2016.					