

AC SYSTEM FOR 2x500 MW NEW NEYVELLI TPP (SG PACKAGE) --- ANNEXURE-A

SL No	DESCRIPTION OF EQUIPMENT/ ITEM	QTY	UNIT
1.0	LUMPSUM PRICES		
1.1	Total lumpsum firm prices for equipment & Services as specified, Comprising Engineering, design, manufacture, inspection & Testing at manufacturers works/subvendor's work, Painting at manufactures works, duty packed for transportation, delivery to site, unloading storage & handling at site, erection & commissioning, carrying out acceptance tests at site, final painting and handing over to customer the complete AC system on turnkey basis for 2X500 MW NNTPP as per specification PE-TS-400-553-A001 including special tool & tackels for maintenance, commissioning spares, Mandatory spares, all taxes, duties etc		
2.0	Break up prices for items covered in clause 1.0 above. In case, price indicated above does not match with item wise break-up given at 2.0, the highest price so calculated shall be considered for evaluation but in case of order, the same shall be placed at lowest price.		
3.0	AC-Plant-1: ESP CONTROL ROOM BUILDING		
3.1	Microprocessor controlled, water cooled chiller package each of minimum capacity 80 TR consisting of Hermetic/ semi - Hermetically sealed Screw/Scroll type refrigerant compressor operating on R134a refrigerant complete with motor, unit mounted starter, complete with suction and discharge shut off valves, HP / LP cutouts, oil pressure failure switch, gauge panel, automatic capacity control; Condenser, relief valve, chiller, controls such as thermostatic/electronic expansion valve, cooling thermostat, antifreeze thermostat, water flow switch, integral refrigerant pipes & fittings, strainer, sight glass, isolating valves, chiller drain valve, chiller insulation, refrigerant piping insulation, first charge of gas and oil, base frames, vibration isolators, integral wiring, unit mounted isolator / fuse switch and other accessories as specified.	2	NO
3.2	Sheet metal cabinet type air handling units (double skin as per specification) consisting of chilled water cooling coil, centrifugal blower, TEFC sq cage induction motor, drive set, filters (pre, fine and HEPA filters), 3 way motorised mixing valve with thermostatic controls and other accessories to meet AC load of control room areas at ESP-1 and ESP-2 building. HEPA Filters shall be provided in Common discharge plenum .	6	NO
3.3	Fibreglass reinforced plastic (FRP) construction cooling towers complete with fan, motor (VFD DRIVEN), FRP basin, nozzles, make-up water & quick fill water connection, Level Switch, drains, piping, valves, strainers, ladder & all accessories as specified.	2	NO
3.4	Centrifugal pump sets for condenser water recirculation complete with TEFC motor & all accessories as specified.	2	NO
3.5	Centrifugal pump sets for chilled water recirculation complete with TEFC motor & all accessories, as specified.	3	NO
3.6	MS, Make up, Tank 2 cubm (Inner surface for MS Tank - spray galvanised). 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
3.7	MS, soft water storage, Tank 8 cubm (Inner surface for MS Tank - spray galvanised). 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).	2	NO
3.8	MS chilled water Expansion Tank 1 cubm (insulated) with all accessories as required.	1	NO
3.9	Water softening plant with pump set and all the accessories as required to meet system requirement.	2	NO
3.10	CONDENSER 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.	1	LOT
3.11	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.	1	LOT
3.12*	MS medium class DRAIN WATER PIPING from various equipment like cooling tower (including equalising line), condenser water pumps, AHU, FCU, Chilled water pump etc upto nearest available drain point with necessary fittings like tees, reducers, expanders, elbows, flanges, valves with flanges, P trap etc as per specifications. Piping serving chilled water shall be insulated as per specification , whereas piping serving condenser water shall be uninsulated.		
3.12.1*	50mm	100	RMT*
3.12.2*	40mm	50	RMT*
3.13	Monsoon reheating/ winter heating kit comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	1	LOT
3.14	Pan type 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
3.15	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc.	1	LOT
3.16*	FAN COIL UNIT consisting of chilled water cooling coil, blower, motor, driveset, filters (prefilter), 3way motorised mixing valve with thermostatic controls and other accessories as per specifications		
3.16.1*	3 TR	1	NO*
3.16.2*	2TR	1	NO*
3.16.3*	1.5 TR	1	NO*
3.17*	Fire damper.		
3.17.1*	Fire damper with auto resetting, limit switches, indication lamps etc.	10	SQM*
3.17.2*	Motorized actuator with single phase power supply for the above fire damper.	12	NO*

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SL No	DESCRIPTION OF EQUIPMENT/ ITEM	QTY	UNIT
3.18*	Finished GSS ductwing fabricated from GSS having zinc coating 275 gms/ m ² ducting complete with hangers/ supports, dampers, grilles, diffusers (with & without VCD) etc.		
3.18.1*	18G.	400	SQM*
3.18.2*	20G.	1200	SQM*
3.18.3*	22G.	50	SQM*
3.18.4*	24G.	50	SQM*
3.19*	SUPPLY AIR DIFFUSERS / GRILLS with VCD (Extruded Aluminium powder coated) complete with fixing frames, nuts, bolts, gaskets, washers etc	10	SQM*
3.20*	RETURN AIR DIFFUSERS / GRILLS without VCD (Extruded Aluminium powder coated) complete with fixing frames, nuts, bolts, gaskets, washers etc	10	SQM*
3.21*	VOLUME CONTROL DAMPERS in GI construction as per specifications for supply / return ducts complete with fixing arrangement.	5	SQM*
3.22*	ACOUSTIC INSULATION of ducting from AHU outlets with material and finish as per specifications	1	LOT
3.23*	THERMAL INSULATION of supply air duct & return air duct with material and finish as per specifications.	1700	SQM*
4	Field instruments like pressure gauge, temperature gauge, pressure switch, differential pressure switch, flow switch, flow meters, and other required instruments as per specifications	1	LOT
5.0	AC System for Aux. building		
5.1*	Air-cooled split type AC units consisting of outdoor unit (having compressor condenser coil with fan and motor), indoor unit (having evaporator coil,filter, fan with motor), inter connecting 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 & out door unit, stabilizer etc.		
5.1.1*	5.0 TR capacity (ductable type, 415 V, 3 phase with isolation switch).	1	NO*
5.1.2*	2.0 TR capacity (non-ductable type, 240 V, 1 phase isolation switch) with isolation switch , i.e MCB of suitable rating as specified.(Minimum BEE Rating 5 Star for non ductable units).	5	NO*
5.1.3*	1.5 TR capacity (non-ductable type, 240 V, 1 phase isolation switch) with isolation switch , i.e MCB of suitable rating as specified.(Minimum BEE Rating 5 Star for non ductable units).	5	NO*
6.0	Manually operated, platform trolley of 1 Ton capacity with base area 2m x 1.5m	3	NO*
7.0	Air curtain (for minimum door height 3 m and width 3 feets)	2	NO*
8.0	Total lumpsum price for special tools & tackles for maintenance inclusive of packing forwarding, transportation up to site, etc. (Bidder shall submit item-wise price break-up).	1	LOT
9.0	Total lumpsum price for commissioning spares inclusive of packing forwarding, transportation up to site, etc. (Bidder shall submit item-wise price break-up).	1	LOT
10.0	Total lumpsum price for Mandatory Spare for air conditioning inclusive of packing forwarding, transportation up to site, etc. (Bidder to submit item-wise price break-up).	1	LOT
11.0	Any other item not indicated above, but required to make the system complete in all respects.	1	LOT
NOTES 1 The bidder shall furnish unit rates for variable item (marked *) 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. 2 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 3 Items like drain piping with insulation, Duct work with accessories, insulation etc are common for all the AC plants 4 Price format shall not be changed by the bidder as the bidder may get disqualified by doing so. 5 For limitation on payment, percentages of individual items/equipments, as specified in the appendix-A1 shall be applicable			

MANDATORY SPARE LIST - 2 x 500 MW NEW NQVVELI SG PACKAGE--ANNEXURE-B

SL No	DESCRIPTION OF EQUIPMENT/ ITEM	SUPPLY								REMARKS
		UNIT	QUANTIT Y	Unit Price (Rs)	Total ex- works price (Rs)	ED including CESS (Rs)	CST / VAT (Rs)	FREIGHT including Service Tax, If applicable (Rs)	TOTAL F.O.R. Site Price Supply (Rs)	
1	Contractor (For each type and rating)	No.	Minimum 1 no. of each type							Applicable items considered. Applicable items are those which are installed in the system.
2	Over load relay (For each type and rating)	No.	2 no. of each type							
3	Relay/Timer (For each type and rating)	No.	3 no. of each type							
4	Fan motor (For each type and rating)	No.	30% of each rating							
5	Electronics cards (For each type and rating)	No.	20% of each rating							
6	Switch fuse unit/MCCB/ELCB (For each type and rating)	No.	2 no. of each rating							
7	Blower motor (For each type and rating)	No.	30% of each rating							
8	Pumps (For each type and size)									
8.1	Impeller (For each type and size)	No.	2							
8.2	Shafts (For each type and size)	No.	1							
8.3	Shaft sleeve (For each type and size)	Set	3							
8.4	Casing wear ring (For each type and size)	Set	6							
8.5	Impeller bearing (For each type and size)	Set	2							
8.6	Motor bearing (For each type and size)	Set	2							
8.7	Thrust bearing (For each type and size)	Set	2							
8.8	Radial bearing (For each type and size)	Set	2							
8.9	Gland packing (For each type and size)	Set	2							
8.1	Fasteners (For each type and size)	Set	1							
8.11	Complete coupling (pump & motor) (For each type and size)	Set	1							
8.12	Motor (For each type and rating)	No.	1							

APPENDIX - A1
Percentage breakup for Air Conditioning Package
2x500 MW NEW NEYVELI TPP (SG PACKAGE)

SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	Percentage of total price
1	Total lumpsum firm prices for equipment & Services as specified, Comprising Engineering, design, manufacture, inspection & Testing at manufacturers works/subvendor's work, Painting at manufactures works, duty packed for transportation, delivery to site, unloading storage & handling at site, erection & commissioning, carrying out acceptance tests at site, final painting and handing over to customer the complete AC system on turnkey basis for 2X500 MW NNTPP as per specification PE-TS-400-553-A001 including special tool & tackels for maintenance, commissioning spares, Mandatory spares, all taxes, duties etc (Without mandatory spare - Sr. No. 10.0 of suggestive price format)	100%
2.0	BREAK-UP OF PRICES GIVEN IN 1.0 ABOVE (To be used during contract execution for payment)	
2.1	Total lump sum firm price for EQUIPMENT (SUPPLY) for Engineering, design, manufacture, inspection & Testing at manufacturers works/subvender's work, Painting at manufactures works, duly packed for transportation, delivery to site, unloading storage & handling at site, for the complete scope of supply of air conditioning system and as defined in the technical specification (PE-TS-400-553-A001)	80%
2.1	Erection & commissioning, carrying out acceptance tests at site, final painting and handing over to customer the complete AC system on turnkey basis as per specification PE-TS-400-553-A001 including all taxes, duties etc..	20%
3.0	Break-up (%) of prices given at Sl No-2.1 above (To be used during contract execution for payment)	Percentage of total price of SL No 2.1 above
3.1	Water Chilling machine - Screw/Scroll Chiller - (Item no 3.1 of Suggestive price format)	12.00%
3.2	Air handling units (Item Nos 3.2 of Suggestive price format)	11.00%
3.3	Cooling Towers (Item no 3.3 of Suggestive price format)	2.00%
3.4	Pumps (Item no 3.4 & 3.5 of Suggestive price format)	2.00%
3.5	Tanks (Item no 3.6, 3.7 & 3.8 of Suggestive price format)	1.00%
3.6	Water treatment equipment (Item no 3.9 of Suggestive price format)	8.00%
3.7	Condenser water piping (Item Nos 3.10 of Suggestive price format)	12.00%
3.8	Chilled & Drain water piping (Item Nos 3.11 & 3.12 of Suggestive price format)	16.00%
3.9	Heaters and humidifiers (Item Nos 3.13 & 3.14 of Suggestive price format)	2.00%
3.10	Fresh air Fans (Item Nos 3.15 of Suggestive price format)	2.00%
3.11	Fan coil units (Item no 3.16 of Suggestive price format)	1.00%
3.12	Fire Dampers (Item no 3.17 of Suggestive price format)	1.00%
3.13	GSS Duct work with airline accessories (Item no 3.18, 3.19, 3.20 & 3.21 of Suggestive price format)	10.00%
3.14	Acoustic insulation (Item no 3.22 of Suggestive price format)	0.50%
3.15	Thermal Insulation (Item no3.23 of Suggestive price format)	7.00%
3.16	Field instruments - (Item no 4.0 of Suggestive price format)	7.00%
3.17	Air cooled split type AC units (Item no 5.0 of Suggestive price format)	4.00%
3.18	Manually operated platform trolley & Air curtain (Item no 6.0 & 7 of Suggestive price format)	0.50%
3.19	Special Tools tackels, Commissioning Spares & Any other item (Item no 8.0, 9.0 & 11.0 of Suggestive price format)	1.00%


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