



VENTILATION SYSTEM  
ENNORE TPS  
(2X660 MW)

SPECIFICATION NO. PE-TS-412-554-A001

ADDENDUM No. 3

DATE: 16.06.2015

SHEET : 1 OF 2

**ENNORE SEZ**  
**(2x660 MW)**

**ADDENDUM No. 3**

(TECH SPEC No. PE-TS-412-554-A001)

**VENTILATION SYSTEM**



**VENTILATION SYSTEM  
ENNORE TPS  
(2X660 MW)**

**SPECIFICATION NO. PE-TS-412-554-A001**

**ADDENDUM No. 3**

**DATE: 16.06.2015**

**SHEET : 2 OF 2**

**ADDENDUM No. 3 TO THE TECHNICAL SPECIFICATION PE-TS-412-554-A001 VENTILATION  
SYSTEM OF ENNORE SEZ (2X660MW)**

**1. AMENDMENT TO EXISTING CLAUSES OF THE TECHNICAL SPECIFICATION**

| <b>S.No</b> | <b>Clause</b>                                     | <b>To Be Read As<br/>(Amendment)</b>                     |
|-------------|---------------------------------------------------|----------------------------------------------------------|
| 1.          | Volume III, section 6,<br>suggestive price format | Revised Volume III section 6, shall be read as attached. |

**VENTILATION SYSTEM FOR 2 x 660 MW ENNORE SEZ STPP --- SUGGESTIVE PRICE FORMAT**

| SL No  | DESCRIPTION OF EQUIPMENT/ ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | QTY  | UNIT  | SUPPLY          |                           |                    |                |                                                     |                                  | ERECTION AND COMMISIONING |                  |                  |                                                                | TOTAL                                                           |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|-----------------|---------------------------|--------------------|----------------|-----------------------------------------------------|----------------------------------|---------------------------|------------------|------------------|----------------------------------------------------------------|-----------------------------------------------------------------|
|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |       | Unit Price (Rs) | Total ex-works price (Rs) | ED (Inc CESS) (Rs) | CST / VAT (Rs) | Freight (Including service tax, if applicable) (Rs) | TOTAL FOR site price SUPPLY (Rs) | Unit Price (Rs)           | Total price (Rs) | Service Tax (Rs) | TOTAL PRICE (Erection and commissioning including Service tax) | Total Price Supply FIOR site and E&C including service tax (Rs) |
| 1.0    | Total lumpsum firm prices for equipment & Services as specified, Comprising Engineering, design, manufacture, inspection & Testing at manufacturer's/subvondor's works, Painting at manufactures works, duly packed for transportation, delivery to site, unloading, storage & handling at site, fabrication, erection and commissioning, performance and guarantee testing, submission of as built drawing, O&M Manual, carrying out acceptance tests at site, and final painting of complete Ventilation system on turnkey basis as per specification <b>PE-TS-412-554-A001</b> including mandatory spares, special tool & tackels for maintenance, commissioning 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 the lowest price.                                                                                                                                                                                                                                                                                                                                                                                                                   |      |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.1    | Sheet metal type air washer unit with centrifugal fan (DIDW) with motor, , pumps with motors, air washer internals, inlet air louvers, filters, piping as per IS:1239, Part-I (heavy class galvanised), valves, nozzles, level switch, temp indicators, back wash arrangement, galvanised drain piping, etc as per specification of capacity <b>2,50,000 CMH</b> . Each air washer has 3 no centrifugal fan ( 3 x 33% duty) of capacity <b>83,500 CMH each</b> at min. <b>75 mm SP</b> .                                                                                                                                                                                                           | 8    | NO    |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.2    | Unitary air filtration unit with centrifugal fan (SISW) with motor, pumps with motors, filters, UAF internals, piping as per IS: 1239 pt I (heavy class galvanised), valves for auto start of standby equipment, nozzles, level switch, pressure switches, Temp. indicators, back wash arrangement, galvanised drain piping etc. as per spec. of capacity <b>75,000 CMH</b> .Each UAF has 1 no centrifugal fan ( 1 x 100% duty) of capacity <b>75,000 CMH at min. 75 mm SP</b>                                                                                                                                                                                                                     | 2    | NO    |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.3*   | Supply air ducting (finished) for above area complete with dampers, grills (with VCD & without VCD), supports (painted) and all accessories as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.3.1* | Finished GSS (zinc coating 275 gms/sq.m) Ducting with support structure etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| a)*    | 18 G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4000 | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| b)*    | 20 G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4000 | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| c)*    | 22 G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3000 | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| d)*    | 24 G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4000 | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.3.2* | MS Duct With Epoxy paint for battery room.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 200  | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.3.3* | MS Grilles with VCD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 200  | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.3.4* | MS Grilles without VCD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10   | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.3.5* | Exposed duct insulation with fibre glass insulation as per specifications.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2000 | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.3.6* | Wall mounted dampers (gravity operated) for different areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 30   | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.3.7* | Inlet Louvres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20   | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.4*   | FIRE DAMPER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| a)*    | Fire damper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30   | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| b)*    | Motorized Actuator with single phase power supply for the above Fire damper with auto resetting, limit switches, indication lamps etc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 45   | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| c)*    | Fusible Link type Fire Damper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20   | SQM*  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.5*   | Roof extractor units (axial flow type) with hood, disconnect switch and all accessories as specified. <b>Following fan shall have 15 mmwc static pressure.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| a)*    | Capacity 50,000 CMH with Motor rating 5.5 KW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 28   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| b)*    | Capacity 40,000 CMH with Motor rating 5.5 KW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2    | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| c)*    | Capacity 20,000 CMH with Motor rating 2.2 KW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1    | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |

**VENTILATION SYSTEM FOR 2 x 660 MW ENNORE SEZ STPP --- SUGGESTIVE PRICE FORMAT**

| SL No | DESCRIPTION OF EQUIPMENT/ ITEM                                                                                                                                                                                                                                                                                                     | QTY | UNIT  | SUPPLY          |                           |                    |                |                                                     |                                  | ERECTION AND COMMISIONING |                  |                  |                                                                | TOTAL                                                           |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------|-----------------|---------------------------|--------------------|----------------|-----------------------------------------------------|----------------------------------|---------------------------|------------------|------------------|----------------------------------------------------------------|-----------------------------------------------------------------|
|       |                                                                                                                                                                                                                                                                                                                                    |     |       | Unit Price (Rs) | Total ex-works price (Rs) | ED (Inc CESS) (Rs) | CST / VAT (Rs) | Freight (Including service tax, if applicable) (Rs) | TOTAL FOR site price SUPPLY (Rs) | Unit Price (Rs)           | Total price (Rs) | Service Tax (Rs) | TOTAL PRICE (Erection and commissioning including Service tax) | Total Price Supply FIOR site and E&C including service tax (Rs) |
| 2.6*  | Axial flow supply fans with pre and fine filter (wall mounted) complete with casing, TEFC sq cage induction motors & mounting frame, MS rain protection cowl, bird screen and all other accessories (suitable for 415V/3-phase supply). <b>Following fan shall have 30 mmwc static pressure.</b>                                   |     |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| a)*   | Capacity 10,000 CMH with Motor rating 2.2 KW                                                                                                                                                                                                                                                                                       | 8   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| b)*   | Capacity 7,500 CMH with Motor rating 1.5 KW                                                                                                                                                                                                                                                                                        | 8   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| c)*   | Capacity 6,000 CMH with Motor rating 1.1 KW                                                                                                                                                                                                                                                                                        | 15  | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| d)*   | Capacity 4,000 CMH with Motor rating 0.75 KW                                                                                                                                                                                                                                                                                       | 10  | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.7*  | Axial flow supply fans with pre filter (wall mounted) complete with casing, TEFC sq cage induction motors & mounting frame, MS rain protection cowl, bird screen and all other accessories (suitable for 415V/3-phase supply) as specified. <b>Following fan shall have 20 mmwc static pressure.</b>                               |     |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| a)*   | Capacity 10,000 CMH with Motor rating 1.5 KW                                                                                                                                                                                                                                                                                       | 20  | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| b)*   | Capacity 7,500 CMH with Motor rating 1.1 KW                                                                                                                                                                                                                                                                                        | 10  | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| c)*   | Capacity 6,000 CMH with Motor rating 1.1 KW                                                                                                                                                                                                                                                                                        | 2   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| d)*   | Capacity 4,000 CMH with Motor rating 0.75 KW                                                                                                                                                                                                                                                                                       | 2   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.8*  | Axial flow exhaust fans (Bifurcated type, spark proof construction, wall mounted) complete with casing, flame proof motor & mounting frame, MS rain protection cowl, bird screen and all other accessories epoxy painted (suitable for 415V/3-phase supply) as specified. <b>Following fan shall have 15 mmwc static pressure.</b> |     |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| a)*   | Capacity 15,000 CMH with Motor rating 2.2 KW                                                                                                                                                                                                                                                                                       | 5   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| b)*   | Capacity 10,000 CMH with Motor rating 1.5 KW                                                                                                                                                                                                                                                                                       | 8   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| c)*   | Capacity 7,500 CMH with Motor rating 1.1 KW                                                                                                                                                                                                                                                                                        | 6   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| d)*   | Capacity 2,000 CMH with Motor rating 0.55 KW                                                                                                                                                                                                                                                                                       | 4   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.9*  | Axial flow exhaust fans (Wall mounted) complete with casing, TEFC sq cage induction motor & mounting frame, MS rain protection cowl, bird screen and all other accessories epoxy painted (suitable for 415V/3-phase supply) as specified. <b>Following fan shall have 10 mmwc static pressure.</b>                                 |     |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| a)*   | Capacity 15,000 CMH with Motor rating 1.1 KW                                                                                                                                                                                                                                                                                       | 12  | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| b)*   | Capacity 10,000 CMH with Motor rating 0.75 KW                                                                                                                                                                                                                                                                                      | 5   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| c)*   | Capacity 7,500 CMH with Motor rating 0.55 KW                                                                                                                                                                                                                                                                                       | 4   | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| d)*   | Capacity 6,000 CMH with Motor rating 0.55 KW                                                                                                                                                                                                                                                                                       | 20  | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| e)*   | Capacity 2,000 CMH with Motor rating 0.37 KW                                                                                                                                                                                                                                                                                       | 10  | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.10* | Exhaust fan (propeller type) completes with induction motor & mounting frame MS rain protection cowl, bird screen and all other accessories as specified (suitable for 240V/ 1 phase). <b>Following fan shall have 5 mmwc static pressure.</b>                                                                                     |     |       |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| a)*   | Capacity 1200 CMH with Motor rating 100 watts                                                                                                                                                                                                                                                                                      | 130 | Nos.* |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.11  | 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   |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.12  | 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   |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.14  | <b>FIELD INSTRUMENTS</b> like pressure gauge, temperature gauge, pressure switch, differential pressure switch, velocity sensor/static pressure sensor, flow switch and other instrument required for Ventilation System etc.                                                                                                      | 1   | LOT   |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |

| VENTILATION SYSTEM FOR 2 x 660 MW ENNORE SEZ STPP --- SUGGESTIVE PRICE FORMAT |                                                                                                                                                                     |     |      |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|-----------------|---------------------------|--------------------|----------------|-----------------------------------------------------|----------------------------------|---------------------------|------------------|------------------|----------------------------------------------------------------|-----------------------------------------------------------------|
| SL No                                                                         | DESCRIPTION OF EQUIPMENT/ ITEM                                                                                                                                      | QTY | UNIT | SUPPLY          |                           |                    |                |                                                     |                                  | ERECTION AND COMMISIONING |                  |                  |                                                                | TOTAL                                                           |
|                                                                               |                                                                                                                                                                     |     |      | Unit Price (Rs) | Total ex-works price (Rs) | ED (Inc CESS) (Rs) | CST / VAT (Rs) | Freight (Including service tax, if applicable) (Rs) | TOTAL FOR site price SUPPLY (Rs) | Unit Price (Rs)           | Total price (Rs) | Service Tax (Rs) | TOTAL PRICE (Erection and commissioning including Service tax) | Total Price Supply FIOR site and E&C including service tax (Rs) |
|                                                                               |                                                                                                                                                                     |     |      |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.15                                                                          | Any other item not indicated above, but required to make the system complete in all respects.                                                                       | 1   | LOT  |                 |                           |                    |                |                                                     |                                  |                           |                  |                  |                                                                |                                                                 |
| 2.16                                                                          | Total lumpsum price for Mandatory Spare inclusive of packing forwarding, transportation up to site, etc.<br>(Bidder to submit item-wise price break-up seperately). | 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 Price format shall not be changed by the bidder as the bidder may get disqualified by doing so.
- 4 For limitation on payment, percentages of individual items/equipments, as specified in the **Appendix-A** shall be applicable

| VENTILATION SYSTEM FOR 2 x 660 MW ENNORE SEZ STPP --- MANDATORY SPARES SUGGESTIVE PRICE FORMAT |                                                                               |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------|------|-----------------|---------------------------|--------------------|----------------|-----------------------------------------------------|----------------------------------|--------------------------------------------------------|
| SL No                                                                                          | DESCRIPTION OF EQUIPMENT/ ITEM                                                | QTY                                                                   | UNIT | SUPPLY          |                           |                    |                |                                                     |                                  | TOTAL                                                  |
|                                                                                                |                                                                               |                                                                       |      | Unit Price (Rs) | Total ex-works price (Rs) | ED (Inc CESS) (Rs) | CST / VAT (Rs) | Freight (Including service tax, if applicable) (Rs) | TOTAL FOR site price SUPPLY (Rs) | Total Price Supply FOR site including service tax (Rs) |
|                                                                                                |                                                                               |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>A</b>                                                                                       | <b>MECHANICAL AND GENERAL</b>                                                 |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>1</b>                                                                                       | <b>CENTRIFUGAL FANS</b>                                                       |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1.1                                                                                            | V-BELTS                                                                       | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1.2                                                                                            | BLOWER BEARING SETS                                                           | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1.3                                                                                            | BLOWER MOTOR BEARINGS                                                         | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1.4                                                                                            | SEAL GASKET AND OTHER WEAR OUT PARTS IN SETS                                  | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1.5                                                                                            | VIBRATION ISOLATORS                                                           | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>2.</b>                                                                                      | <b>AXIAL FANS</b>                                                             |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2.1                                                                                            | FAN BEARINGS                                                                  | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2.2                                                                                            | FAN MOTOR BEARING                                                             | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2.3                                                                                            | DRY FILTERS                                                                   | 2 SETS OF EACH TYPE AND SIZE                                          |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>3</b>                                                                                       | <b>AIR WASHER SYSTEM</b>                                                      |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 3.1                                                                                            | WATER STRAINERS                                                               | 2 SETS OF EACH SIZE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2.2                                                                                            | SPRAY NOZZLES                                                                 | 2 SETS OF EACH SIZE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2.3                                                                                            | WATER REPELLANT TYPE FILTERS                                                  | 2 SETS OF EACH SIZE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>4</b>                                                                                       | <b>HORIZONTAL CENTRIFUGAL PUMP</b>                                            |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 4.1                                                                                            | IMPELLER FOR EACH OF PUMP SET                                                 | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 4.2                                                                                            | BEARINGS                                                                      | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 4.3                                                                                            | SHAFT SLEEVES                                                                 | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 4.4                                                                                            | BEARINGS MOTOR                                                                | 2 SETS OF EACH TYPE                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
|                                                                                                |                                                                               |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>B</b>                                                                                       | <b>ELECTRICAL</b>                                                             |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1                                                                                              | Terminal plates                                                               |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| a                                                                                              | For motors upto 30 KW                                                         | 10 NOS. EACH FOR SMALL MOTORS UPTO 30 KW                              |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| b                                                                                              | For motors above 30 KW                                                        | 4 NOS. EACH FOR MORE THAN 30 KW                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2                                                                                              | Heaters                                                                       | 2 SETS                                                                |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 3                                                                                              | Greasing arrangements                                                         | 4 SETS OF EACH TYPE OF MOTOR.                                         |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 4                                                                                              | Motor of each type and rating                                                 | 10% OF THE INSTALLED QUANTITY OR MINIMUM 1 NUMBER WHICHEVER BE HIGHER |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 5                                                                                              | Bearings (DE and NDE) for each type and rating of motor                       | 4 SETS                                                                |      |                 |                           |                    |                |                                                     |                                  |                                                        |
|                                                                                                |                                                                               |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>C</b>                                                                                       | <b>CONTROL AND INSTRUMENTATION</b>                                            |                                                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
|                                                                                                | Each type of lamps, PBs, ILPBs, fuse, MCB, MCCB used in the equipment/system. | 20% OF QTY INSTALLED.                                                 |      |                 |                           |                    |                |                                                     |                                  |                                                        |

| VENTILATION SYSTEM FOR 2 x 660 MW ENNORE SEZ STPP --- MANDATORY SPARES SUGGESTIVE PRICE FORMAT |                                                                                                                                                                                                                  |                                                                                                           |      |                 |                           |                    |                |                                                     |                                  |                                                        |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------|-----------------|---------------------------|--------------------|----------------|-----------------------------------------------------|----------------------------------|--------------------------------------------------------|
| SL No                                                                                          | DESCRIPTION OF EQUIPMENT/ ITEM                                                                                                                                                                                   | QTY                                                                                                       | UNIT | SUPPLY          |                           |                    |                |                                                     |                                  | TOTAL                                                  |
|                                                                                                |                                                                                                                                                                                                                  |                                                                                                           |      | Unit Price (Rs) | Total ex-works price (Rs) | ED (Inc CESS) (Rs) | CST / VAT (Rs) | Freight (Including service tax, if applicable) (Rs) | TOTAL FOR site price SUPPLY (Rs) | Total Price Supply FOR site including service tax (Rs) |
|                                                                                                |                                                                                                                                                                                                                  |                                                                                                           |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>a)</b>                                                                                      | <b>Measuring Instruments</b>                                                                                                                                                                                     |                                                                                                           |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1                                                                                              | Indicators, Recorders, Electrical Metering and Skid Mounted Instruments                                                                                                                                          | 20% OF INSTALLED OF EACH TYPE.                                                                            |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1.1                                                                                            | Indicators, recorders and meters offered from each model for the project. These instruments shall be supplied with three sets of blank scales.                                                                   | 10% OF INSTALLED OF EACH TYPE/MODEL OR A MINIMUM OF ONE NUMBER FOR EACH MODEL AND TYPE, WHICHEVER IS MORE |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1.2                                                                                            | For skid mounted instruments                                                                                                                                                                                     | 10% OF INSTALLED OF EACH TYPE/MODEL OR A MINIMUM OF ONE NUMBER FOR EACH MODEL AND TYPE, WHICHEVER IS MORE |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2                                                                                              | Temperature Elements and Thermowells                                                                                                                                                                             |                                                                                                           |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2.1                                                                                            | Thermocouple/RTD elements                                                                                                                                                                                        | 10% OF INSTALLED OF EACH TYPE/MODEL OR A MINIMUM OF ONE NUMBER FOR EACH MODEL AND TYPE, WHICHEVER IS MORE |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2.2                                                                                            | Thermowells                                                                                                                                                                                                      | 10% OF INSTALLED OF EACH TYPE/MODEL OR A MINIMUM OF ONE NUMBER FOR EACH MODEL AND TYPE, WHICHEVER IS MORE |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 3                                                                                              | Temperature Transmitters and Electronic Transmitters (For Pressure, DP, Temp, Flow, Level), Temperature, Pressure, Flow & Level Switch, safety switches, Gauges, meters, Transducer or any other instrument etc. | 10% OF INSTALLED OF EACH TYPE/MODEL OR A MINIMUM OF ONE NUMBER FOR EACH MODEL AND TYPE, WHICHEVER IS MORE |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>b)</b>                                                                                      | <b>Relay based Control Panels</b>                                                                                                                                                                                |                                                                                                           |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1                                                                                              | LEDs for indicating lights                                                                                                                                                                                       | 10% OF QTY INSTALLED.                                                                                     |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2                                                                                              | Control circuit fuses/MCB/MCCB/ Semiconductor Fuses                                                                                                                                                              | 300% OF INSTALLED OF EACH TYPE, CURRENT RATING.                                                           |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 3                                                                                              | Relays modules & contactors.                                                                                                                                                                                     | 20% SPARE OF QTY INSTALLED OF EACH TYPE & RATING                                                          |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>c)</b>                                                                                      | <b>Alarm Annunciation System</b>                                                                                                                                                                                 |                                                                                                           |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1                                                                                              | logic modules, group card modules, power supply modules, Hooters and any other electronic module.                                                                                                                | 20% SPARES OF EACH TYPE INSTALLED                                                                         |      |                 |                           |                    |                |                                                     |                                  |                                                        |

| VENTILATION SYSTEM FOR 2 x 660 MW ENNORE SEZ STPP --- MANDATORY SPARES SUGGESTIVE PRICE FORMAT |                                                                                                                                                     |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------|-----------------|---------------------------|--------------------|----------------|-----------------------------------------------------|----------------------------------|--------------------------------------------------------|
| SL No                                                                                          | DESCRIPTION OF EQUIPMENT/ ITEM                                                                                                                      | QTY                                                                    | UNIT | SUPPLY          |                           |                    |                |                                                     |                                  | TOTAL                                                  |
|                                                                                                |                                                                                                                                                     |                                                                        |      | Unit Price (Rs) | Total ex-works price (Rs) | ED (Inc CESS) (Rs) | CST / VAT (Rs) | Freight (Including service tax, if applicable) (Rs) | TOTAL FOR site price SUPPLY (Rs) | Total Price Supply FOR site including service tax (Rs) |
|                                                                                                |                                                                                                                                                     |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2                                                                                              | un-engraved window boxes complete with LED etc.                                                                                                     | 5% SPARES OF EACH TYPE INSTALLED                                       |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 3                                                                                              | LEDs for annunciation facia windows and LEDs box assemblies offered for the project                                                                 | 20% OF QTY INSTALLED                                                   |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 4                                                                                              | Annunciator hooter                                                                                                                                  | ONE (1) NO. OF EACH TYPE                                               |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>d)</b>                                                                                      | <b>Erection hardware</b>                                                                                                                            |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1                                                                                              | Instrument valves                                                                                                                                   | 10% OF EACH TYPE & SIZE INSTALLED                                      |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2                                                                                              | Condensate pots of each type & Size installed                                                                                                       | 10% OF TOTAL NUMBER OF INSTALLED OR FOUR NUMBERS WHICHEVER IS HIGHER . |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 3                                                                                              | Manifold                                                                                                                                            | 10% OF EACH TYPE & SIZE INSTALLED                                      |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 4                                                                                              | Fittings                                                                                                                                            | 10% OF EACH TYPE & SIZE INSTALLED                                      |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| <b>e)</b>                                                                                      | <b>Mandatory Spares for Control valves, Power Cylinder, Control Dampers, Actuators and Accessories</b>                                              |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 1                                                                                              | Following spares shall be furnished for control valves, Power Cylinder, Control Dampers as applicable.                                              |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 2                                                                                              | One set of spare control valve stem packing for each control valve.                                                                                 |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 3                                                                                              | Two moulded rubber diaphragms for each control valve.                                                                                               |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 4                                                                                              | One sets of each of O-rings and rubber gaskets for each control valve.                                                                              |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 5                                                                                              | 100 percent qty. of lubricants for gaskets for each control valve on one year consumption basis.                                                    |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 6                                                                                              | 2 sets of limit switches and 1 set of valve positioner for each control valve.                                                                      |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 7                                                                                              | 20 percent of position transmitter (4-20mA) for total qty. of control valve.                                                                        |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 8                                                                                              | One (1) set of valve trims (such as plug, stem, seat ring /cage, guide bushing, stem lock pin, packing retaining ring, etc) for each control valve. |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 9                                                                                              | One completes actuator of each type or min 10% for each type and size whichever is more.                                                            |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 10                                                                                             | 20 percent of Solenoid valves or min 2 no. of each type for total qty. of control valves.                                                           |                                                                        |      |                 |                           |                    |                |                                                     |                                  |                                                        |

| VENTILATION SYSTEM FOR 2 x 660 MW ENNORE SEZ STPP --- MANDATORY SPARES SUGGESTIVE PRICE FORMAT |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |      |                 |                           |                    |                |                                                     |                                  |                                                        |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|-----------------|---------------------------|--------------------|----------------|-----------------------------------------------------|----------------------------------|--------------------------------------------------------|
| SL No                                                                                          | DESCRIPTION OF EQUIPMENT/ ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | QTY | UNIT | SUPPLY          |                           |                    |                |                                                     |                                  | TOTAL                                                  |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |      | Unit Price (Rs) | Total ex-works price (Rs) | ED (Inc CESS) (Rs) | CST / VAT (Rs) | Freight (Including service tax, if applicable) (Rs) | TOTAL FOR site price SUPPLY (Rs) | Total Price Supply FOR site including service tax (Rs) |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| 11                                                                                             | 20% of I to P converters, Pressure regulators.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |      |                 |                           |                    |                |                                                     |                                  |                                                        |
| f)                                                                                             | Mandatory spares not covered above                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |      |                 |                           |                    |                |                                                     |                                  |                                                        |
|                                                                                                | Bidder to supply 10% or 1 no. (whichever is more) of each type of sensor/instrument, instrumentation/mechanical fittings etc for any other electronic system, feeder control cabinets, hydrastep (EWLI), Vibration Monitoring System, CCTV, C&I Lab Instruments, On line Carbon in Ash analyser system, On line Coal mass flow/speed measurement system, On line secondary air flow measurement system Mass Flow meter, Solid flow meter, 3 D Acoustic type level transmitters, Nucleonic & non nucleonic density transmitter etc. |     |      |                 |                           |                    |                |                                                     |                                  |                                                        |

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 Price format shall not be changed by the bidder as the bidder may get disqualified by doing so.

| PROJECT : 2X660 MW ENNORE    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                              |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| PACKAGE : VENTILATION SYSTEM |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                              |
| APPENDIX - A                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                              |
| 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 manufacturer's/subvendor's works, Painting at manufactures works, duly packed for transportation, delivery to site, unloading, storage & handling at site, fabrication, erection and commissioning, performance and guarantee testing, submission of as built drawing, carrying out acceptance tests at site, and final painting of complete Ventilation system on turnkey basis as per specification PE-TS-412-554-A001 including special tool & tackels for maintenance, commissioning spares, all taxes, duties etc. (Without mandatory spare - Sr. No. 2.16 of suggestive price format) | 100%                                         |
| 2.0                          | <b>BREAK-UP OF PRICES GIVEN IN 1.0 ABOVE (To be used during contract execution for payment)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                              |
| 2.1                          | Total lump sum firm price for <b>EQUIPMENT (SUPPLY)</b> for Engineering, design, manufacture, inspection & Testing at manufacturers works/subvendor'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 Ventilation system and as defined in the technical specification (PE-TS-412-554-A001)                                                                                                                                                                                                                                                                                                                     | 80%                                          |
| 2.2                          | <b>Erection &amp; commissioning</b> , carrying out acceptance tests at site, final painting and handing over to customer the complete ventilation system on turnkey basis as per specification PE-TS-412-554-A001 including special tool & tackels for maintenance, commissioning spares, all taxes, duties etc                                                                                                                                                                                                                                                                                                                                                                                                                   | 20%                                          |
| 3.0                          | <b>Break-up (%) of prices given at SI No-2.1 above (To be used during contract execution for payment)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Percentage of total price of SL No 2.1 above |
| 3.1                          | Air washer - (Item no 2.1 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 42.11%                                       |
| 3.2                          | UAF - (Item no 2.2 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 6.54%                                        |
| 3.3                          | GSS Duct work - (Item no 2.3.1 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20.97%                                       |
| 3.4                          | MS duct and grills (Item no 2.3.2, 2.3.3 & 2.3.4 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.17%                                        |
| 3.5                          | Thermal Insulation (Item no 2.3.5 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2.95%                                        |
| 3.6                          | Gravity damper, Inlet louver, Fire damper, VCD, (Item no 2.3.6 to 2.3.8 & 2.4 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1.55%                                        |
| 3.7                          | RE units (Item no 2.5 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 6.08%                                        |
| 3.8                          | Supply air fans (Item no 2.6 and 2.7 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 7.60%                                        |
| 3.9                          | Exhaust fans (Item no 2.8 to 2.10 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 8.60%                                        |
| 3.10                         | Tools and tackles & Commissioning Spares (Item no 2.11 to 2.12 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.52%                                        |
| 3.11                         | Field Instruments and any other accessories/item (Item no 2.14 to 2.15 of Suggestive price format)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.91%                                        |