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| <b>SUGGESTED PRICE FORMAT</b>                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Doc No:                         | PF-PE-413-571-11000-A001 |             |  |                     |  |
|                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Rev No:                         | 0                        |             |  |                     |  |
|                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Date of issue                   | 01.01.2020               |             |  |                     |  |
| <b>NAME OF PROJECT:</b>                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>4X111 MW VISHUGAD HEP</b>    |                          |             |  |                     |  |
| <b>NAME OF PACKAGE:</b>                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>HVAC SYSTEM</b>              |                          |             |  |                     |  |
| <b>TECHNICAL SPECIFICATION No:</b>                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>PE-TS-413-571-11000-A001</b> |                          |             |  |                     |  |
| <b>S. No.</b>                                                                                                                                                                      | <b>DESCRIPTION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>UNIT</b>                     | <b>QTY</b>               |             |  |                     |  |
| <b>1</b>                                                                                                                                                                           | Total lump sum firm price for <b>Supply part, Services part and Mandatory spares</b> comprising of design (i.e.preparation and submission of drawing /documents including “As Built” drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles (as applicable) fill of lubricants & consumables, spares alongwith spares for erection, startup and commissioning as required, forwarding, proper packing, shipment and delivery at site, unloading, handling, transportation to stores area & storage, transporation to site (from stores area) & in-site transportation, assembly, erection & commissioning, final painting at site, minor civil work, trial run at site and carrying out Performance guarantee / Functional / Demonstration tests at site (As applicable), training of customer/client O&M staff and handover in flawless condition of the package to the end customer complete with all accessories, Operation & Maintenance of Air Conditioning System (24x7) after handing over, for the total scope defined as per BHEL NIT & tender technical specification as specified above, amendment & agreements till placement of order. | Lot                             | 1                        |             |  |                     |  |
| <b>2</b>                                                                                                                                                                           | <b>MAJOR BREAK-UP OF PRICES GIVEN IN 1.0 ABOVE.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                 |                          |             |  |                     |  |
| <b>2.1</b>                                                                                                                                                                         | Total lump sum firm price for <b>Supply part</b> comprising of design (i.e.preparation and submission of drawing /documents including “As Built” drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles (as applicable), fill of lubricants & consumables alongwith spares for erection as required, startup and commissioning spares as required, forwarding, proper packing, shipment and delivery at site for the total scope defined as per BHEL NIT & tender technical specification as specified above, amendment & agreements till placement of order. <b>(Break-up as per Annexure-I)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Lot                             | 1                        |             |  |                     |  |
| <b>2.2</b>                                                                                                                                                                         | Total lumpsum firm prices for <b>Services part</b> comprising for unloading, handling, transportation to stores area & storage, transporation to site (from stores area) & in-site transportation, assembly, erection & commissioning, final painting at site, minor civil work, trial run at site and carrying out Performance guarantee / Functional / Demonstration tests at site (As applicable), training of customer/client O&M staff and handover in flawless condition of the package to the end customer complete with all accessories, Operation & Maintenance of Air Conditioning System (24x7) after handing over, for the total scope defined as per BHEL NIT & tender technical specification as specified above, amendment & agreements till placement of order. <b>(Break-up as per Annexure-I)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Lot                             | 1                        |             |  |                     |  |
| <b>2.3</b>                                                                                                                                                                         | Total lumpsum firm price for <b>Mandatory Spares</b> comprising of manufacture, fabrication, assembly, inspection / testing (as applicable) at vendor's & sub-vendor's works, painting, forwarding, proper packing, shipment, delivery at site & guarantee as per tender technical specification above, amendment & agreements till placement of order. <b>(Price break up of mandatory spares is to be furnished as per Annexure- II)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Lot                             | 1                        |             |  |                     |  |
| Note:<br>1.) BOP to consider and suitably incorporate taxes, duties and other commercial aspects.<br>2.) Bidder to quote the Prices in ‘figures’ along with corresponding ‘words’. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |                          |             |  |                     |  |
| <b>Particulars of bidder / authorised representative</b>                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |                          |             |  |                     |  |
|                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |                          |             |  |                     |  |
|                                                                                                                                                                                    | <b>Name</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Designation</b>              | <b>Signature</b>         | <b>Date</b> |  | <b>Company Seal</b> |  |

| SUGGESTED PRICE FORMAT<br>ANNEXURE - I<br>PRICE BREAKUP (FOR MAIN PLANT AND OTHER AUX BUILDINGS) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |     |        |  | Doc No:                   | PF-PE-413-571-11000-A001 |
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|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |     |        |  | Rev No:                   | 0                        |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |     |        |  | Date of issue             | 01.01.2020               |
| NAME OF PROJECT:                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |     |        |  |                           |                          |
| NAME OF PACKAGE:                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |     |        |  |                           |                          |
| TECHNICAL SPECIFICATION No:                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |     |        |  |                           |                          |
| SL NO                                                                                            | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | UNIT | Qty | SUPPLY |  | ERECTION AND COMMISIONING |                          |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |     |        |  |                           |                          |
| A                                                                                                | VENTILATION SYSTEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |     |        |  |                           |                          |
| 1                                                                                                | Fresh Air Supply System-<br>Machine Hall, Cavern including annex bays floors, Transformer hall and GIS Hall Cavern, Main access tunnel                                                                                                                                                                                                                                                                                                                                            |      |     |        |  |                           |                          |
| 1.1                                                                                              | Cabinet type Supply air Centrifugal type fans with motor, Fan capacity 110,000 CMH (minimum) & 150mm SP (minimum) supply air fan to all ventilated areas including as above- Machine Hall, Cavern including annex bays floors, Transformer hall and GIS Hall Cavern                                                                                                                                                                                                               | NO   | 2   |        |  |                           |                          |
| 1.2                                                                                              | Local control Panel along with all accessories etc. for above system                                                                                                                                                                                                                                                                                                                                                                                                              | LOT  | 1   |        |  |                           |                          |
| 2                                                                                                | Air Handling Units                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |     |        |  |                           |                          |
| 2.1                                                                                              | Sheet metal cabinet type double skin AIR HANDLING UNITS (3x50%) of 110000 CMH (minimum) & 100mm SP (minimum) capacity consisting of water cooling coil, centrifugal blower, TEFC sq cage induction motor, drive set, filters (pre filter ), along with local control panel and other accessories to meet the load of power house building for all floors.                                                                                                                         | NO   | 3   |        |  |                           |                          |
| 2.2                                                                                              | MONSOON REHEATING / WINTER HEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.                                                                                                                                                                                                                                                                                                                         | LOT  | 1   |        |  |                           |                          |
| 2.3                                                                                              | HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc                                                                                                                                                                                                                                                                                                                     | LOT  | 1   |        |  |                           |                          |
| 2.4                                                                                              | Local control Panel along with all accessories etc. for above system                                                                                                                                                                                                                                                                                                                                                                                                              | LOT  | 1   |        |  |                           |                          |
| 2.5                                                                                              | Sheet metal cabinet type double skin AIR HANDLING UNITS (3x50%) of 105000 CMH (minimum) & 100mm SP (minimum) capacity consisting of water cooling coil, centrifugal blower, TEFC sq cage induction motor, drive set, filters (pre filter ), along with local control panel and other accessories to meet the load of transformer cavern and GIS Hall                                                                                                                              | NO   | 3   |        |  |                           |                          |
| 2.6                                                                                              | MONSOON REHEATING / WINTER HEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.                                                                                                                                                                                                                                                                                                                         | LOT  | 1   |        |  |                           |                          |
| 2.7                                                                                              | HUMIDIFIER for each AHU room complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc                                                                                                                                                                                                                                                                                                                     | LOT  | 1   |        |  |                           |                          |
| 2.8                                                                                              | Local control Panel along with all accessories etc. for above system                                                                                                                                                                                                                                                                                                                                                                                                              | LOT  | 1   |        |  |                           |                          |
| 3                                                                                                | Cooling Water System                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |     |        |  |                           |                          |
| 3.1                                                                                              | CENTRIFUGAL PUMPS (2x100%) for circulation water complete with TEFC motor & all accessories as specified, common for all AHUs mentioned at S. No. 2 above.                                                                                                                                                                                                                                                                                                                        | NO   | 2   |        |  |                           |                          |
| 3.2                                                                                              | Cyclone Separator- (1X100%) along with instrumentation and associated accessories for cooling water circuit as per specification.                                                                                                                                                                                                                                                                                                                                                 | NO   | 1   |        |  |                           |                          |
| 3.3                                                                                              | Duplex filter (1X100%) for cooling water system                                                                                                                                                                                                                                                                                                                                                                                                                                   | SET  | 2   |        |  |                           |                          |
| 3.4                                                                                              | Local control Panel along with all accessories etc. for above system                                                                                                                                                                                                                                                                                                                                                                                                              | LOT  | 1   |        |  |                           |                          |
| 3.5                                                                                              | INSULATED COOLING WATER PIPING with necessary fittings like tees, reducers, expanders, elbows, flanges, all types of valves with flanges, strainers with flanges,air vents etc as per specifications. This item shall cover the entire cooling water piping for all the AHU rooms and the interconnecting pipes between AHUs and Pumps of all the buildings (pipe, valves, strainers, insulation material with all ancilliaries for insulation finishing as per specifications.). | LOT  | 1   |        |  |                           |                          |
| 4                                                                                                | Exhaust Air Fans                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |     |        |  |                           |                          |
| 4.1                                                                                              | Cabinet type Exhaust air Centrifugal type fans with motor and local control panel (200000 CMH (minimum) & 80mm SP (minimum), 2x100%) for exhaust of air from all ventilated areas including Power House Floors, transformer cavern & MAT.                                                                                                                                                                                                                                         | NO   | 2   |        |  |                           |                          |
| 4.2                                                                                              | Cabinet type Exhaust air Centrifugal type fans with motor and local control panel (55000 CMH (minimum) & 80mm SP (minimum)) for exhaust of air from ventilated areas of Power House Floors and Control Block                                                                                                                                                                                                                                                                      | NO   | 2   |        |  |                           |                          |
| 4.3                                                                                              | Cabinet type Exhaust air Centrifugal type fans with motor and local control panel (55000 CMH (minimum) & 80mm SP (minimum)) for exhaust of air from ventilated areas of, transformer/ GIS cavern & Bus Duct Galleries.                                                                                                                                                                                                                                                            | NO   | 2   |        |  |                           |                          |
| 4.4                                                                                              | Local control Panel along with all accessories etc. for above system                                                                                                                                                                                                                                                                                                                                                                                                              | LOT  | 1   |        |  |                           |                          |
| 5                                                                                                | Ventilation System for Butterfly Valve chamber                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |     |        |  |                           |                          |
| 5.1                                                                                              | Centrifugal fan with 36000CMH (minimum) capacity & 150mm SP (minimum), DIDW type, complete with casing, TEFC sq cage induction motors & mounting frame, bird screen and all other accessories (suitable for 415V/3-phase supply).                                                                                                                                                                                                                                                 | NO   | 2   |        |  |                           |                          |
| 6                                                                                                | Exhaust Air Fans ( Centrifugal Fans) for Others areas with minimum parameters of the fan, mentioned as under:                                                                                                                                                                                                                                                                                                                                                                     |      |     |        |  |                           |                          |
| 6.1                                                                                              | Smoke exhaust fans - 15000CMH , 150MMWG                                                                                                                                                                                                                                                                                                                                                                                                                                           | NO*  | 3   |        |  |                           |                          |
| 6.2                                                                                              | Smoke exhaust fans - 25000CMH , 150MMWG                                                                                                                                                                                                                                                                                                                                                                                                                                           | NO*  | 3   |        |  |                           |                          |
| 6.3                                                                                              | Battery Room Fan- 15000CMH, 150MMWG                                                                                                                                                                                                                                                                                                                                                                                                                                               | NO*  | 2   |        |  |                           |                          |
| 6.4                                                                                              | Toilet-5000CMH, 150MMWG                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NO*  | 2   |        |  |                           |                          |
| 6.5                                                                                              | Kitchen-2500CMH, 150MMWG                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NO*  | 2   |        |  |                           |                          |
| 6.6                                                                                              | Store- 3500CMH, 150MMWG                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NO*  | 2   |        |  |                           |                          |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         | Date of issue | 01.01.2020 |  |                           |  |
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| NAME OF PROJECT:            |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |               |            |  |                           |  |
| NAME OF PACKAGE:            |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |               |            |  |                           |  |
| TECHNICAL SPECIFICATION No: |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |               |            |  |                           |  |
| SL NO                       | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                  | UNIT    | Qty           | SUPPLY     |  | ERECTION AND COMMISIONING |  |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |               |            |  |                           |  |
| 6.7                         | Staircase Pressurization - For power house & controlblock; 8500CMH-150mmWg                                                                                                                                                                                                                                                                                                                                                                                   | NO*     | 2             |            |  |                           |  |
| 6.8                         | Staircase Pressurization - For Transformer / GIS hall; 6500CMH-150mmWg                                                                                                                                                                                                                                                                                                                                                                                       | NO*     | 2             |            |  |                           |  |
| 6.9                         | Locker Room/ First Aid Room- 1000CMH, 150MMWG                                                                                                                                                                                                                                                                                                                                                                                                                | NO*     | 2             |            |  |                           |  |
| 7*                          | Wall mounted dampers (gravity operated) for different areas.                                                                                                                                                                                                                                                                                                                                                                                                 | SQM*    | 20            |            |  |                           |  |
| 8*                          | Inlet Louvres/ Non Return Damper                                                                                                                                                                                                                                                                                                                                                                                                                             | SQM*    | 60            |            |  |                           |  |
| 9*                          | MS Duct With Epoxy paint ( grills etc)                                                                                                                                                                                                                                                                                                                                                                                                                       | SQM*    | 350           |            |  |                           |  |
| 10                          | 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).<br>Following fan shall have 30 mmwc static pressure.                                                                                                                                                                 |         |               |            |  |                           |  |
| 10.1*                       | Capacity 10,000 CMH with Motor rating 2.2 KW                                                                                                                                                                                                                                                                                                                                                                                                                 | NO*     | 2             |            |  |                           |  |
| 10.2*                       | Capacity 7,500 CMH with Motor rating 1.5 KW                                                                                                                                                                                                                                                                                                                                                                                                                  | NO*     | 1             |            |  |                           |  |
| 10.3*                       | Capacity 4,000 CMH with Motor rating 0.75 KW                                                                                                                                                                                                                                                                                                                                                                                                                 | NO*     | 1             |            |  |                           |  |
| 11                          | 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). Following fan shall have 20 mmwc static pressure.                                                                                                                                                                             |         |               |            |  |                           |  |
| 11.1*                       | Capacity 10,000 CMH with Motor rating 1.5 KW                                                                                                                                                                                                                                                                                                                                                                                                                 | NO*     | 1             |            |  |                           |  |
| 11.2*                       | Capacity 7,500 CMH with Motor rating 1.1 KW                                                                                                                                                                                                                                                                                                                                                                                                                  | NO*     | 1             |            |  |                           |  |
| 11.3*                       | Capacity 4,000 CMH with Motor rating 0.75 KW                                                                                                                                                                                                                                                                                                                                                                                                                 | NO*     | 1             |            |  |                           |  |
| 12                          | 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). Following fan shall have 15 mmwc static pressure.                                                                                                                                               |         |               |            |  |                           |  |
| 12.1*                       | Capacity 10,000 CMH withMotor rating 1.5 KW                                                                                                                                                                                                                                                                                                                                                                                                                  | NO*     | 1             |            |  |                           |  |
| 12.2*                       | Capacity 7,500 CMH with Motor rating 1.1 KW                                                                                                                                                                                                                                                                                                                                                                                                                  | NO*     | 2             |            |  |                           |  |
| 12.3*                       | Capacity 2,000 CMH with Motor rating 0.55 KW                                                                                                                                                                                                                                                                                                                                                                                                                 | NO*     | 1             |            |  |                           |  |
| 13                          | 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.Following fan shall have 10 mmwc static pressure.                                                                                                                                                                    |         |               |            |  |                           |  |
| 13.1*                       | Capacity 10,000 CMH with Motor rating 0.75 KW                                                                                                                                                                                                                                                                                                                                                                                                                | NO*     | 4             |            |  |                           |  |
| 13.2*                       | Capacity 7,500 CMH with Motor rating 0.55 KW                                                                                                                                                                                                                                                                                                                                                                                                                 | NO*     | 2             |            |  |                           |  |
| 13.3*                       | Capacity 2,000 CMH with Motor rating 0.37 KW                                                                                                                                                                                                                                                                                                                                                                                                                 | NO*     | 1             |            |  |                           |  |
| 14                          | 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). Following fan shall have 10 mmwc static pressure.                                                                                                                                                                                                                     |         |               |            |  |                           |  |
| 14.1*                       | Capacity 1500 CMH with Motor rating 100 watts                                                                                                                                                                                                                                                                                                                                                                                                                | NO*     | 10            |            |  |                           |  |
| B                           | AIR CONDITIONING SYSTEM                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |               |            |  |                           |  |
| 1                           | AIR COOLED SPLIT UNITS consisting of outdoor unit (having compressor condenser coils with fan and motor), indoor unit (having evaporator coil, filter,fan with motor), interconnecting refrigerant piping as per site requirement & fittings with insulation, cordless remote, electrical power cord upto the nearest available point along with isolator / MCB, fixing frame for indoor and outdoor unit, Stablizer,etc. (Maximum avaiable BEE star Rating) |         |               |            |  |                           |  |
| 1.1*                        | 10 TR actual capacity (ductable type, 415 V, 3 phase with isolation switch).                                                                                                                                                                                                                                                                                                                                                                                 | NO*     | 4             |            |  |                           |  |
| 1.2*                        | 5 TR actual capacity (ductable type, 415 V, 3 phase with isolation switch).                                                                                                                                                                                                                                                                                                                                                                                  | NO*     | 1             |            |  |                           |  |
| 1.3                         | MONSOON REHEATING / WINTER HEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.                                                                                                                                                                                                                                                                                                    | LOT     | 1             |            |  |                           |  |
| 1.4                         | HUMIDIFIER for each AC areas complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc                                                                                                                                                                                                                                                                                                | LOT     | 1             |            |  |                           |  |
| 1.5                         | FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc for all the each ductable AC areas                                                                                                                                                                                                                                                                                                               | LOT     | 1             |            |  |                           |  |
| 1.6                         | ACOUSTIC INSULATION of the first 5m of ducting from ductable split AC outlets with material and finish as per specifications.                                                                                                                                                                                                                                                                                                                                | LOT     | 1             |            |  |                           |  |
| 1.7*                        | 2.0 TR capacity (non-ductable type, 240 V, 1 phase isolation switch) i.e MCB of suitable rating as specified.                                                                                                                                                                                                                                                                                                                                                | NO*     | 17            |            |  |                           |  |
| 10                          | O&M Service for Air conditioning System                                                                                                                                                                                                                                                                                                                                                                                                                      |         |               |            |  |                           |  |
| 10.1                        | Operation of Air conditioning System                                                                                                                                                                                                                                                                                                                                                                                                                         | Months* | 12            | NA         |  |                           |  |
| 10.2                        | Maintenance of Air conditioning System along with control system as specified.                                                                                                                                                                                                                                                                                                                                                                               | Months* | 36            |            |  |                           |  |
| C                           | COMMON ITEM FOR AIR CONDITIONING & VENTILATION SYSTEM                                                                                                                                                                                                                                                                                                                                                                                                        |         |               |            |  |                           |  |
| 1                           | GSS zinc coating 275 gms/ m <sup>2</sup> finished ducting complete with hangers/ supports etc.                                                                                                                                                                                                                                                                                                                                                               |         |               |            |  |                           |  |
| 1.1*                        | 18G.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SQM*    | 2435          |            |  |                           |  |
| 1.2*                        | 20G.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SQM*    | 2435          |            |  |                           |  |
| 1.3*                        | 22G.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SQM*    | 3740          |            |  |                           |  |
| 1.4*                        | 24G.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SQM*    | 3740          |            |  |                           |  |
| 1.5*                        | Thermal insulation of duct with finish as specified. For Ventilation System                                                                                                                                                                                                                                                                                                                                                                                  | SQM*    | 3500          |            |  |                           |  |
| 1.6*                        | Thermal insulation of duct with finish as specified. For Air conditioning System                                                                                                                                                                                                                                                                                                                                                                             | SQM*    | 50            |            |  |                           |  |
| 2                           | Fire damper.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |               |            |  |                           |  |
| 2.1*                        | Fire damper with auto resetting, limit switches, indication lamps etc.                                                                                                                                                                                                                                                                                                                                                                                       | SQM*    | 54            |            |  |                           |  |
| 2.2*                        | Motorized actuator with single phase power supply for the above fire damper.                                                                                                                                                                                                                                                                                                                                                                                 | NO*     | 32            |            |  |                           |  |
| 2.3*                        | Fusible Link type Fire Damper                                                                                                                                                                                                                                                                                                                                                                                                                                | SQM*    | 10            |            |  |                           |  |
| 3*                          | MANUAL VOLUME CONTROL DAMPERS in GI construction as per specifications for supply / return ducts complete with fixing arrangement.                                                                                                                                                                                                                                                                                                                           | SQM*    | 10            |            |  |                           |  |
| 4*                          | MOTORIZED VOLUME CONTROL DAMPERS in GI construction as per specifications for supply / return ducts complete with fixing arrangement.                                                                                                                                                                                                                                                                                                                        | SQM*    | 54            |            |  |                           |  |
| 5*                          | Motorized actuator with single phase power supply for the above VCD.                                                                                                                                                                                                                                                                                                                                                                                         | NO*     | 32            |            |  |                           |  |
| 6                           | Grills / Diffusers                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |               |            |  |                           |  |
| 6.1*                        | SUPPLY AIR DIFFUSERS / GRILLS with VCD (Extruded Aluminium powder coated ) complete with fixing frames, nuts, bolts, gaskets, washers etc                                                                                                                                                                                                                                                                                                                    | SQM*    | 10            |            |  |                           |  |
| 6.2*                        | RETURN AIR DIFFUSERS / GRILLS without VCD (Extruded Aluminium powder coated) complete with fixing frames, nuts, bolts, gaskets, washers etc                                                                                                                                                                                                                                                                                                                  | SQM*    | 10            |            |  |                           |  |
| 6.3*                        | SUPPLY AIR DIFFUSERS / GRILLS with VCD (G.I ) complete with fixing frames, nuts, bolts, gaskets, washers etc                                                                                                                                                                                                                                                                                                                                                 | SQM*    | 150           |            |  |                           |  |
| 6.4*                        | RETURN AIR DIFFUSERS / GRILLS without VCD (G.I) complete with fixing frames, nuts, bolts, gaskets, washers etc                                                                                                                                                                                                                                                                                                                                               | SQM*    | 115           |            |  |                           |  |
| 7                           | RELAY BASED CONTROL SYSTEM for HVAC system - as specified as per tender specification                                                                                                                                                                                                                                                                                                                                                                        | LOT     | 1             |            |  |                           |  |
| 8                           | FIELD INSTRUMENTS like gauges, transmitter, switces for measuring of flow, temperature, pressure, level, humidity and other instrument required for local monitoring & control etc for HVAC System                                                                                                                                                                                                                                                           | LOT     | 1             |            |  |                           |  |
| 9                           | Structure Support for Duct, Pipe, Fan Fixing and other equipments etc.                                                                                                                                                                                                                                                                                                                                                                                       | LOT     | 1             |            |  |                           |  |
| 10                          | Elect distribution boards, LPBS, Cable trays, tray support, Termination & jointing kit, cabling items, Above ground earthing, LT power cables, LT control cables, screen control cables etc. for completeness of HVAC system :                                                                                                                                                                                                                               |         |               |            |  |                           |  |
| 10.1                        | LV Switchgear (panels, feeder modules, cabinet etc.)                                                                                                                                                                                                                                                                                                                                                                                                         | LOT     | 1             |            |  |                           |  |
| 10.2                        | Local Push Button Station(LPBS)                                                                                                                                                                                                                                                                                                                                                                                                                              | LOT     | 1             |            |  |                           |  |
| 10.3                        | Local Motor Starter                                                                                                                                                                                                                                                                                                                                                                                                                                          | LOT     | 1             |            |  |                           |  |

|                             |                                                                                                                                                                                                                                                                                                                   |      |     |        | Date of issue | 01.01.2020                |  |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|--------|---------------|---------------------------|--|
| NAME OF PROJECT:            |                                                                                                                                                                                                                                                                                                                   |      |     |        |               |                           |  |
| NAME OF PACKAGE:            |                                                                                                                                                                                                                                                                                                                   |      |     |        |               |                           |  |
| TECHNICAL SPECIFICATION No: |                                                                                                                                                                                                                                                                                                                   |      |     |        |               |                           |  |
| SL NO                       | DESCRIPTION                                                                                                                                                                                                                                                                                                       | UNIT | Qty | SUPPLY |               | ERECTION AND COMMISIONING |  |
|                             |                                                                                                                                                                                                                                                                                                                   |      |     |        |               |                           |  |
| 10.4                        | Cabling Items (Cable tray, tray support, clamps, tie, connector, gland etc)                                                                                                                                                                                                                                       | LOT  | 1   |        |               |                           |  |
| 10.5                        | Above Ground Earthing                                                                                                                                                                                                                                                                                             | LOT  | 1   |        |               |                           |  |
| 10.6                        | LT Control Cables                                                                                                                                                                                                                                                                                                 | LOT  | 1   |        |               |                           |  |
| 10.7                        | LT Power Cables                                                                                                                                                                                                                                                                                                   | LOT  | 1   |        |               |                           |  |
| 10.8                        | Screend Control Cables                                                                                                                                                                                                                                                                                            | LOT  | 1   |        |               |                           |  |
| 11*                         | 50NB GI medium class <b>INSULATED DRAIN WATER PIPING</b> from various equipment like AHUS (including equalising line), cooling water pumps etc upto nearest available drain point with necessary fittings like tees, reducers, expanders, elbows, flanges, valves with flanges, U trap etc as per specifications. | Rmt* | 50  |        |               |                           |  |
| 12                          | 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).                                                                                                                                  | LOT  | 1   |        |               | NA                        |  |
| 13                          | Total lumpsum price for commissioning spares inclusive of packing forwarding, transportation up to site, etc. (Bidder shall submit item-wise price break-up).                                                                                                                                                     | LOT  | 1   |        |               |                           |  |
| 14                          | Handling arrangement for HVAC equipments                                                                                                                                                                                                                                                                          |      |     |        |               |                           |  |
| 14.1*                       | Manually operated, platform trolley of 1 Ton capacity with base area 2m x 1.5m                                                                                                                                                                                                                                    | NO*  | 1   |        |               |                           |  |
| 14.2*                       | 1T Chain Pulley Block arrangment with travelling trolley                                                                                                                                                                                                                                                          | NO*  | 1   |        |               |                           |  |
| 14.3*                       | 2T Electric Hoist along with monorail arrangement as per specification                                                                                                                                                                                                                                            | NO*  | 1   |        |               |                           |  |

- NOTE
- 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 for adjustment and no separate unit rates shall be quoted. Unit rates shall be valid throughout the contract. Final qty. shall be paid as per actual measurment at site for erection for all the variable items.
- 2

Price format shall not be changed by the bidder as the bidder may get disqualified by doing so.
- 3

The BOQ mentioned above shall be read in conjunction with technical specification requirement. Any item required as per technical specification but not specifically indicated in above BOQ, shall deemed to be included in total prices quoted by bidder. No additional price shall be payable against such items.

|        |      |  |  |  |  |  |              |
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|        |      |  |  |  |  |  |              |
|        | Name |  |  |  |  |  | Company Seal |

|                                                                                                                |                                                                                                                                               |             |           |                          |              |                          |  |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|--------------------------|--------------|--------------------------|--|
| <div>SUGGESTED PRICE FORMAT</div> <div>APPENDIX-A</div> <div>Special tools &amp; tackles for maintenance</div> |                                                                                                                                               |             |           | Doc No:                  |              | PF-PE-413-571-11000-A001 |  |
|                                                                                                                |                                                                                                                                               |             |           | Rev No:                  |              | 0                        |  |
|                                                                                                                |                                                                                                                                               |             |           | Date of issue            |              | 01.01.2020               |  |
| NAME OF PROJECT:                                                                                               |                                                                                                                                               |             |           | 4X111 MW VISHUGAD HEP    |              |                          |  |
| NAME OF PACKAGE:                                                                                               |                                                                                                                                               |             |           | HVAC SYSTEM              |              |                          |  |
| TECHNICAL SPECIFICATION No:                                                                                    |                                                                                                                                               |             |           | PE-TS-413-571-11000-A001 |              |                          |  |
| SL NO                                                                                                          | DESCRIPTION                                                                                                                                   | UNIT        | Qty       |                          |              |                          |  |
| 1                                                                                                              | Measuring tape                                                                                                                                | NO          | 1         |                          |              |                          |  |
| 2                                                                                                              | Tachometer                                                                                                                                    | NO          | 1         |                          |              |                          |  |
| 3                                                                                                              | Double ended spanner                                                                                                                          | SET         | 1         |                          |              |                          |  |
| 4                                                                                                              | Ring spanners                                                                                                                                 | SET         | 1         |                          |              |                          |  |
| 5                                                                                                              | Gasket punch                                                                                                                                  | NO.         | 1         |                          |              |                          |  |
| 6                                                                                                              | Center punch                                                                                                                                  | NO.         | 1         |                          |              |                          |  |
| 7                                                                                                              | Hammer with wooden handles                                                                                                                    | NO.         | 1         |                          |              |                          |  |
| 8                                                                                                              | Scissors for sheet metal cutting                                                                                                              | NO.         | 1         |                          |              |                          |  |
| 9                                                                                                              | Torch light (suitable for 2 cells)                                                                                                            | NO.         | 1         |                          |              |                          |  |
| 10                                                                                                             | Multimeter                                                                                                                                    | NO.         | 1         |                          |              |                          |  |
| 11                                                                                                             | Anemometer                                                                                                                                    | NO.         | 1         |                          |              |                          |  |
| 12                                                                                                             | Compound pressure gauge                                                                                                                       | NO.         | 1         |                          |              |                          |  |
| 13                                                                                                             | Slide wrench 8"                                                                                                                               | NO.         | 1         |                          |              |                          |  |
| 14                                                                                                             | Slide wrench 10"                                                                                                                              | NO.         | 1         |                          |              |                          |  |
| 15                                                                                                             | Slide wrench 6"                                                                                                                               | NO.         | 1         |                          |              |                          |  |
| 16                                                                                                             | Box spanner set                                                                                                                               | SET         | 1         |                          |              |                          |  |
| 17                                                                                                             | Screw driver set                                                                                                                              | SET         | 1         |                          |              |                          |  |
| 18                                                                                                             | Align key set                                                                                                                                 | SET         | 1         |                          |              |                          |  |
| 19                                                                                                             | MS tool box                                                                                                                                   | NO          | 1         |                          |              |                          |  |
| NOTES                                                                                                          |                                                                                                                                               |             |           |                          |              |                          |  |
| 1                                                                                                              | ABOVE IS THE MINIMUM LIST. ANY OTHER TOOL / TACKLE REQUIRED FOR THE SYSTEM SHALL ALSO BE PROVIDED BY THE VENDOR WITHOUT ANY COST IMPLICATION. |             |           |                          |              |                          |  |
| Particulars of bidder / authorised representative                                                              |                                                                                                                                               |             |           |                          |              |                          |  |
|                                                                                                                |                                                                                                                                               |             |           |                          |              |                          |  |
|                                                                                                                | Name                                                                                                                                          | Designation | Signature | Date                     | Company Seal |                          |  |

| SUGGESTED PRICE FORMAT<br>APPENDIX-B<br>Commissioning spares |                                                                                                                                                     |                                  |                          | Doc No:       | PF-PE-413-571-11000-A001 |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------|---------------|--------------------------|
|                                                              |                                                                                                                                                     |                                  |                          | Rev No:       | 0                        |
|                                                              |                                                                                                                                                     |                                  |                          | Date of issue | 01.01.2020               |
| NAME OF PROJECT:                                             |                                                                                                                                                     |                                  | 4X111 MW VISHUGAD HEP    |               |                          |
| NAME OF PACKAGE:                                             |                                                                                                                                                     |                                  | HVAC SYSTEMM             |               |                          |
| TECHNICAL SPECIFICATION No:                                  |                                                                                                                                                     |                                  | PE-TS-413-571-11000-A001 |               |                          |
| SL NO                                                        | DESCRIPTION                                                                                                                                         | UNIT                             | Qty                      |               |                          |
| 1                                                            | FAN BELTS                                                                                                                                           | SET                              | 1                        |               |                          |
| 2                                                            | PRESSURE GAUGE                                                                                                                                      | NO                               | 1                        |               |                          |
| 3                                                            | TEMPERATURE GAUGE                                                                                                                                   | NO                               | 1                        |               |                          |
| 4                                                            | FILTER                                                                                                                                              | SET                              | 1                        |               |                          |
| 5                                                            | FACTORY BUILT ASSEMBLIES ( PCC/MCC/DB)                                                                                                              |                                  |                          |               |                          |
| 5.1                                                          | BUSBAR SUPPORTS ( HORIZONTAL)                                                                                                                       | 1 SET OF 3                       | 1                        |               |                          |
| 5.2                                                          | PRIMARY ISOLATING CONTACTS (BUS SIDE)                                                                                                               | 1 SET OF 3                       | 1                        |               |                          |
| 5.3                                                          | PRIMARY ISOLATING CONTACTS (LOAD SIDE)                                                                                                              | 1 SET OF 3                       | 1                        |               |                          |
| 5.4                                                          | SECONDARY ISOLATING CONTACTS                                                                                                                        | 1 SET OF 3                       | 1                        |               |                          |
| 5.5                                                          | GASKETS (EACH SIZE)                                                                                                                                 | SET                              | 1                        |               |                          |
| 5.6                                                          | RESISTOR ( EACH SIZE)                                                                                                                               | NOS.                             | 12                       |               |                          |
| 5.7                                                          | FIXED TERMINAL BLOCK ( CONTROL)                                                                                                                     | 1 WAY                            | 1                        |               |                          |
| 5.8                                                          | SHROUDS ( ACB O/B TERMINALS)                                                                                                                        | SET                              | 1                        |               |                          |
| 5.9                                                          | WIRE ( FOR SECONDARY WIRING)                                                                                                                        |                                  |                          |               |                          |
| 5.9.1                                                        | 2.5 MM2                                                                                                                                             | COIL                             | 1                        |               |                          |
| 5.9.2                                                        | 1.5 MM2                                                                                                                                             | COIL                             | 1                        |               |                          |
| 5.10                                                         | LUGS ( FOR SECONDARY WIRING)                                                                                                                        | NOS.                             | 12                       |               |                          |
| 5.11                                                         | FERRULES Set*                                                                                                                                       | PACKET                           | 1                        |               |                          |
| 6                                                            | <b>AIR CIRCUIT BREAKER</b>                                                                                                                          |                                  |                          |               |                          |
| 6.1                                                          | SHUNT TRIP COIL                                                                                                                                     | NOS.                             | 1                        |               |                          |
| 6.2                                                          | SPRING CHARGING MOTOR                                                                                                                               | NOS.                             | 1                        |               |                          |
| 6.3                                                          | CLOSING RELEASE COIL                                                                                                                                | NOS.                             | 1                        |               |                          |
| 6.4                                                          | AUXILIARY SWITCH                                                                                                                                    | NOS.                             | 1                        |               |                          |
| 6.5                                                          | SOLID STATE TRIP DEVICES ( OR SPARES THEROF)                                                                                                        | SET                              | 1                        |               |                          |
| 7                                                            | <b>ISOLATING SWITCH ( FOR EACH RATINGS)</b>                                                                                                         |                                  |                          |               |                          |
| 7.1                                                          | COMPLETE UNIT ( EACH RATING)                                                                                                                        | NOS.                             | 1                        |               |                          |
| 7.2                                                          | MAIN CONTACT KIT                                                                                                                                    | 1 SET OF 3                       | 1                        |               |                          |
| 7.3                                                          | ARC CHAMBER                                                                                                                                         | NOS.                             | 1                        |               |                          |
| 8                                                            | <b>POWER CONTACTORS</b>                                                                                                                             |                                  |                          |               |                          |
| 8.1                                                          | COMPLETE UNIT ( EACH RATING)                                                                                                                        | NOS.                             | 1                        |               |                          |
| 8.2                                                          | CONTACTOR COIL ( EACH SIZE)                                                                                                                         | NOS.                             | 1                        |               |                          |
| 8.3                                                          | CONTACTS KIT ( MAIN)                                                                                                                                | 1 SET OF 3                       | 1                        |               |                          |
| 8.4                                                          | CONTACTS KIT ( AUXILIARY)                                                                                                                           | SETS OF STANDARD NUMBER OF PAIRS | 1                        |               |                          |
| 9                                                            | <b>AUXILIARY CONTACTORS</b>                                                                                                                         |                                  |                          |               |                          |
| 9.1                                                          | COMPLETE UNIT                                                                                                                                       | NOS.                             | 1                        |               |                          |
| 9.2                                                          | CONTRACTOR COIL                                                                                                                                     | NOS.                             | 1                        |               |                          |
| 10                                                           | <b>HRC FUSE</b>                                                                                                                                     |                                  |                          |               |                          |
| 10.1                                                         | FUSE BASE ( EACH RATING)                                                                                                                            | NOS.                             | 1                        |               |                          |
| 10.2                                                         | FUSE LINK ( EACH RATING)                                                                                                                            | NOS.                             | 2                        |               |                          |
| 11                                                           | <b>PUSH BUTTONS</b>                                                                                                                                 |                                  |                          |               |                          |
| 11.1                                                         | ACTUATOR CONTACTS                                                                                                                                   | NOS.                             | 1                        |               |                          |
| 11.2                                                         | ELEMENTS                                                                                                                                            | SET                              | 1                        |               |                          |
| 12                                                           | <b>INDICATING LAMPS</b>                                                                                                                             |                                  |                          |               |                          |
| 12.1                                                         | COMPLETE UNIT                                                                                                                                       | NOS.                             | 1                        |               |                          |
| 12.3                                                         | LENS(ASSORTED)                                                                                                                                      | NOS.                             | 1                        |               |                          |
| 13                                                           | <b>OTHERS</b>                                                                                                                                       |                                  |                          |               |                          |
| 13.1                                                         | SELECTOR & CONTROL SWITCH ( EACH TYPE)                                                                                                              | NOS.                             | 1                        |               |                          |
| 13.2                                                         | CONTROL TRANSFORMER ( EACH RATING)                                                                                                                  | NOS.                             | 1                        |               |                          |
| 13.3                                                         | MCB                                                                                                                                                 | ONE OF EACH RATING               | 1                        |               |                          |
| NOTES                                                        |                                                                                                                                                     |                                  |                          |               |                          |
| 1                                                            | ABOVE IS THE MINIMUM LIST. ANY OTHER COMMISSIONING SPARE REQUIRED FOR THE SYSTEM SHALL ALSO BE PROVIDED BY THE VENDOR WITHOUT ANY COST IMPLICATION. |                                  |                          |               |                          |
| Particulars of bidder / authorised representative            |                                                                                                                                                     |                                  |                          |               |                          |
|                                                              |                                                                                                                                                     |                                  |                          |               |                          |
|                                                              | Name                                                                                                                                                | Designation                      | Signature                | Date          | Company Seal             |

|                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------|------|--------------|
| SUGGESTED PRICE FORMAT                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                          | Doc No:                                                                                                   | PF-PE-413-571-11000-A001 |      |              |
| ANNEXURE - II                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                          | Rev No:                                                                                                   | 0                        |      |              |
| LIST OF MANDATORY SPARES                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                          | Date of issue                                                                                             | 01.01.2020               |      |              |
| NAME OF PROJECT:                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                          | 4X111 MW VISHUGAD HEP                                                                                     |                          |      |              |
| NAME OF PACKAGE:                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                          | HVAC SYSTEM                                                                                               |                          |      |              |
| TECHNICAL SPECIFICATION No:                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                          | PE-TS-413-571-11000-A001                                                                                  |                          |      |              |
| S. No.                                                                                                                                                                                                                                                                                                                       | Description                                                                                                                                                                                                                                                                                                                                              | UNIT                                                                                                      | Qty                      |      |              |
| A                                                                                                                                                                                                                                                                                                                            | MECHANICAL                                                                                                                                                                                                                                                                                                                                               |                                                                                                           |                          |      |              |
|                                                                                                                                                                                                                                                                                                                              | VENTILATION SYSTEM                                                                                                                                                                                                                                                                                                                                       |                                                                                                           |                          |      |              |
| 1                                                                                                                                                                                                                                                                                                                            | Bearings for each type of fan                                                                                                                                                                                                                                                                                                                            | Set                                                                                                       | 2                        |      |              |
| 2                                                                                                                                                                                                                                                                                                                            | Bearings set for each type of electric motor                                                                                                                                                                                                                                                                                                             | Set                                                                                                       | 2                        |      |              |
| 3                                                                                                                                                                                                                                                                                                                            | V-Belts / Flexible coupling for each type of fan                                                                                                                                                                                                                                                                                                         | Set                                                                                                       | 2                        |      |              |
| 4                                                                                                                                                                                                                                                                                                                            | Filter element                                                                                                                                                                                                                                                                                                                                           | Sets                                                                                                      | 2                        |      |              |
| 5                                                                                                                                                                                                                                                                                                                            | Water Cooler                                                                                                                                                                                                                                                                                                                                             | Set                                                                                                       | 1                        |      |              |
| B                                                                                                                                                                                                                                                                                                                            | AIR CONDITIONING SYSTEM                                                                                                                                                                                                                                                                                                                                  |                                                                                                           |                          |      |              |
| B1                                                                                                                                                                                                                                                                                                                           | Ductable Split AC                                                                                                                                                                                                                                                                                                                                        |                                                                                                           |                          |      |              |
| 1                                                                                                                                                                                                                                                                                                                            | Fan-motor bearing for outdoor unit & indoor unit                                                                                                                                                                                                                                                                                                         | Set                                                                                                       | 2                        |      |              |
| 2                                                                                                                                                                                                                                                                                                                            | Filter                                                                                                                                                                                                                                                                                                                                                   | Set                                                                                                       | 2                        |      |              |
| 3                                                                                                                                                                                                                                                                                                                            | Expansion valve                                                                                                                                                                                                                                                                                                                                          | Set                                                                                                       | 2                        |      |              |
| B2                                                                                                                                                                                                                                                                                                                           | Non- Ductable Split AC                                                                                                                                                                                                                                                                                                                                   |                                                                                                           |                          |      |              |
| 1                                                                                                                                                                                                                                                                                                                            | Fan-motor bearing for outdoor unit                                                                                                                                                                                                                                                                                                                       | Set                                                                                                       | 2                        |      |              |
| 2                                                                                                                                                                                                                                                                                                                            | Filter                                                                                                                                                                                                                                                                                                                                                   | Set                                                                                                       | 2                        |      |              |
| 3                                                                                                                                                                                                                                                                                                                            | Expansion valve                                                                                                                                                                                                                                                                                                                                          | Set                                                                                                       | 2                        |      |              |
| C                                                                                                                                                                                                                                                                                                                            | Electrical Spares                                                                                                                                                                                                                                                                                                                                        |                                                                                                           |                          |      |              |
| 1                                                                                                                                                                                                                                                                                                                            | Spare cable lengths of each type and size of power cables used                                                                                                                                                                                                                                                                                           | 5% of the total cable length but at least one length equal to the longest cable length used in the scope. |                          |      |              |
| 2                                                                                                                                                                                                                                                                                                                            | Cable racks, trays, supports, embedment plats, conduits etc.                                                                                                                                                                                                                                                                                             | 5% of the total scope of quantities of each type & size                                                   |                          |      |              |
| 3                                                                                                                                                                                                                                                                                                                            | Other Accessories:                                                                                                                                                                                                                                                                                                                                       |                                                                                                           |                          |      |              |
|                                                                                                                                                                                                                                                                                                                              | Termination kits for each type and size of cable Sealing ends / glands for each cable size Cable lugs for each type and size of cable Pre-fabricated straight through joints for each type and size of cables Cable marker ferrules Self adhesive marker Aluminium strips Couplings, elbow plates, G.I. flats, brackets, rock bolts etc. (for each type) | 5% of the total scope of each accessory but not less than 2pcs. of each item                              |                          |      |              |
| 4                                                                                                                                                                                                                                                                                                                            | 415V completely assembled ACBs                                                                                                                                                                                                                                                                                                                           | 10% of each type but not less than one                                                                    |                          |      |              |
| 5                                                                                                                                                                                                                                                                                                                            | 415 V MCCBs                                                                                                                                                                                                                                                                                                                                              | 10% of each type but not less than one                                                                    |                          |      |              |
| 6                                                                                                                                                                                                                                                                                                                            | 240 V AC, MCBs                                                                                                                                                                                                                                                                                                                                           | 10% of each type but not less than one                                                                    |                          |      |              |
| 7                                                                                                                                                                                                                                                                                                                            | 220V DC MCBs                                                                                                                                                                                                                                                                                                                                             | 10% of each type but not less than one                                                                    |                          |      |              |
| 8                                                                                                                                                                                                                                                                                                                            | Spares for ACBs -1No. Each of following                                                                                                                                                                                                                                                                                                                  |                                                                                                           |                          |      |              |
| i)                                                                                                                                                                                                                                                                                                                           | i) Main Contacts                                                                                                                                                                                                                                                                                                                                         | 5 sets of each rating                                                                                     |                          |      |              |
| ii)                                                                                                                                                                                                                                                                                                                          | ii) Arcing contacts                                                                                                                                                                                                                                                                                                                                      | 5 sets of each rating                                                                                     |                          |      |              |
| iii)                                                                                                                                                                                                                                                                                                                         | iii) Trip coils                                                                                                                                                                                                                                                                                                                                          | 10 nos. of each rating                                                                                    |                          |      |              |
| iv)                                                                                                                                                                                                                                                                                                                          | iv) Closing coils                                                                                                                                                                                                                                                                                                                                        | 10 nos. of each rating                                                                                    |                          |      |              |
| v)                                                                                                                                                                                                                                                                                                                           | v)Spring charging                                                                                                                                                                                                                                                                                                                                        | 6 nos. for each rating mechanism complete with                                                            |                          |      |              |
| vi)                                                                                                                                                                                                                                                                                                                          | vi) Closing & tripping springs                                                                                                                                                                                                                                                                                                                           | 4 sets of each ratings                                                                                    |                          |      |              |
| vii)                                                                                                                                                                                                                                                                                                                         | vii) Auxiliary contact assembly                                                                                                                                                                                                                                                                                                                          | 6 nos. of each rating                                                                                     |                          |      |              |
| viii)                                                                                                                                                                                                                                                                                                                        | viii) Local/Remote selector                                                                                                                                                                                                                                                                                                                              | 4 Nos. of each rating switch                                                                              |                          |      |              |
| 6                                                                                                                                                                                                                                                                                                                            | Relays                                                                                                                                                                                                                                                                                                                                                   | 2 nos. of each type                                                                                       |                          |      |              |
| 7                                                                                                                                                                                                                                                                                                                            | 7. CTs                                                                                                                                                                                                                                                                                                                                                   | 2 set of each rating                                                                                      |                          |      |              |
| 8                                                                                                                                                                                                                                                                                                                            | 8. PTs                                                                                                                                                                                                                                                                                                                                                   | 2 set of each rating                                                                                      |                          |      |              |
| 9                                                                                                                                                                                                                                                                                                                            | 9. Voltmeters                                                                                                                                                                                                                                                                                                                                            | 2 nos.                                                                                                    |                          |      |              |
| 10                                                                                                                                                                                                                                                                                                                           | 10. Ammeters                                                                                                                                                                                                                                                                                                                                             | 6 nos.                                                                                                    |                          |      |              |
| 11                                                                                                                                                                                                                                                                                                                           | 11. KWH meters                                                                                                                                                                                                                                                                                                                                           | 6 nos.                                                                                                    |                          |      |              |
| 12                                                                                                                                                                                                                                                                                                                           | 12. Glass covers for relays with rubber gaskets                                                                                                                                                                                                                                                                                                          | 6 nos. of each size                                                                                       |                          |      |              |
| 13                                                                                                                                                                                                                                                                                                                           | 13. Glass covers for measuring instruments with rubber gaskets                                                                                                                                                                                                                                                                                           | 6 nos. of each size                                                                                       |                          |      |              |
| 14                                                                                                                                                                                                                                                                                                                           | 14. Indicating lamps                                                                                                                                                                                                                                                                                                                                     | 200 nos.                                                                                                  |                          |      |              |
| 15                                                                                                                                                                                                                                                                                                                           | 15. Indicating lamp assembly                                                                                                                                                                                                                                                                                                                             | 200 nos. (W/O lamp)                                                                                       |                          |      |              |
| 16                                                                                                                                                                                                                                                                                                                           | 16. Glass dome covers of different colours                                                                                                                                                                                                                                                                                                               | 500 nos. of each colour                                                                                   |                          |      |              |
| 17                                                                                                                                                                                                                                                                                                                           | Fuse units                                                                                                                                                                                                                                                                                                                                               | 100 sets of each rating                                                                                   |                          |      |              |
| 18                                                                                                                                                                                                                                                                                                                           | Push buttons                                                                                                                                                                                                                                                                                                                                             | 100 nos. of each shade                                                                                    |                          |      |              |
| 19                                                                                                                                                                                                                                                                                                                           | Contactors                                                                                                                                                                                                                                                                                                                                               | 12 nos. of each rating                                                                                    |                          |      |              |
| 20                                                                                                                                                                                                                                                                                                                           | Timers                                                                                                                                                                                                                                                                                                                                                   | 12 nos.                                                                                                   |                          |      |              |
| 21                                                                                                                                                                                                                                                                                                                           | Terminal blocks                                                                                                                                                                                                                                                                                                                                          | 50 nos.                                                                                                   |                          |      |              |
| 22                                                                                                                                                                                                                                                                                                                           | Brass screws                                                                                                                                                                                                                                                                                                                                             | 50 packets of each size                                                                                   |                          |      |              |
| 23                                                                                                                                                                                                                                                                                                                           | Spring washers                                                                                                                                                                                                                                                                                                                                           | 50 packets of each size                                                                                   |                          |      |              |
| 24                                                                                                                                                                                                                                                                                                                           | Ferrules                                                                                                                                                                                                                                                                                                                                                 | 1000 nos. of each size                                                                                    |                          |      |              |
| 25                                                                                                                                                                                                                                                                                                                           | Auto-manual switches                                                                                                                                                                                                                                                                                                                                     | 12 nos.                                                                                                   |                          |      |              |
| 26                                                                                                                                                                                                                                                                                                                           | Bus bar supporting insulators with fittings                                                                                                                                                                                                                                                                                                              | 30 nos.                                                                                                   |                          |      |              |
| 27                                                                                                                                                                                                                                                                                                                           | Strip heaters                                                                                                                                                                                                                                                                                                                                            | 12 nos.                                                                                                   |                          |      |              |
| 28                                                                                                                                                                                                                                                                                                                           | Thermostats for heaters                                                                                                                                                                                                                                                                                                                                  | 6 nos.                                                                                                    |                          |      |              |
| D                                                                                                                                                                                                                                                                                                                            | C&I Spares                                                                                                                                                                                                                                                                                                                                               |                                                                                                           |                          |      |              |
| 1                                                                                                                                                                                                                                                                                                                            | Measuring transmitter of type / model used                                                                                                                                                                                                                                                                                                               | 02 sets of each type                                                                                      |                          |      |              |
| 2                                                                                                                                                                                                                                                                                                                            | Sensors/transducers of type and model used                                                                                                                                                                                                                                                                                                               | 02 sets of each type                                                                                      |                          |      |              |
| 3                                                                                                                                                                                                                                                                                                                            | Indicating instruments of type/model used                                                                                                                                                                                                                                                                                                                | 02 sets of each type                                                                                      |                          |      |              |
| 4                                                                                                                                                                                                                                                                                                                            | Relays of type/model used                                                                                                                                                                                                                                                                                                                                | 02 sets of each type                                                                                      |                          |      |              |
| 5                                                                                                                                                                                                                                                                                                                            | Indicating Instruments                                                                                                                                                                                                                                                                                                                                   | 01 set of each type                                                                                       |                          |      |              |
| 6                                                                                                                                                                                                                                                                                                                            | Control Switch, Selector Switches, Push Buttons, Indicating                                                                                                                                                                                                                                                                                              | 20 % of each type                                                                                         |                          |      |              |
| 7                                                                                                                                                                                                                                                                                                                            | Bulbs for indicating lamps                                                                                                                                                                                                                                                                                                                               | 20 % of each type                                                                                         |                          |      |              |
| 8                                                                                                                                                                                                                                                                                                                            | Heating resistor for thermostat for cubicle heater                                                                                                                                                                                                                                                                                                       | 02 sets of each type                                                                                      |                          |      |              |
| 9                                                                                                                                                                                                                                                                                                                            | Operator Key board                                                                                                                                                                                                                                                                                                                                       | One                                                                                                       |                          |      |              |
| 10                                                                                                                                                                                                                                                                                                                           | Terminals of each type                                                                                                                                                                                                                                                                                                                                   | 200                                                                                                       |                          |      |              |
| 11                                                                                                                                                                                                                                                                                                                           | Fuses of each type                                                                                                                                                                                                                                                                                                                                       | 200 each type                                                                                             |                          |      |              |
| TOTAL                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
| Notes:                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
| a) Spares listed in Price Schedule is bare minimum requirement. In case any additional mandatory spares required for 5 years of successful operation of the system or those covered elsewhere in the tender specification apart from specified above, same shall be deemed to have been covered in bidder's scope of supply. |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
| b) One set corresponds to actual quantity of components and devices as installed for one equipment/item/assembly.                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
| c) All Spares shall be supplied as per the requirement of the specifications. In case any spare indicated in the specification is "not applicable" for particular equipment, then suitable applicable alternate spare has been offered / shall be supplied by the bidder without any financial implication."                 |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
| d) Any item which is quoted as "not applicable" by the bidder in the above list and is found to be "applicable" at a later date shall be supplied by the bidder without any commercial and delivery implication.                                                                                                             |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
| e) Any cell left blank in the unpriced schedule shall be treated as "Quoted" and is included in total price.                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
| Particulars of bidder / authorised representative                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
|                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |                          |      |              |
|                                                                                                                                                                                                                                                                                                                              | Name                                                                                                                                                                                                                                                                                                                                                     | Designation                                                                                               | Signature                | Date | Company Seal |