

ANNEXURE -A



**पिंपरी चिंचवड महानगरपालिका, पिंपरी - १८
जलशुद्धीकरण केंद्र सेक्टर २३ (विद्युत)**

कामाचे नाव :- पवना धरणातून से क्र २३ निगडी येथील जलशुद्धीकरण केंद्रापर्यंत थेट पाईप लाईन टाकणे या कामातील विद्युत विषयक कामासाठी दर पृथःकरण करणेबाबत.

| Sr. No. | Description | Unit | Rate In Rs (Excluding GST) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|--|-------------|----------------------------|---------------------------------|---|-------------|---|--------------|----|------------------------|---|---------------|---|-----------|---------------|---------|--------|---------------|--------|-------------|-----------------|--------------|-------------------------------------|------------|--------------------|-----------------|--------|------------------|--------------------|----------------------|------|--------------|------|-----------|-----------|------|--|
| 1 | <p>Designing, Supplying, Installing at site, Testing & Commissioning of 6.6 kV Switchboard HT Feeder Panel.</p> <table border="1"> <thead> <tr> <th>Feeder Type</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>Incomer from Transformer 6.6 KV</td> <td align="center">2</td> </tr> <tr> <td>Bus Coupler</td> <td align="center">1</td> </tr> <tr> <td>Pump Feeders</td> <td align="center">12</td> </tr> <tr> <td>Capacitor Bank Feeders</td> <td align="center">2</td> </tr> <tr> <td>Spare Feeders</td> <td align="center">2</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>Voltage</td> <td>6.6 kV</td> </tr> <tr> <td>Busbar Rating</td> <td>2500 A</td> </tr> <tr> <td>Fault Level</td> <td>33 kA for 3 sec</td> </tr> <tr> <td>Breaker Type</td> <td>Vacuum Circuit Breaker Drawout Type</td> </tr> <tr> <td>Panel Type</td> <td>Metal Clad Drawout</td> </tr> <tr> <td>Busbar Material</td> <td>Copper</td> </tr> <tr> <td>Protection Relay</td> <td>Numerical IEC61850</td> </tr> <tr> <td>Degree of Protection</td> <td>IP4X</td> </tr> <tr> <td>Internal Arc</td> <td>AFLR</td> </tr> <tr> <td>Standards</td> <td>IEC 62271</td> </tr> </tbody> </table> <p>Typical VCB Feeder Panel Power Components</p> <ul style="list-style-type: none"> • VCB 400A / 2000A • CTs • PTs • Busbars • Vacuum Bottles • Earth Switch • Cable CTs <p>Protection & Control</p> <ul style="list-style-type: none"> • Numerical Relay • Multifunction Meter • Ammeter / Voltmeter • Selector Switches • Annunciation System | Feeder Type | Qty | Incomer from Transformer 6.6 KV | 2 | Bus Coupler | 1 | Pump Feeders | 12 | Capacitor Bank Feeders | 2 | Spare Feeders | 2 | Parameter | Specification | Voltage | 6.6 kV | Busbar Rating | 2500 A | Fault Level | 33 kA for 3 sec | Breaker Type | Vacuum Circuit Breaker Drawout Type | Panel Type | Metal Clad Drawout | Busbar Material | Copper | Protection Relay | Numerical IEC61850 | Degree of Protection | IP4X | Internal Arc | AFLR | Standards | IEC 62271 | Each | |
| Feeder Type | Qty | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Incomer from Transformer 6.6 KV | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bus Coupler | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pump Feeders | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitor Bank Feeders | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spare Feeders | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Parameter | Specification | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Voltage | 6.6 kV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Busbar Rating | 2500 A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fault Level | 33 kA for 3 sec | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Breaker Type | Vacuum Circuit Breaker Drawout Type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panel Type | Metal Clad Drawout | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Busbar Material | Copper | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Protection Relay | Numerical IEC61850 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Degree of Protection | IP4X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal Arc | AFLR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standards | IEC 62271 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- Trip Circuit Supervision
- Master Trip Relay
- Motor Protection

Mechanical

- Space Heater
- LED Indications
- Terminal Blocks
- Cable Alley
- Gland Plate
- Phase sequence indicator

As per Standard design

Bus Coupler Panel

for HT Transformer (15MVA 2 nos) coupling – 1

- 6.6 kV, 2000 A, 25 kA VCB bus coupler with interlocking

Purpose

- Bus section interconnection
- Load transfer
- Maintenance flexibility
- Fault isolation

Protection & Metering Components

Other Accessories –

- Ammeter
- Voltmeter
- Multifunction meter
- Selector switches
- Energy meter

Safety & Interlocking

- Mechanical interlock
- Electrical interlock
- Truck position interlock
- Earth switch interlock
- Door interlock

VCB for Incoming Supply From Transformer 6.6 kv

VCB Rating – 2000A

Voltage – 6.6 KV

Fault Level - 31.5 kA

CT Ratio - 1500/1 A

Protection Relay - Numerical Transformer Protection

Metering - Multifunction Energy Meter

Protection Functions - 50/51, 50N/51N, 27/59, 81, Trip Circuit Supervision

Breaker Type - Draw-out Vacuum Circuit Breaker

Pump Motor Outgoing VCB Specification

VCB Rating – 630 A

Voltage – 6.6 KV

Fault Level - 31.5 kA

CT Ratio - 300/1 A

Protection Relay - Numerical Transformer Protection

Metering - Ammeter + MFM + Master Relay

Protection Functions - 50/51, 50N/51N, 27/59, 81, Trip Circuit Supervision

Breaker Type - Draw-out Vacuum Circuit Breaker

Motor Protection

| | <ul style="list-style-type: none"> • Overload • Locked Rotor • Single Phasing • Phase Imbalance • Under Current • Earth Fault • Thermal Overload • Excessive Start Protection | | | | | | | | | | | | | | |
|-------------------------|--|-----------|-------|----------|--------|----------------|--------|----------------|-------|-------------------------|---------------|------------|------------------------------|------|--|
| 2 | <p>Designing, Supplying, Installing, Testing & Commissioning of 22KV VCB Panel (isolator) with LBS (2 incomers, 4 outgoing) For Tranformer</p> <p>Including following items as per standards & required quantity & Suitable capacity -</p> <ul style="list-style-type: none"> • Out going feeder VCB's • Transformer feeders • Protection CT / PT arrangements • Annunciation & relay schemes • Trip circuit supervision • All Transformer Protection <p>Included Components</p> <ul style="list-style-type: none"> • Vacuum circuit breaker • Current Transformers (CT) • Potential Transformers (PT) • Numerical Protection Relay • Cable termination chamber • Earth switch • Mimic and indication lamp • Annunciation System - 12 Window annunciator <p>Busbar - 1600 A TP Copper Bus</p> <p>Typical Specification</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Material</td> <td>Copper</td> </tr> <tr> <td>Current Rating</td> <td>2000 A</td> </tr> <tr> <td>Voltage Rating</td> <td>22 KV</td> </tr> <tr> <td>Short Circuit Withstand</td> <td>25 kA / 3 sec</td> </tr> <tr> <td>Insulation</td> <td>Heat Shrink / Epoxy Supports</td> </tr> </tbody> </table> <p>With all required Alarm Functions -</p> <p>Purpose</p> <ul style="list-style-type: none"> • Bus section interconnection • Load transfer • Maintenance flexibility • Fault isolation <p>Protection & Metering Components</p> <p>Other Accessories –</p> <ul style="list-style-type: none"> • Ammeter • Voltmeter • Multifunction meter • Selector switches • Energy meter • Phase sequence Indication <p>Safety & Interlocking</p> <ul style="list-style-type: none"> • Mechanical interlock • Electrical interlock | Parameter | Value | Material | Copper | Current Rating | 2000 A | Voltage Rating | 22 KV | Short Circuit Withstand | 25 kA / 3 sec | Insulation | Heat Shrink / Epoxy Supports | Each | |
| Parameter | Value | | | | | | | | | | | | | | |
| Material | Copper | | | | | | | | | | | | | | |
| Current Rating | 2000 A | | | | | | | | | | | | | | |
| Voltage Rating | 22 KV | | | | | | | | | | | | | | |
| Short Circuit Withstand | 25 kA / 3 sec | | | | | | | | | | | | | | |
| Insulation | Heat Shrink / Epoxy Supports | | | | | | | | | | | | | | |

- Truck position interlock
- Earth switch interlock
- Door interlock

Applicable Standards

| Equipment | Standard |
|------------------|-------------------------|
| VCB Panel | IEC 62271-200 / IS 3427 |
| Vacuum Breaker | IEC 62271-100 |
| CT | IS 2705 |
| PT | IS 3156 |
| Transformer | IS 2026 |
| XLPE Cable | IS 7098 Part-2 |
| Protection Relay | IEC 60255 |

**LT Panel -
Designing, providing, Installation at site, Testing & commissioning L.T. Panel for receiving supply from transformer of 200 kVA to LT Panel to distributing and operate pump house equipment's as per detailed specifications.**

Proposed LT Switchboard Line-up

| Section | Description | Qty |
|---------|----------------------------|-----|
| A | Transformer Incomer – 1 | 1 |
| B | Transformer Incomer – 2 | 1 |
| C | Bus Coupler | 1 |
| D | MCC Feeder Section | 1 |
| E | Lighting & Utility Section | 1 |
| F | HVAC & Ventilation Section | 1 |
| G | UPS & SCADA Section | 1 |
| H | Spare Feeder Section | 1 |

3

Each

| Parameter | Rating |
|--------------------------|-----------------|
| Rated Voltage | 415 V AC |
| Rated Insulation Voltage | 1000 V |
| Frequency | 50 Hz |
| Busbar Rating | 2500 A |
| Short Circuit Rating | 50 kA for 1 sec |
| Form of Separation | Form 4B |
| Degree of Protection | IP54 Indoor |

| | |
|--------------------|------------------------------|
| Busbar Material | Electrolytic Copper |
| Neutral Bus Rating | 100% |
| Earth Bus Rating | 50% Copper |
| Cable Entry | Bottom |
| Mounting | Floor Mounted |
| Type | Draw-out / Fixed Combination |

MCC PANEL-

| Item | Rating |
|-------------------|---------------------|
| Incomer ACB | 630 A, 4 Pole |
| Breaking Capacity | 50 kA |
| Protection | LSIG |
| Metering | Multifunction Meter |
| CT Ratio | 600/5 A |

- Multifunction Meter (LED display), 3Ph, Parameters: V, A, F, PF, kW, kVA, Old energy, On hours, site selectable kWh/ kVAh, CL: 1, Aux Sup: 90-300V AC/DC, Size: 96X96, With: RS485
- Analogue Voltmeter 0-500V
- Analogue Ammeter 0-630A
- 1KVA, Control Transformer, Input Voltage 440VAC & Output Voltage 230VAC
- Including all standard items like indicating lamps, spreaders, AL busbar of suitable rating, Extended rotary handles, relays, Push buttons, emergency stop, Neutral links etc.
- With all other standard required accessories

Motor Feeders

| Load Description | Qty | Motor Rating | Feeder Type | Recommended Protection |
|--------------------|----------|--------------|-------------|------------------------|
| Dewatering Pumps | 2 | 7.5 kW | DOL | MPCB + OLR |
| Sump Pumps | 2 | 5 kW | DOL | MPCB + OLR |
| Water Supply Pumps | 2 | 3 kW | DOL | MPCB + OLR |
| Ventilation Fans | Multiple | 1-3 kW | DOL | MCCB |
| HVAC Units | Multiple | 2-5 kW | DOL | MCCB |

Lighting Feeders

| Description | Load | Feeder Rating |
|--------------------|-------|---------------|
| Internal Lighting | 10 kW | 63 A TPN MCCB |
| External Lighting | 3 kW | 32 A TPN MCCB |
| Emergency Lighting | 1 kW | 32 A TPN MCCB |

UPS & SCADA Feeders

| Description | Load | Feeder |
|----------------|-------|-----------|
| UPS System | 10 kW | 63 A MCCB |
| SCADA & PLC | 5 kW | 32 A MCB |
| Control Supply | 5 kW | 32 A MCB |

MCC FEEDER SCHEDULE

| Feeder | Rating | Protection | Qty |
|---------------------|--------|------------------------|-----|
| Dewatering Pump-1 | 32 A | MPCB + Contactor + OLR | 1 |
| Dewatering Pump-2 | 32 A | MPCB + Contactor + OLR | 1 |
| Sump Pump-1 | 25 A | MPCB + Contactor + OLR | 1 |
| Sump Pump-2 | 25 A | MPCB + Contactor + OLR | 1 |
| Water Pump-1 | 16 A | MPCB + Contactor + OLR | 1 |
| Water Pump-2 | 16 A | MPCB + Contactor + OLR | 1 |
| Ventilation Feeder | 32 A | MCB | 1 |
| HVAC Feeder | 63 A | MCB | 1 |
| Lighting Feeder | 63 A | MCB | 1 |
| Street Light Feeder | 32 A | MCB | 1 |
| UPS Feeder | 63 A | MCB | 1 |
| SCADA Feeder | 32 A | MCB | 1 |
| Utility Socket | 63 A | MCB | 1 |

| | | | |
|-------------------------------|-----------------|------|----|
| Feeder | | | |
| Spare Feeders | 63 A / 125 A | MCCB | 8 |
| VALVE ACTUATOR FEEDERES | 4 A | MCB | 13 |
| CAPACITOR FEEDER | 32A | MCB | 8 |

Note - OUTGOING FEEDERS are Referential, can change as per manufacture standard

With all other standard required accessories.

FABRICATION DETAILS - Indoor Type, Floor Mounted, Single Front, Single Door, IP 44, Fixed Type, Compartmentalized Panel, Extensible on single side, Front Access , Structure: 1.6mm, Doors: 1.6mm, Mounting Plate: 1.6mm, Gland Plate: 3mm , Cable Termination At: I/C - Bottom & O/G - Bottom, Paint: RAL 7035

BUSBAR DETAILS –

A Set of 630A 50kA Electrolyte Grade Copper Busbar for TPN System (Current Density- 0.8A/sq.mm. – 170-200 Aluminium Earth Busbar - 1x50x6 – 50

BOM

| Item Description | Specification | Qty |
|-----------------------------------|---------------------------|--------|
| LT Panel Enclosure | CRCA, IP54, Floor Mounted | 1 Set |
| Copper Busbars | 2500 A TPN + Earth Bus | 1 Set |
| Incomer ACB | 630 A, 4P, 50 kA, LSIG | 2 Nos |
| Bus Coupler ACB | 630 A, 4P, 50 kA | 1 No |
| MCCB Outgoing Feeders | 32 A to 250 A | 18 Nos |
| Motor Protection Circuit Breakers | 6 A to 32 A | 10 Nos |
| Thermal Overload Relays | Suitable Ratings | 10 Nos |
| Power Contactors | AC3 Duty | 10 Nos |
| Multifunction Energy Meters | RS485 Modbus | 3 Nos |
| Ammeters with Selector Switch | Digital | 3 Nos |
| Voltmeters with Selector Switch | Digital | 3 Nos |
| Indicating Lamps | RYB Healthy | 12 Nos |

| | | |
|---------------------|--------------------------|--------|
| Push Buttons | Start/Stop/Reset | 20 Nos |
| Space Heater | 240 V AC | 2 Nos |
| Thermostat | Panel Heater Control | 2 Nos |
| Control Transformer | 415/230 V | 2 Nos |
| Terminal Blocks | Stud Type | 1 Lot |
| Wiring | FRLS Copper | 1 Lot |
| Earthing Bus | Copper | 1 Set |
| Name Plates | Engraved | 1 Lot |
| Cable Glands | Double Compression | 1 Lot |
| Cable Alley | Bottom Cable Entry | 1 Set |
| Panel Exhaust Fans | Filter Type | 4 Nos |
| Mimic Diagram | Front Fascia | 1 No |
| SPD | Type II Surge Protection | 1 Set |

| Description | Unit | Qty |
|-----------------------------|------|-----|
| Main LT PCC Panel | Set | 1 |
| MCC Section | Set | 1 |
| Lighting Distribution Board | Set | 2 |
| Street Light Feeder Panel | Set | 1 |
| UPS Distribution Board | Set | 1 |
| APFC Panel (Optional) | Set | 1 |
| Copper Busbar System | Lot | 1 |
| ACB 630 A 4P | Nos | 3 |
| MCCBs Various Ratings | Nos | 18 |
| Contactors & OLRs | Nos | 10 |
| Multifunction Meters | Nos | 3 |
| Selector Switches | Nos | 10 |
| Indicating Lamps | Nos | 12 |
| Control Wiring | Lot | 1 |
| Earthing Materials | Lot | 1 |

| | | |
|---------------------------|-----|---|
| Double Compression Glands | Lot | 1 |
| Ferrules & Lugs | Lot | 1 |
| Panel Foundation Channel | Lot | 1 |
| Space Heaters | Nos | 2 |
| Panel Exhaust Fans | Nos | 4 |

Note –
1. Above Quantities are referential , Manufacturer can change quantity as per manufacturer standard
2.As per standards, Adequate Spare feeder provision required in panel.

The complete LT panel shall comply with:

- IEC 61439
- IEC 60947
- IS 8623
- IS 3043
- CEA Regulations
- MSEDCL standards

अटी शर्ती-

- १) वरील नमूद बाबींचे चे दरपत्रक स्पेसिफिकेशननुसार ऑनलाईन पध्दतीने महाटेंडर पोर्टलवरून (www.mahatenders.gov.in) दि. १३/०५/२०२६ ते दि. १८/०५/२०२६, दु. १२.०० वाजेपर्यंत भरावयाचे आहे.
- २) पुरवठा करणा-या कंपनी/संस्था यांचे अटीयुक्त कोटेशन स्विकारले जाणार नाही.
- ३) पुरवठा करणा-या कंपनी/संस्था यांनी वरील दिलेल्या स्पेसिफिकेशननुसार व तपशिलाप्रमाणे दरपत्रक सादर करावयाचे आहे.
- ४) पुरवठा करणा-या कंपनी / संस्था यांना दरपत्रकासोबत खालील कागदपत्रे सादर करणे आवश्यक असून ज्या कंपनी / संस्था खालीलप्रमाणे कागदपत्रे सादर करतील त्यांचेच अंदाजित दराचे पाकिट उघडण्यात येईल.
 - शॉप ऍक्ट सर्टिफिकेट
 - पॅन कार्ड
 - जीएसटी प्रमाणपत्र
 - स्पेसिफिकेशन Comply Sample Chart – सोबत जोडले प्रमाणे - सही व शिक्क्यानिशी (कंपनी/संस्था यांनी प्रत्येक उपकरणांनुसार दर GST वगळून) सादर करावयाचा आहे.
- ५) मागविण्यात आलेले दर हे केवळ अंदाजित दर (Estimate / Budgetary Cost) निश्चितीकरिता आहेत.
- ६) कोणतेही कोटेशन मंजूर अथवा नामंजूर करण्याचा अधिकार म.न.पा.ने स्वतः कडे राखून ठेवला आहे.

Sd/-

कार्यकारी अभियंता (वि.)
जलशुद्धीकरण केंद्र सेक्टर २३, निगडी.
पिंपरी चिंचवड महानगरपालिका

पिंपरी चिंचवड महानगरपालिका,
पिंपरी – १८
जलशुद्धीकरण केंद्र से २३ विद्युत
जा.क्र./ जशुके / वि/ ०१/कावि /१०/२०२६