



BAIF INSTITUTE FOR SUSTAINABLE LIVELIHOODS AND DEVELOPMENT

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INVITATION FOR QUOTATION

To

Date: 07/12/2023

Dear Sir / Madam,

Sub.: **INVITATION FOR QUOTATION FOR “Solar drinking water pumping system”**

You are invited to submit your most competitive quotation for the following product:

| Brief description of the product | Specifications & quantity | Qty. | Delivery and Installation period | Location |
|--|--------------------------------|------|----------------------------------|--|
| Solar drinking water pumping system 1 hp | As per attached Annexures 1-11 | 10 | 45 days from date of issue of WO | Installation sites as given below. 1. Sri Aurobindo Integral Education Centre (School), Derang, Kaniha block of Angul dist. - 1 unit 2. Mahanti Sahi, Derang, Kaniha, Angul dist. - 1 unit 3. Sahar Sahi, Derang, Kaniha block of Angul dist. - 1 unit 4. Hadi Sahi, Derang, Kaniha block of Angul dist. - 1 unit 5. Harijan Sahi, Derang, Kaniha, Angul dist. - 1 unit 6. Nua Sahi, Derang, Kaniha block of Angul dist. - 1 unit 7. Jharia Sahi, Derang, Kaniha block of Angul dist. - 1 unit 8. Gadanayak Sahi, Derang, Kaniha, Angul dist. - 1 unit 9. Bhanamandap Sahi, Derang, Kaniha, Angul - 1 unit 10. Takua, Kaniha block of Angul dist. - 1 unit |

Detailed Description of the Product: As above

1. Quoted Price:

- The offer shall be for the entire quantity as described above. Corrections, if any, shall be made by crossing out, initialing, dating and re-writing.
- The party shall quote for goods / services in the attached format of quotation.
- All duties, taxes and other levies payable on the raw materials and components shall be included in the total price.



- d. The rates quoted by the party shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
 - e. Delivery and transportation at the cost of the party.
 - f. The prices shall be quoted in Indian Rupees only.
2. Each party must submit only one **SEALED** quotation. Party shall not contact other parties in matters related to this quotation.

3. Validity of Quotation

The quotation shall remain valid for a period not less than 30 days after the deadline fixed for submission of quotations.

4. Evaluation of Quotations

- a. BAIF will evaluate and compare the quotations determined to be substantially responsive i.e. which are properly signed and conform to the terms & conditions and specifications.
- b. The evaluation would be done for all the goods / services put together or separately as feasible. The items for which no rates have been quoted would be treated as zero and the total amount would be computed accordingly.
- c. List of similar works undertaken with details of clients etc. if any, should be provided.
- d. Contract will be awarded to the responsive party/parties based on technical cum commercial grounds.

5. Award of contract

- a. The contract will be awarded to the party/parties whose quotation has been determined to be substantially responsive and technical specifications and commercial terms best suited to the requirement. BAIF, prior to the expiry of the validity period of the quotation, will notify the party/parties whose quotation has been accepted for the award of contract. The terms of the accepted offer shall be incorporated in the Purchase Order or Work Order. Quotations shall include GST & PAN Numbers.
- b. Notwithstanding the above, BAIF reserves the right to accept or reject any quotation and to cancel the procurement process and reject all quotations any time prior to the award of the contract.
- c. Rate contract can be entered into for subsequent procurement. Order may be given partially and in multiple slabs.
- d. The party/parties are bound to abide by the Organization's Internal Committee guidelines.

6. Normal commercial guarantee / warranty shall be applicable to the supplied goods.

7. Payment terms:

10% advance with work order.

50% payment against supply of mounting structure, water pumps, electrical control panel, ump controller, PV module and water tank along with erection of structure at site with civil foundation.



Balance 40% payment against supply of water filter and ACP sheet covering including installation, testing and commissioning of the solar-based drinking water system.

8. Queries pertaining to specifications and scope, if any, may be clarified by contacting the undersigned during office hours.

9. Non-refundable tender document / processing fee of Rs. 1000/- (Rupees One thousand only) shall be paid with the tender documents.

10. You are requested to provide your offer **on or before 25th December, 2023** in the name of **BAIF Odisha** only at the above address. Please mention the Subject on the envelope.

11. We look forward to receiving your quotations and thank you for your interest in this project.

BAIF Institute for Sustainable Livelihoods and Development

Solar drinking water pumping system 1 hp

Authorized Signatory



Annexure 1

Description of quantities

(1 hp system x 10 No.)

| No. | Description | Unit | Qty. |
|-----|--|------|------|
| 1 | Supply, installation, commissioning & testing of solar submersible Pump Supply of 3 Phase 1hp bore well submersible pump including mounting structure for water pump, Earthing system, lightning protection, protection system, cable (3C x 2.5 sq.mm. flat cable and PVC insulated AC 3Ø as per IS-694:1990 up to 75 m (approx.) length and laying in high density PVC pipe) (including trench excavation) etc. complete in all respect and as per site condition data provided in Annexure 2 and specifications provided in Annexures 4 and 5. | No. | 1 |
| 2 | Supply, installation, commissioning and testing of solar electrical power plant Supply of PV module including mounting structure (with civil works), Earthing system, lightning protection, protection system, combiner box, PV cable, SPD, MC4 – connector, MCB, solar fuse etc. complete in all respect and as per instrument specifications provided in Annexure 5. | No. | 1 |

Note: The given quantities are for one unit. Requirement is of 10 units.

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Annexure 2

Site condition and input data (1hp system x 10 No.)

| Project category | : | Renewable energy, solar |
|---|---|---|
| Project summary | : | Solar water pumping system |
| Type of plant | : | Stand alone |
| Location | : | 1. Sri Aurobindo Integral Education Centre (School), Derang, Kaniha block of Angul dist. - 1 unit 2. Mahanti Sahi, Derang, Kaniha, Angul dist. - 1 unit 3. Sahar Sahi, Derang, Kaniha block of Angul dist. - 1 unit 4. Hadi Sahi, Derang, Kaniha block of Angul dist. - 1 unit 5. Harijan Sahi, Derang, Kaniha, Angul dist. - 1 unit 6. Nua Sahi, Derang, Kaniha block of Angul dist. - 1 unit 7. Jharia Sahi, Derang, Kaniha block of Angul dist. - 1 unit 8. Gadanayak Sahi, Derang, Kaniha, Angul dist. - 1 unit 9. Bhanamandap Sahi, Derang, Kaniha, Angul - 1 unit 10. Takua, Kaniha block of Angul dist. - 1 unit |
| Land | : | Flat |
| Irradiation details considered | : | Yes |
| Type of PV module mounting structure | : | Fixed structure (1 sets of 4 modules each) |
| Type of PV modules considered for the offer | : | Poly-crystalline silicon |
| System capacity pump / solar system | : | 1 hp / 0.75 kW |
| Inverter capacity | : | Refer technical specification |
| Water consumption (liters / day) | : | 10,000-17,000 (considering 4 hours / day) |
| Pipe length (m) | : | NA |
| Pipe size (mm) | : | NA |
| Total head (m) | : | 62-91 |
| Calculated pump capacity (hp) | : | 1 |

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List of equipment

| SN. | Description |
|------------|--|
| 1 | Solar PV VFD inverter |
| 2 | Solar PV module |
| 3 | Fuse DC |
| 4 | SPD DC (Surge Protection Device) |
| 5 | DC Disconnect Switch |
| 6 | DC cable |
| 7 | Fuse AC |
| 8 | SPD AC (Surge Protection Device) |
| 9 | MCB AC |
| 10 | MC - 4 connector |
| 11 | AC cable |
| 12 | Solar PV module mounting structure |
| 13 | Structure hardware system mounting structure as given in drawing |
| 14 | Earthing system |
| 15 | Lightning arrester system |
| 16 | Solar pump – bore well AC submersible pump |
| 17 | Water tank 3-layer ISI mark |
| 18 | Aquaguard Eureka Forbes ASF1500 & ACF1500 |
| 19 | Panel cleaning system |
| 20 | ACP sheet covering for protection to filter units |

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Annexure 4

Technical specifications: Pump (1hp system x 10 No.)

| SN | Particulars | Details / Range | Unit | Remarks |
|---------------------|----------------------------|---|------|---------|
| 1 | Type of application | Water lifting–Drinking | | |
| | Type of pump | Bore well submersible | | |
| | Required discharge | 10,000-17,000 | LPD | |
| | Total head | 62-91 | m | |
| | Allowed liquid temperature | Atmosphere | | |
| | System pressure (Max.) | 4 to 6 | kg | |
| | Main power supply | 380V - 415 V, 50 Hz, three phase | V | |
| | Efficiency | More than 60% | | |
| | 2 | Pump | | |
| Pump head | | Vendor needs to specify | | |
| Pump base | | Vendor needs to specify | | |
| Impeller | | Vendor needs to specify | | |
| Chamber | | Vendor needs to specify | | |
| Shaft | | Vendor needs to specify | | |
| Shaft seal | | Sic/Carbon | | |
| Rubber parts | | EPDM | | |
| 3 | Motor | | | |
| | Efficiency class | IE3 | | |
| | Insulation class | F | | |
| | Enclosure | IP 66 | | |
| | Supply frequency | 50 | Hz | |
| | Supply voltage | 380 V - 415 V, 50 Hz, three phase | V | |
| | Vibration Level | Accordance with ISO 10816 | | |
| | Cooling standard | Accordance with IEC 6034-6 | | |
| Maximum noise level | < 75 dB @1 m | | | |
| 4 | Application | Low voltage operating pump for solar system | | |

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Annexure 5

Technical specifications: Equipment

(1 hp system x 10 No.)

Solar inverter (1 hp system)

| SN | Particulars | Range / Details | Units | Remarks |
|----------|------------------------------------|-------------------------------------|-------|---------|
| 1 | Input DC side | | | |
| | Maximum input power (Wp) | 1340 | W | |
| | Max. DC input voltage (Vdc) | 800 | V | |
| | MPPT voltage range (Vdc) | 250 - 800 | V | |
| | Max. input current for each MPPT | 8.8 - 11 | A | |
| 2 | Output AC Side | | | |
| | Nominal AC output power (kW) | 1 | kW | |
| | AC output voltage (Vac) | 380V - 415 Volt, 50 Hz, three phase | V | |
| | Max. AC output current | < 11 | A | |
| | Power factor | 1 | | |
| | Grid frequency (Hz) | 50 | Hz | |
| 3 | Efficiency | | | |
| | Max. efficiency | 98 | % | |
| | Euro efficiency | 97.5 | % | |
| 4 | MPPT | | | |
| | No. of MPPT | 2 | | |
| | No. of MPPT algorithms | ≤ 1 | | |
| 6 | Power ports | | | |
| | No. of input DC port for each MPPT | 1 pair | | |
| | Type of protected port | MCB | | |
| | Type of AC output protected | MCB | | |
| 7 | Protection | | | |

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|--|--------------------------|-----------------|---|--|
| | Surge arrestor DC side | Yes | | |
| | Surge arrestor AC side | Yes | | |
| | PV insulation monitor | No | | |
| | O/U voltage protection | Both DC & AC | | |
| | Over current protection | Both DC & AC | | |
| | Earth fault protection | Yes | | |
| 8 | Others | | | |
| | Minimum start up voltage | 200 | V | |
| | Relative humidity | 95 | % | |
| | Cooling method | Self-ventilated | | |
| | Weight (kg) | As per size | | |
| | Protection | IP 54 | | |
| Inverter to be placed away from solar PV modules as given in drawing | | | | |

Solar PV module (1 hp system)

| SN | Specifications | Range | Units | Remarks |
|----------|---|---------------------------------------|---------------|---------|
| 1 | Electrical characteristics | | | |
| | Maximum power (Pm) Nominal | 335 | W | |
| | Voltage @ maximum power (Vmpp) | ≥ 36.85 | V | |
| | Current @ maximum power (Impp) | ≤ 8.82 | A | |
| | Open circuit voltage (Voc) | ≥ 45.35 | V | |
| | Short circuit current (Isc) | ≈ 9.55 | A | |
| | Maximum system voltage | 1000 | V | |
| | Number of solar cells per panel | 72 | Nos. | |
| | Type of cell | Poly-Crystalline Silicon Cells | | |
| 2 | Temperature co-efficient | | | |
| | Open circuit voltage (Voc) | -0.3253 | % / °C | |
| | Short circuit current (Isc) | 0.0718 | % / °C | |
| | Rated (nominal) power (Pmax) | -0.4106 | % / °C | |
| | Nominal operating cell temperature (NOCT) | 46+- | °C | |
| 3 | Mechanical loading | | | |
| | Frame material type (AL/Cu/GI/FB) | Anodized aluminum | type | |
| | Frame thickness | 3.2/4 | mm | |
| | Front panel (Front face glass material) | Tempered glass | type | |

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|----------|--|---|-------------------------------|--|
| | | (Low iron) | | |
| | Panel dimensions (L X W X T) (approx.) | 1960 × 990 × 40 | mm | |
| | Weight (approx.) | 22.5 | kg | |
| | Junction box type | Weatherproof PPO/IP 65 / IP 67 | | |
| | Connector type (MC-4 / MC-3 / MC-2 / LC-4) | MC - 4 type | | |
| 4 | Limits | | | |
| | Maximum operating temperature range | -40 to 85 | °C | |
| | Reverse current protection | Bypass diodes | | |
| 5 | Warranty | | | |
| | Product warranty | 10 | years | |
| | Performance warranty | 10 | years for 90% of power | |
| | | 25 | years for 80% of power | |
| 6 | Standard | IEC 61215, IEC 61730-1&2, IEC 60068-2-68, IEC 61701, IEC 62716 | | |

Surge Protection Device AC (1 hp system)

| SN | Particulars | Range | Unit | Remarks |
|-----------|---|---------------------------------------|-------------|----------------|
| 1 | Type 2 PV SPD | | | |
| | Maximum PV voltage (Uocstc) (Vdc) | 1000 | V | |
| | Protection mode | CM/DM | | |
| | Maximum operating voltage (Ucpv) (Vdc) | 1060 | V | |
| | Current withstand short circuit (Iscwpv) | > 1000 | A | |
| | Operating current (Ipe) to voltage Ucpv | < 0.1 | mA | |
| | Leakage current (Ipe) to voltage Ucpv | < 0.1 | mA | |
| | Nominal discharge current (In) (15 x 8/20 mic-sec Impulses) | 20 | KA | |
| | Protection level at In (Up) | < 3.6 | KV | |
| | Mechanical characteristics | | | |
| | Connection | by screw terminal: 4 - 25 sq.mm | sq.mm. | |
| | End of life mode | Disconnection of the SPD from PV line | | |
| | Disconnection indicator | By mechanical indicator | | |

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|--|-----------------------------------|--|----|--|
| | Remote signaling of disconnection | Option DS50PVS-xxx | | |
| | Mounting | Symmetrical Rail 35 | mm | |
| | Operating temperature | - 40 / + 85 | °C | |
| | Protection class | IP20 | | |
| | Housing material | Thermoplastic UL94-VD | | |
| | Standards compliance | | | |
| | prEN50539- 11: Europe | PV surge protection - Class I and II testing | | |
| | UL 1449 3rd Edition: USA | Type 4, for use in type 2 locations | | |

MCB AC (1 hp system)

| SN | Particulars | Range | Unit | Remarks |
|----------|---------------------------------|---|------|---------|
| 1 | MCB AC | | | |
| | No. of poles | 3 | | |
| | Characteristic | C Curve | | |
| | Breaking capacity | 10 | kA | |
| | Rated current | 10 | A | |
| | Rated voltage | 440 DC | V | |
| | Current limitation class | Class 3 | | |
| | Frequency | 50 | Hz | |
| | Minimum operating voltage | 12 V AC / DC | V | |
| | Mounting position | Vertical / horizontal / upside down / on the side | | |
| | Fixing | On symmetric rail EN / IEC 60715 | | |
| | Applied connection torque | Recommended: 2.5 Nm, Max.: 3 Nm, Min.: 2 Nm | | |
| | Standard | IS / IEC 60898 -1 2002 | | |
| | Mechanical endurance | 20000 operations without load | | |
| | Electrical endurance | 10000 operations with load | | |
| | | 2000 operation under In, DC current | | |
| | Permissible ambient temperature | -25 to 70 | °C | |

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AC cable (1 hp system)

| SN | Particulars | Range | Unit | Remarks |
|----|---------------------------|--|--------------|-----------------------|
| 1 | AC Cable | 3C x 2.5 sq.mm flat cable & PVC insulated 3 ϕ | | As per IS-694:1990 |
| | Maximum operating voltage | | V | |
| | Maximum operating current | > 45 | A | |
| | Temperature rating | -40 to 90 | $^{\circ}$ C | |
| | Conductor material | Bright electrolytic grade copper | | |
| | Insulation material | Special PVC compound | | |
| | Jacket material | Abrasion resistant PVC compound | | |
| | Min. bend radius | 8 x diameter | mm | |
| | Flame resistance | VW-1 , National Electric Code (NEC), NFPA 70 | | |

PV fuse (1 hp system)

| SN | Particulars | Range | Unit | Remarks |
|----|-------------------------|----------------------|------|---------|
| 1 | PV fuse rating | | | |
| | Voltage | 1000 | V | |
| | Current | 20 | A | |
| | Breaking capacity | 10 kA DC | kA | |
| | Min. interrupting | 1.3 x I _n | | |
| | Time constant | Under 1 | ms | |
| | Poles | 1 | Nos. | |
| | Finger safe fuse holder | | | |
| | CMD - 1D Fuse Holder | 10 | | |
| | Poles | 1 | Nos. | |

Surge Protection Device DC (1 hp system)

| SN | Particulars | Range | Unit | Remarks |
|----|-----------------------------------|-------|------|---------|
| 1 | Type - 2 SPD DC | | | |
| | Maximum PV voltage (Uocstc) (Vdc) | 1000 | V | |

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|---|--|-------|--|
| Protection mode | CM/DM | | |
| Maximum operating voltage (Ucpv) (Vdc) | 1060 | V | |
| Current withstand short circuit (Iscwpv) | 20 | kA | |
| Operating current (Ipe) to voltage Ucpv | < 0.1 | mA | |
| Leakage current (Ipe) to voltage Ucpv | < 0.1 | mA | |
| Nominal discharge current (In) (15 x 8/20 mic-sec Impulses) | 10 | kA | |
| Protection level at In (Up) | < 3.6 | kV | |
| Mechanical characteristics | | | |
| Connection | by screw terminal: 4 - 25 sq.mm | Sq.mm | |
| End of life mode | Disconnection of the SPD from PV line | | |
| Disconnection indicator | By mechanical indicator | | |
| Remote signaling of disconnection | Option DS50PVS-xxx | | |
| Mounting | Symmetrical rail 35 | mm | |
| Operating temperature | - 40 / + 85 | °C | |
| Protection class | IP20 | | |
| Housing material | Thermoplastic UL94-VD | | |
| Standards Compliance | | | |
| prEN50539- 11: Europe | PV surge protection - Class I and II testing | | |
| UL 1449 3rd Edition: USA | Type 4, for use in type 2 locations | | |

DC Disconnecter Switch (1 hp system)

| Sr. No. | Particular | Range | Unit | Remarks |
|----------|---------------------------------------|-------|------|----------------|
| 1 | DC Disconnecter Switch | | | |
| | Rated Operational Current | 25 | A | |
| | Conventional Free-air Thermal Current | 32 | A | At 40 .C |
| | Conventional Thermal Current | 32 | A | Fully Enclosed |

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|------------------------------------|---------------------------|-------|--------|
| Rated Impulse Withstand Voltage | 8 | kA | |
| Rated Insulation Voltage | 1000 | V | |
| Rated Operational Voltage | 1000 | V | |
| Rated Short-time Withstand Current | 0.6 | kA | For 1s |
| Minimum Operating Voltage | 12 V AC / DC | volts | |
| Power Loss | 0.3 | W | |
| Pollution Degree | 3 | | |
| Operating Mode | Front operated | | |
| Standard | IEC 60947-1, -3 | | |
| Electrical Endurance | 10000 operation with load | | |
| Degree of Protection | Front IP20 | | |

MC-4 connector (1 hp system)

| Sr. No. | Particulars | Range | Units | Remarks |
|----------|---------------------------|---------------------|-------|---------|
| 1 | MC - 4 connector | | | |
| | Maximum voltage | 1000 | V | |
| | Maximum current | 45for 4 sq.mm. | A | |
| | Rated impulse voltage | 8 | kV | |
| | Protection class | Class-2 | | |
| | Test voltage | 6 kV (50Hz, 1 min.) | | |
| | Protection class | Class - 2 | | |
| | Application class | A | | |
| | Flammability class | UL94-V0 | | |
| | Existence of an enclosure | Enclosed connector | | |
| | Pollution degree | 2 | deg C | |
| | Temperature range | -40 to + 105 | °C | |
| | Operating humidity | 5% - 95% | | |
| | Contact material | Copper tin plated | | |

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|--|--------------------------|--------------------|-------|--|
| | Cable cross section area | 2.5 ,4 ,6 sq.mm | sq.mm | |
| | Degree of protection | IP67 | | |
| | UV protection | Anti UV capability | | |

PV cable (1 hp system)

| SN | Particulars | Range | Unit | Remarks |
|----|---------------------------|--|-------|---------|
| 1 | PV – Cable | 1C x 4sqmm Cable | | |
| | Maximum Operating Voltage | <1000 VRMS (UL PV) | Volts | |
| | Maximum Operating Current | >48 | Amps. | |
| | Temperature Rating | -40 to 90 | °C | |
| | Conductor Material | Soft Annealed tinned stranded copper | | |
| | Separator | Paper Tape/PVC | | |
| | Insulation Material | XLPE | | |
| | Jacket Material | Sunlight-Resistant PVC | | |
| | Min. Bend Radius | 8 x Diameter | mm | |
| | Flame Resistance | VW-1 , National Electric Code (NEC), NFPA 70 | | |

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Earthing (1 hp system)

| SN | Particulars | Range | Unit | Remarks |
|----------|--|---------------------------------------|--------|---------|
| 1 | Earthing | | | |
| | Type | Rod Type | | |
| | Material of construction | GI with copper bonded / pure copper | | |
| | Outer wall thickness | ≥ 3 (Applicable for pipe type) | mm | |
| | Copper coating thickness | ≥ 200 (Applicable for pipe type) | micron | |
| | Length | ≥ 2 | Mtr. | |
| | Chemical | BFC | | |
| | Approved by | ERDA & CRPI (Equivalent) | | |
| | Nuts & bolt material | SS 316 | | |
| | Total dia. of electrode | Compatible with fault level | | |
| | Earth pit cover size | 300 × 300 × 60 | mm | |
| | Pit cover construction | RCC type | | |
| | Pipe type outer diameter (fault kA) | >19 (≥ 7.5 kA) or equivalent | mm | |
| | Required earth resistance after Installation $\leq 5 \Omega$ | | | |

Lightning arrester (1 hp system)

| Sr. No. | Particulars | Range | Unit | Remarks |
|---------|--|----------------|----------|---------|
| | Lightning arrester | | | |
| 1 | Type | SS / Cu Coated | | |
| 2 | Lightning rod height (h) total | 2 | m | Copper |
| 3 | Rod diameter | > 19 | Sq.mm. | Copper |
| 4 | Rating of surge current | 10 | kA | |
| 5 | Maximum resistance of system | 5 | Ω | |
| | Protection Level Standards | | | |
| 6 | IS 2309: 1989 Protection of Buildings and Allied Structures Against Lightning code of Practice | | | |

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|---|--|
| 7 | IS 732: 1989 Code of practice for Electrical wiring Installation |
| 8 | IS 3043: 1987 Code of practice for Earthing |
| 9 | IEC 62305 Series Protection against lightning |

Mounting structure (1 hp system)

| SN | Particulars | Range | Unit | Remarks |
|----|---|---|------|----------------|
| 1 | Module mounting structure | | | |
| | Type | Rectangular purine MS hot dip galvanized coating as per ASTM standard (100mm X 100mm X4mm). As per given design with folding ladder. | | As per drawing |
| | Base plate | MS hot dip galvanized coating as per ASTM standard (150 x 150 x 10) mm | | As per drawing |
| | Nuts & bolt | As required SS 304 | No. | Anti-theft |
| | Solar Clamps | As required | No. | |
| | Welding Type | As per standard | | |
| | Provision for housing inverter & controls | | | |

Note:

1. The edges in the structure should not be sharp.
2. Hot dip galvanizing layer should be uniform.
3. Mounting structure base (PCD) should be mentioned.
4. The given quantities are for single unit. Requirement is for 10 units.

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**Annexure 6****Bill of quantities**
(1hp system x 10 No.)

| SN | Description | Specifications | Quantity |
|----|--|---|---------------------------------------|
| 1 | Solar PV VFD inverter | 1 kW | 1 No. x 10 systems |
| 2 | Solar PV panel | 335 W | 4 No. x 10 systems |
| 3 | SPD AC (Surge Protection Device) | 1000 V, 20 KA, Type-2 SPD | 1 No. x 10 systems |
| 4 | MCB AC | 440 V, 20 A TP | 1 No. x 10 systems |
| 5 | MC - 4 connector Pair | 1000V, 45A, 4 Sq.mm. | 8 No. x 10 systems |
| 6 | AC cable | 3C x 2.5 sq.mm. Flat Cable & PVC insulated, 3 Phase - As per IS-694:1990 | As required site-wise for 10 sites |
| 7 | Fuse DC | 1000 V, 20 A, 50 KA S/C Rating | 4 No. x 10 systems |
| 8 | SPD DC (Surge Protection Device) | 1000 V, 20 KA, Type-2 SPD | 1 No. x 10 systems |
| 9 | DC Disconnect Switch | 1000 V, 25 A | 1 No. x 10 systems |
| 10 | DC cable | 4 sq.mm. - PV cable | As required site-wise for 10 sites |
| 11 | Solar PV module mounting structure (1 sets of 4 modules each) | Hot dip galvanized (80 microns) | As per design for 10 sites |
| 12 | Proving of G.I Frame work of angle size (100x100x4mm) of Height 20 ft (4 ft bellow GL and 16 ft above GL) as per given diagram with folding ladder. | GI | As per design for 10 sites |
| 13 | Earthing system | Rod Type- GI - (2m, 19-25 mm Dia.) - 5 kA rating | 3 No. x 10 systems |
| 14 | Lightning arrester system with base | SS / Cu, Length - 2m | Annexure 5 x 10 sites |
| 15 | Bore well AC Submersible pump | 1hp, 3 phase, 415V, 50 Hz | 1 No. x 10 systems |
| 16 | Excavation of foundation for overhead tank of size 4x0.45mx0.45mx1.1 m | As per given design | 0.891 cum. x 10 sites |
| 17 | Providing concrete (1:3:6) in foundation for overhead tank of size 4x0.30mx0.30mx1.4 m | As per given design | 0.504 cum. x 10 systems |



| | | | |
|----|---|---|--------------------|
| 18 | Water storage Tank | 5000 litre triple layers | 1 No. x 10 systems |
| 19 | Construction of stand post of 4 tabs with soak pit | As per given design | 1 No. x 10 systems |
| 20 | Community drinking water system - filtration technology | Aquaguard Eureka Forbes ASF1500 & ACF1500 | 1 No. x 10 systems |
| 21 | Display & branding-ACP sheet with vinyl printing, size: 4 ft x 3 ft | As per given design | 1 No. x 10 systems |
| 22 | Auto on off system | While water full in tank it will automatically off and water level low it will automatically on | 1 No. x 10 systems |
| 23 | Panel cleaning system | Automatic Panel cleaning system | 1 No. x 10 systems |
| 24 | 3.25mm ACP sheet covering for protection to filter units | As per requirement | 1 No. x 10 systems |
| 25 | Distribution units 100m pipe including excavation and refilling | 100m UPVC 40mm diameter (SCH 40) | 1 No. x 10 systems |
| 26 | Main pipe line | 66m HDPE, 8 kg/sq.m PE63, ISI mark | 1 No. x 10 systems |

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Annexure 7

List of vendors / make

| SN | Description | Make |
|----|--|---|
| 1 | Solar PV VFD inverter | Kirloskar, Shakti, CRI, Lubi |
| 2 | Solar PV panel | Waaree, Vikram, Emmvee, Tata, Anchor-Panasonic, RenewSys, Contendor |
| 3 | SPD AC (Surge Protection Device) | CITEL, ABB, Phoenix |
| 4 | MCB AC | Siemens, ABB, Hager |
| 5 | MC - 4 connector Pair | Nordic Solution, Phoenix |
| 6 | AC cable | RR, KEI, Finolex, Polycab |
| 7 | Fuse DC | Hager, Cooper Bussmann |
| 8 | SPD DC (Surge Protection Device) | CITEL, ABB, Phoenix, Elmax |
| 9 | DC Disconnect Switch | Siemens, ABB, Hager, Salzer, L & T |
| 10 | DC cable | RR, KEI, Finolex, Havells, Polycab |
| 11 | Solar PV module mounting structure | As per fabrication drawing |
| 12 | Structure hardware system | Local vendor |
| 13 | Earthing system | JMV LPS, ASHLOK, JEF |
| 14 | Lightning arrester system with base | JMV LPS, ASHLOK, JEF |
| 15 | AC Submersible pump (Bore well) | Kirloskar, Shakti, CRI, Lubi |
| 16 | Water storage Tank (HDPE tank) (5000 litter triple layers) | Supreme/Plasto/Sintex/Nilkamal/Sheetal/Aquatech/Reno/Penguin/Ashirvad/Duraplast |
| 17 | Community drinking water system - filtration technology | Aquaguard Eureka Forbes ASF1500 & ACF1500 |
| 18 | Distribution pipe | UPVC 40mm diameter (SCH 40), Plasto, Supreme, Finolex, Prince, Astral |
| 19 | Main pipe line | HDPE, 8 kg/sq.m PE63 ISI |

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Annexure 8

Price Offer (To be submitted by party in the format herein)

Supply, installation, commissioning and testing of 10 solar drinking water pumping systems of 1 hp at Dareng and Takua villages, Kaniha block, Angul, Odisha

Table 1: Offer summary (Details in Table 2)

| Sr. | Description | Price () | | GST (%) (if applicable) () | Any other () | Final offered price () |
|-----|---|--|--|-----------------------------------|---------------------|----------------------------------|
| A | 10 Sites at Dareng and Takua villages, Kaniha block, Angul: (1 hp system) (Cost of components as given in Table 2) | | | | | |
| B | Supply, installation, commissioning, testing and on-site training including transportation | | | | | |
| C | Comprehensive maintenance of 2 years | | | | | |
| | | Note: Total amount to be mentioned for 10 sites. | | | | |

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Table 2: Offer details

| Item wise price details (single unit/site) | | | | | | |
|--|--|----------|-----------|---------|---------------|-------------------------|
| Sr. | Description | Qty. | Price (₹) | GST (%) | Any other (₹) | Final offered price (₹) |
| 1 | Bore well submersible pump and delivery pipe up to GL (as given in technical details in Annexure 5) HDPE, 8 kg/sq.m PE63, ISI mark | 10 | | | | |
| 2 | PV module of 335 Wp (as given in technical details in Annexure 5) | 40 | | | | |
| 3 | Control, electronics and protection (inverter, SPD, connectors, DC cable, MCBs, fuse, combiner box, earthing, lightning protection) {As given in technical details in Annexure 5} | 10 sets | | | | |
| 4 | Solar PV module mounting structure – Hot dip galvanized iron (80 microns) structure with folding ladder. Fix structure as per drawing, excluding civil work). 1 set of 4 panels (as given in technical details in Annexure 5). | 10 units | | | | |
| 5 | AC cable (3C x 2.5 sq.mm three Phase flat cable & PVC insulated as per IS-694:1990, laying in high density PVC pipe) (excluding trench excavation) (As given in technical details in Annexure 5) | 750 m | | | | |
| 6 | Excavation of foundation for overhead tank of size 4x0.45mx0.45mx1.1 m | 10 units | | | | |
| 7 | Providing of concrete (1:3:6) in foundation for overhead tank of size 4x0.30mx0.30mx1.4 m | 10 units | | | | |
| 8 | Water storage Tank 5000L | 10 | | | | |
| 9 | Construction of stand post of 4 tabs with soak pit | 30 units | | | | |
| 10 | Automatics solar panels cleaning system | 10 units | | | | |
| 11 | Display & branding-ACP sheet with vinyl printing, size: 4 ft x 3 ft | 10 units | | | | |
| 12 | Auto on off system | 10 units | | | | |
| 13 | 3.25mm ACP sheet covering for protection to filter units | 10 units | | | | |
| 14 | Distribution units 100m pipe including excavation and refilling | 1000 m | | | | |
| 15 | Community drinking water system -filtration technology | 10 units | | | | |
| | Total components' cost for 10 systems at 10 sites. | | | | | |

Rupees (in words): _____
only

Date: Signature with seal of party:



Undertaking

Date:

To

BAIF Institute for Sustainable Livelihoods and Development - Odisha

Ref.: Supply, installation, commissioning & testing of solar photovoltaic drinking water pumping systems at Derang & Takua village of Kaniha block, Angul dist.

Dear Sir,

In response to the invited tender from you, I/We have examined the notice, conditions, specifications and terms of the contract and I/We agree to abide by all instructions in these documents attached hereto and hereby bind myself / ourselves to execute the work as per the schedule stipulated in the notice.

I / We further agree to sign and execute all agreements / bonds as may be required by BISLD to abide by all the conditions of the contract and to carry out all work as per specifications, failing which, I / We shall have no objection to forfeit the earnest money / security money deposited with BISLD.

I / We also undertake that I / We have not been blacklisted by any entities any time.

I / We enclose herewith the required documents.

Sincerely yours

Signature of Party with seal

Encl.:

1. Technical details
2. Price offer

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Enclosures Checklist

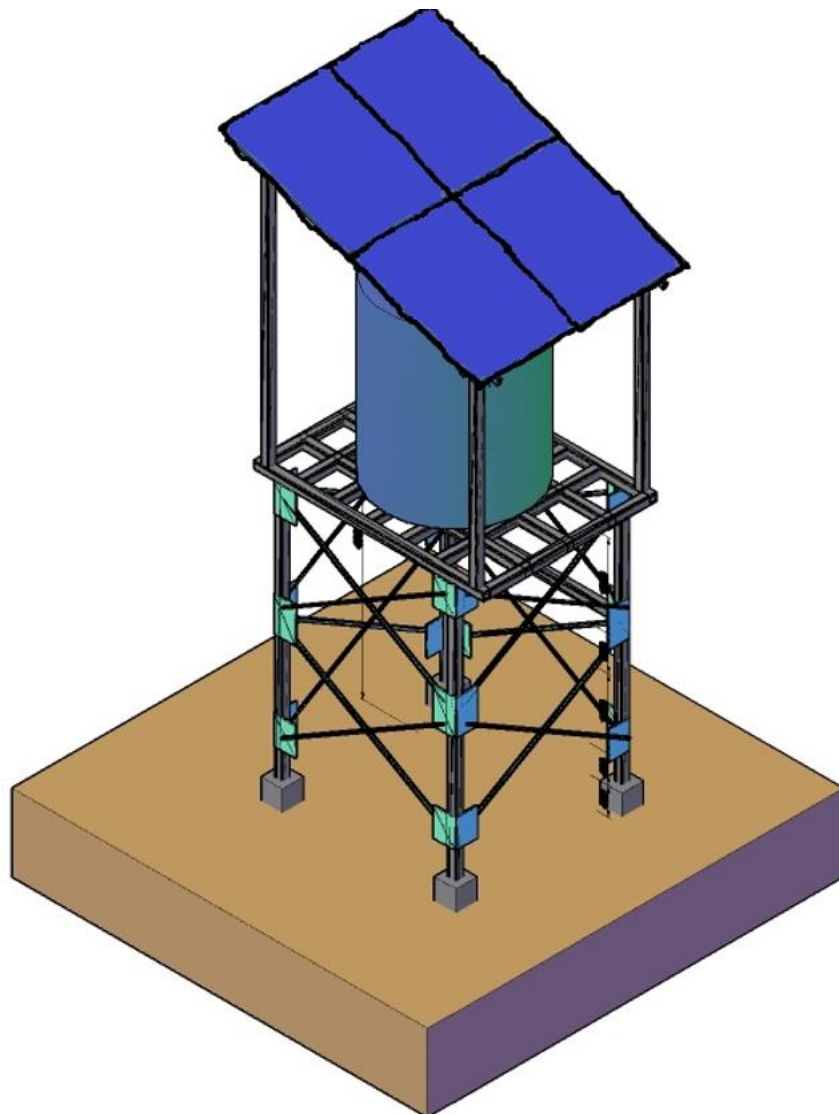
1. Copy of GST registration
2. Copy of PAN card
3. Authorization / dealership certificate from manufacturer
4. Company brochure and product catalogue
5. Self-declaration about not being a blacklisted entity
6. Solar PV module mounting structure drawing
7. List of similar works undertaken in last two years with client contact details
8. Any other supporting documents

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Annexure 11

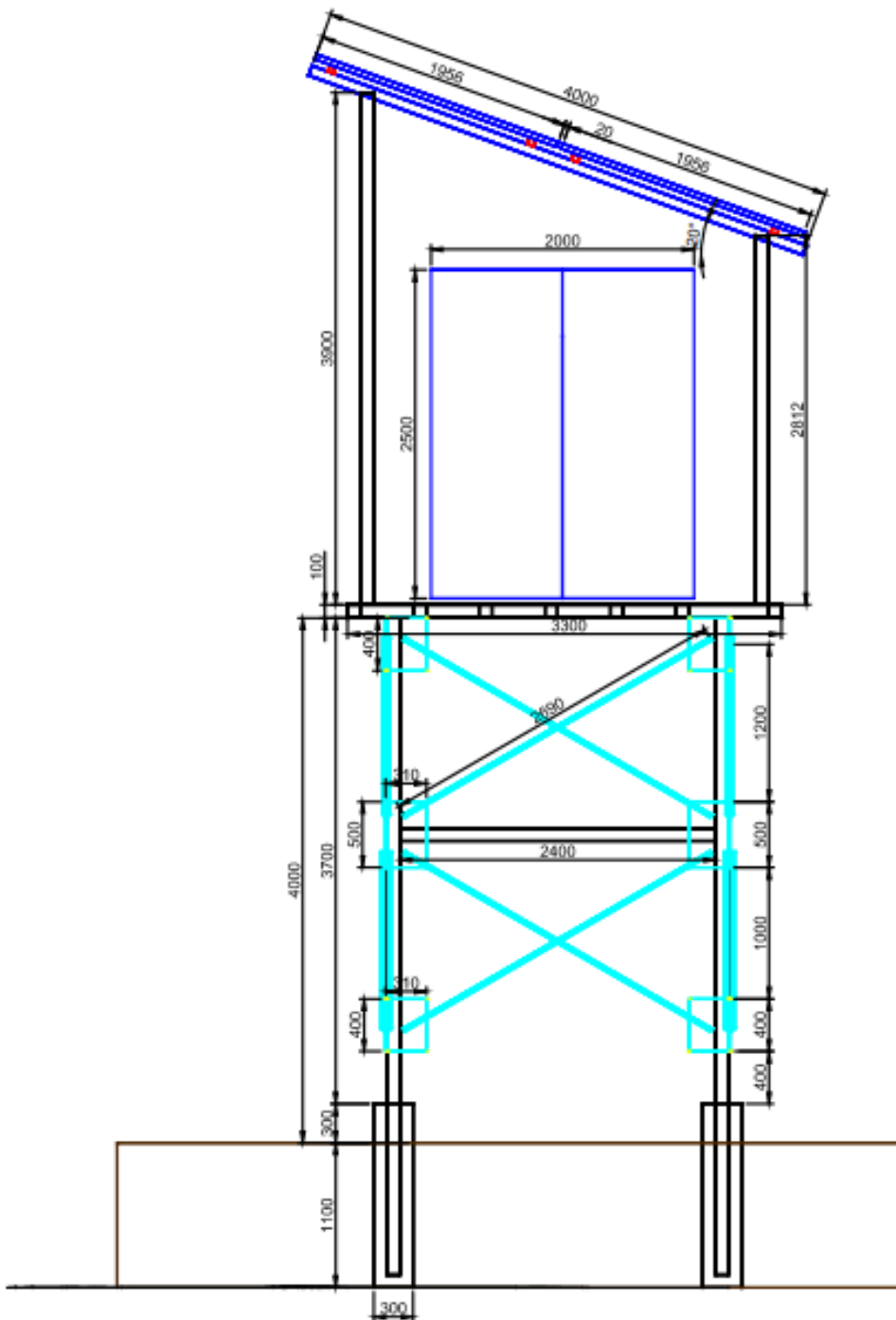
Indicative details and drawing of mounting structure (This is indicative. Mounting structure to be fixed conforming to specifications).



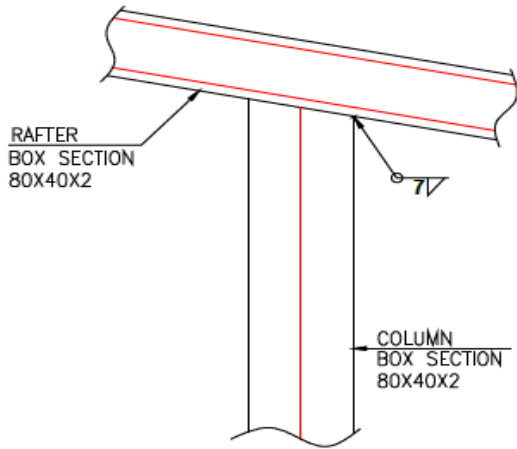
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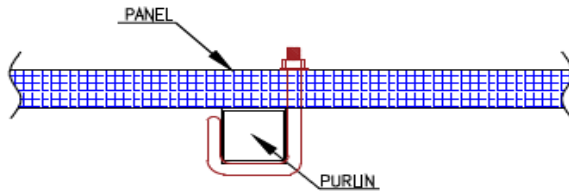
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RAFTER
BOX SECTION
80X40X2

COLUMN
BOX SECTION
80X40X2

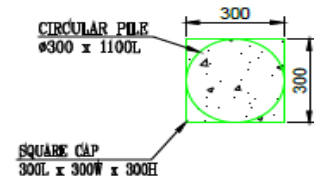
RAFTER TO COLUMN JOINT



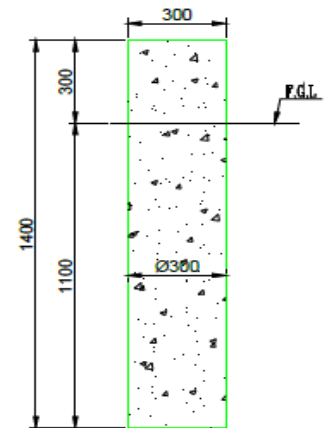
PANEL

PURLIN

PANEL TO PURLIN JOINT

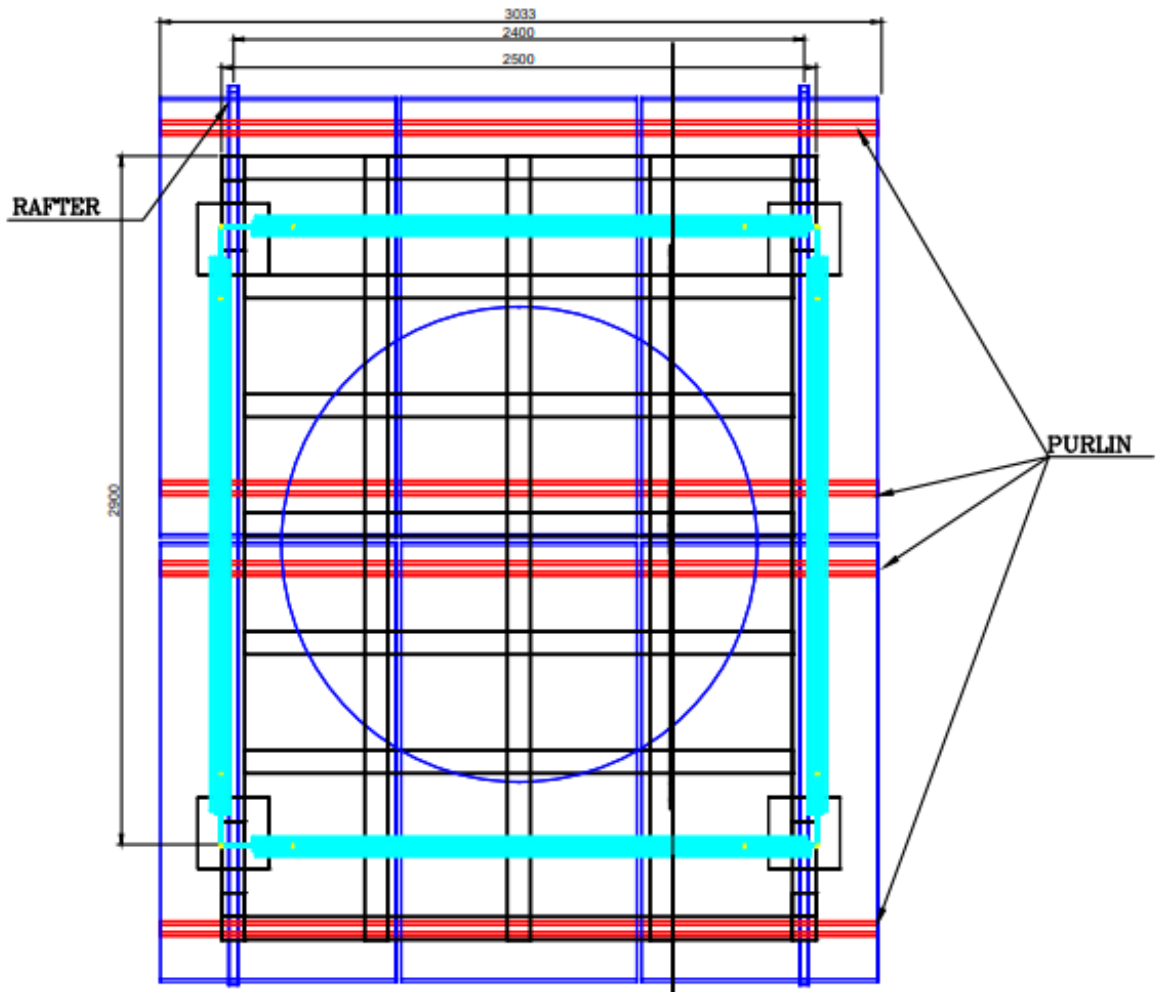


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FOUNDATION DETAIL

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