INVITATION FOR QUOTATION

19 NOV 2026

Our Ref No. : DBATU/Store/estate/elect maint/ hybrid solar pumping system/5099 Date: 19/11/2026

Quotation For:. Supplying, installing and commissioning of Hybrid Solar Pumping System

Due On: 3/12/2026

Date of Opening: 04/12/2026 Time: 11.00 am

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To,

Sub: QUOTATION FOR THE SUPPLY OF STORE

Dear Sir,

Your quotation for the items listed overleaf, may please be submitted to the under signed, so as to reach this Office not later than 03/12/2026

While submitting your quotation, the following procedure may please be observed and other points borne in mind.

1. The maker's name must be specified.
2. The "Terms and Conditions" for supply and delivery of stores, should be clearly indicated in the quotation, stating whether rates are, inclusive of all taxes, Packing and forwarding charge,s Freight charges, etc. or not, however rates offered as including all taxes will be more welcome.
3. If packing and forwarding charges are to be charged separately, it should be so clearly stated in your quotation.
4. Please mention clearly whether consignment would be Ex-Godown, Ex-Shop, of F.O.R. dispatching stations. Preferably terms offered as "Delivery of consignment of stores, on F.O.R.
5. Envelope should be clearly marked with our reference No and date of this quotation. It should also be superscripted as per the format given above.
6. The quotation would be opened as per date and timing given above, if desired by you, you may depute an authorized representative with a letter of authority to be present at the time of opening of the quotation at this Office on the aforesaid day, date & time.
7. Your quotation must be valid for a minimum 30 (Thirty) working days from the date of it's opening.
8. Quotation received after the date of opening may not be taken into consideration.
9. Items tendered should confirm to the specification shown in the attached list when and where, full or no specifications are indicated against items in the list. Kindly furnish your full specification in accordance with accepted standards against each item tendered. Where reference to catalogue is made, the relevant catalogues/ Pamphlets/ Literature should accompany the quotation.
10. Your quotation should be for all new items and not for second hand.
11. Please state whether items will be available Ex-Stock. If not the minimum period for delivery, or for supplying the items or stores.
12. It should be clearly stated whether **GST,** Insurance, Freight or packing and forwarding charges, or any other taxes and duties, etc. leviable
13. It would be appreciated if illustrated catalogues/Literature etc is furnished with the quotation.
14. Expression to as "Complete with standard Equipment" complete with standard accessories "Equipment to" As good as should be avoided. If at all their use is unavoidable then it should be

very specifically indicated as to what exactly they mean and what exactly would be supplied under them. Any ambiguity or vagueness should be avoided.

15. A Declaration in form I will be issued for 8% sales Tax concession for sales of scientific instruments by a registered dealer, as per Provision made, under Bombay, Sales Tax-Act-1959, vide Section 41, at entry No – 1095/37/Taxation 2, dated 22 nd September,1935. If a change in declaration in form I will be issued according to the instruction issued by the Maharashtra Govt time to time.
16. For convenience, kindly adopt while quoting the same serial Nos. as given in the list detailed below.
    Thanking You.

Yours faithfully,

Registrar

Dr. Babasaheb Ambedkar Technological University, Lonere

HYBRID SOLAR PUMPING SYSTEM

Solar PV + MSEDCL 3-Phase Grid Supply

1 Work Scope and Operating

This proposal covers a new 10 HP/7.5HP/5HP/2HP, 3-phase, 415 V AC pumping system capable of operating from solar PV power when sufficient solar energy is available and from the existing MSEDCL 3-phase grid supply when solar power is insufficient or unavailable. The proposed arrangement shall provide Solar Priority, Grid Backup, automatic or manual source selection, MPPT control, VFD-based soft starting and essential motor and system protections.

2. Design Basis and Assumptions

Parameter	Proposed Design Basis
Pump rating	10 HP/7.5HP/5HP/2HP 3-phase, 415 V AC, 50 Hz
Pump type assumed	MonoBlock /borewell submersible pump set; revise if surface/openwell pump is required
Solar PV capacity	600 Wp each
Hybrid drive/controller	11/9/6/3 Kw 3-phase 415 V output; PV MPPT input and MSEDCL AC input
Grid supply	Existing MSEDCL 3-phase, 415 V, 50 Hz connection
Operating mode	Solar Priority with Grid Backup / Grid-only mode
Indicative PV area	As per university requirement (Ground mounted)
Work scope	Design, supply, installation, testing and commissioning (SITC), protection, earthing and training

A)Hybrid solar system for 10HP Pump Qty 01Nos

Sr. No.	Description of Material / Work	Unit	Qty.	Rate (₹)	Amount (₹)
1	600 Wp N-Type TOPCon / high-efficiency Mono PERC solar PV module, IEC certified, with OEM warranty	Nos.	24		
2	Hybrid Solar Pump VFD/Controller, 11 kW minimum, 3-phase 415 V output, PV MPPT + MSEDCL AC input, source selection and protections	Set	1		
3	10 HP, 3-phase, 415 V Monoblock/submersible pump with water-filled motor, selected for calculated TDH and discharge	Set	1		
4	Hot-dip galvanized MS module mounting structure, rails, legs, bracing, fasteners and foundation hardware	Lot	1		
5	1.5 kV DC, UV-resistant solar copper cable, preliminary 4/6 sq.mm, including interconnections	Mtr	200		
6	Submersible flat copper motor cable, preliminary 4C × 6 sq.mm; final length as per bore depth and voltage-drop calculation	Mtr	100		
7	AC input/output copper armoured cable, preliminary 4C × 6 sq.mm; final size as per route and installation conditions	Mtr	50		
8	PV DCDB with string fuses, DC isolator, Type-II DC SPD and IP65 enclosure	Set	1		
9	ACDB / hybrid protection panel with MCCB/MCB, contactor, overload and short-circuit protection, AC SPD and indications	Set	1		
10	MC4-compatible connectors, branch connectors, glands, lugs, ferrules, cable tags and accessories	Lot	1		

11	Earthing system: 3 earth electrodes/pits, GI strip/wire, clamps, inspection chambers and testing	Set	1		
12	Lightning protection system including air terminal, down conductor, test link and earth termination, as per site design	Set	1		
13	Pump delivery-line accessories including NRV, gate valve, pressure gauge and fittings (provisional allowance)	Lot	1		
14	Civil works: module-structure foundations, controller plinth, cable trenching and reinstatement (provisional allowance)	Lot	1		
15	Installation, erection, testing, commissioning, programming and operator training	Job	1		
16	Transportation, handling, mobilization and project documentation	Lot	1		

B)Hybrid solar system for 02 HP Pump Qty 04Nos

Sr. No.	Description of Material / Work	Unit	Qty.	Rate (₹)	Amount (₹)
1	600 Wp N-Type TOPCon / high-efficiency Mono PERC solar PV module, IEC certified, with OEM warranty	Nos.	15		
2	Hybrid Solar Pump VFD/Controller, 3 kW minimum, 3-phase 415 V output, PV MPPT + MSEDCL AC input, source selection and protections	Set	4		
3	2 HP, 3-phase, 415 V Monoblock/submersible pump with water-filled motor, selected for calculated TDH and discharge	Set	4		
4	Hot-dip galvanized MS module mounting structure, rails, legs, bracing, fasteners and foundation hardware	Lot	4		
5	1.5 kV DC, UV-resistant solar copper cable, preliminary 4/6 sq.mm, including interconnections	Mtr	800		
6	Submersible flat copper	Mtr	400		

C)Hybrid solar system for 7.5 HP Pump Qty 01Nos

Sr. No.	Description of Material / Work	Unit	Qty.	Rate (₹)	Amount (₹)
1	600 Wp N-Type TOPCon / high-efficiency Mono PERC solar PV module, IEC certified, with OEM warranty	Nos.	18		
2	Hybrid Solar Pump VFD/Controller, 9 kW minimum, 3-phase 415 V output, PV MPPT + MSEDCL AC input, source selection and protections	Set	1		
3	7.5 HP, 3-phase, 415 V Monoblock/submersible pump with water-filled motor, selected for calculated TDH and discharge	Set	1		
4	Hot-dip galvanized MS module mounting structure, rails, legs, bracing, fasteners and foundation hardware	Lot	1		
5	1.5 kV DC, UV-resistant solar copper cable, preliminary 4/6 sq.mm, including interconnections	Mtr	200		
6	Submersible flat copper motor cable, preliminary 4C × 6 sq.mm; final length as per bore depth and voltage-drop calculation	Mtr	100		
7	AC input/output copper armoured cable, preliminary 4C × 6 sq.mm; final size as per route and installation conditions	Mtr	50		
8	PV DCDB with string fuses, DC isolator, Type-II DC SPD and IP65 enclosure	Set	1		
9	ACDB / hybrid protection panel with MCCB/MCB, contactor, overload and short-circuit protection, AC SPD and indications	Set	1		
10	MC4-compatible connectors, branch connectors, glands, lugs, ferrules, cable tags and accessories	Lot	1		
11	Earthing system: 3 earth electrodes/pits, GI strip/wire, clamps, inspection chambers and testing	Set	1		

	motor cable, preliminary 4C × 6 sq.mm; final length as per bore depth and voltage-drop calculation				
7	AC input/output copper armoured cable, preliminary 4C × 6 sq.mm; final size as per route and installation conditions	Mtr	200		
8	PV DCDB with string fuses, DC isolator, Type-II DC SPD and IP65 enclosure	Set	4		
9	ACDB / hybrid protection panel with MCCB/MCB, contactor, overload and short-circuit protection, AC SPD and indications	Set	4		
10	MC4-compatible connectors, branch connectors, glands, lugs, ferrules, cable tags and accessories	Lot	4		
11	Earthing system: 3 earth electrodes/pits, GI strip/wire, clamps, inspection chambers and testing	Set	4		
12	Lightning protection system including air terminal, down conductor, test link and earth termination, as per site design	Set	4		
13	Pump delivery-line accessories including NRV, gate valve, pressure gauge and fittings (provisional allowance)	Lot	4		
14	Civil works: module-structure foundations, controller plinth, cable trenching and reinstatement (provisional allowance)	Lot	4		
15	Installation, erection, testing, commissioning, programming and operator training	Job	4		
16	Transportation, handling, mobilization and project documentation	Lot	4		

12	Lightning protection system including air terminal, down conductor, test link and earth termination, as per site design	Set	1		
13	Pump delivery-line accessories including NRV, gate valve, pressure gauge and fittings (provisional allowance)	Lot	1		
14	Civil works: module-structure foundations, controller plinth, cable trenching and reinstatement (provisional allowance)	Lot	1		
15	Installation, erection, testing, commissioning, programming and operator training	Job	1		
16	Transportation, handling, mobilization and project documentation	Lot	1		

D) Hybrid solar system for 5 HP Pump Qty 01Nos

Sr. No.	Description of Material / Work	Unit	Qty.	Rate (₹)	Amount (₹)
1	600 Wp N-Type TOPCon / high-efficiency Mono PERC solar PV module, IEC certified, with OEM warranty	Nos.	12		
2	Hybrid Solar Pump VFD/Controller, 9 kW minimum, 3-phase 415 V output, PV MPPT + MSEDCL AC input, source selection and protections	Set	1		
3	5 HP, 3-phase, 415 V Monoblock/submersible pump with water-filled motor, selected for calculated TDH and discharge	Set	1		
4	Hot-dip galvanized MS module mounting structure, rails, legs, bracing, fasteners and foundation hardware	Lot	1		
5	1.5 kV DC, UV-resistant solar copper cable, preliminary 4/6 sq.mm, including interconnections	Mtr	200		
6	Submersible flat copper motor cable, preliminary 4C × 6 sq.mm; final length as per bore depth and voltage-drop calculation	Mtr	100		
7	AC input/output copper armoured cable, preliminary 4C × 6 sq.mm; final size as	Mtr	50		

	per route and installation conditions				
8	PV DCDB with string fuses, DC isolator, Type-II DC SPD and IP65 enclosure	Set	1		
9	ACDB / hybrid protection panel with MCCB/MCB, contactor, overload and short-circuit protection, AC SPD and indications	Set	1		
10	MC4-compatible connectors, branch connectors, glands, lugs, ferrules, cable tags and accessories	Lot	1		
11	Earthing system: 3 earth electrodes/pits, GI strip/wire, clamps, inspection chambers and testing	Set	1		
12	Lightning protection system including air terminal, down conductor, test link and earth termination, as per site design	Set	1		
13	Pump delivery-line accessories including NRV, gate valve, pressure gauge and fittings (provisional allowance)	Lot	1		
14	Civil works: module-structure foundations, controller plinth, cable trenching and reinstatement (provisional allowance)	Lot	1		
15	Installation, erection, testing, commissioning, programming and operator training	Job	1		
16	Transportation, handling, mobilization and project documentation	Lot	1		

3. Detailed Technical Specifications

Equipment	Minimum Technical Requirements
Solar PV Modules 25 Year on site warranty	600 Wp N-Type TOPCon or high-efficiency Mono PERC; compliance with IEC 61215 and IEC 61730; anodised aluminium frame; tempered glass; IP68 junction box; MC4-compatible leads; module serial numbers and OEM warranty documents.
Hybrid Solar Pump VFD 25 Year on site warranty	Minimum 11 kW continuous motor rating; 3-phase 415 V, 50 Hz output; PV DC MPPT input; 3-phase AC grid input; Solar Priority / Grid Priority / Manual selection; automatic source transfer; adjustable frequency; soft start/stop; dry-run, overload, short-circuit, over/under-

	voltage, phase-loss, over-temperature and surge protections; display of operating parameters and fault history.
Pump and Motor	10/7.5/5/2 HP, 3-phase, 415 V, 50 Hz; suitable for the approved head-discharge duty point; pump curve and motor nameplate to be submitted; suitable delivery connection and non-return valve; OEM test certificate.
Module Mounting Structure 25 Year on site warranty	Hot-dip galvanised steel structure; design for applicable wind loads and site conditions; tilt/orientation as per site layout; corrosion-resistant fasteners and safe maintenance access.
PV DC Protection 25 Year on site warranty	String fuses as required by string design; DC isolator; Type-II DC SPD; polarity identification; IP65 enclosure; DC voltage/current rating compatible with the selected controller.
AC Protection Panel 25 Year on site warranty	MCCB/MCB, contactor, motor overload protection, phase failure/sequence protection, Type-II AC SPD, emergency stop, lockable isolator and proper protective earthing.
Earthing and Lightning Protection 25 Year on site warranty	Protective earthing for PV module frames, mounting structure, controller and AC panel; lightning protection based on site risk assessment; installation and test values as per applicable standards and authority requirements.

4. Preliminary Cable Sizing and Electrical Calculations

Circuit	Preliminary Selection	Final Design Requirement
PV string cable	4/6 sq.mm, 1.5 kV DC, UV-resistant copper	Confirm from string short-circuit current, cable length, voltage drop and controller input limits.
pump cable	4C × 6 sq.mm copper (preliminary)	Confirm from total borewell cable length, motor current, starting/operating conditions and voltage drop; 10 sq.mm or larger may be required for longer runs.
MSEDCL AC input	4C × 6 sq.mm copper armoured (preliminary)	Confirm from route length, installation method, fault level and permissible voltage drop.
Controller-to-motor cable	VFD-compatible screened/shielded cable where required by OEM	Follow VFD manufacturer recommendations; assess output reactor/filter requirement based on cable length and motor insulation.

5. System Operating Sequence

When adequate sunlight is available, the PV array supplies DC power to the controller. The MPPT stage regulates PV operation and the VFD supplies controlled 3-phase AC power to the motor.

When solar power becomes insufficient, the controller shall transfer to MSEDCL grid supply in accordance with the OEM-approved hybrid operating logic. Confirm whether motor restart is required during source transfer.

If MSEDCL supply is unavailable and solar power is insufficient, the pump will stop. Battery backup is not included in this proposal.

Parallel operation of PV and grid, grid export and net metering are not assumed. Any grid-interactive/export arrangement requires separate MSEDCL approval and a suitably certified design.

6. Testing, Safety and Handover Documents

PV string open-circuit voltage, polarity, insulation resistance and string-current checks.

AC input voltage, phase sequence, earthing continuity, insulation resistance and protective-device trip tests.

Pump operating test, discharge/head verification, motor current in all phases and controller fault-log verification.

Functional testing of dry-run, overload, phase-failure, over/under-voltage and emergency-stop protections.

Submission of as-built SLD, cable schedule, panel GA drawing, datasheets, warranties, test reports, user manual and commissioning certificate.

All work shall comply with applicable CEA Safety Regulations, relevant IS/IEC standards, MSEDCL conditions and instructions of the competent electrical authority.

7. Information Required for Final Engineering

This is a preliminary budgetary estimate. Before issuing a final tender or work order, a site survey and hydraulic pump selection are essential. Since the total dynamic head, discharge, Openweel/bore well/Submersible depth, pumping water level and delivery route have not yet been confirmed, the pump model/stages, final motor-cable length, pipe diameter and controller configuration remain subject to verification.

Information Required	Purpose
Source type and borewell/well dimensions	To confirm pump type and installation arrangement.
Static water level, pumping water level and borewell depth	To calculate Total Dynamic Head (TDH) and select pump stages.
Required discharge in LPM or m^3/hr and daily water requirement	To determine pump duty point and PV energy requirement.
Tank elevation and horizontal delivery distance	To calculate delivery head, pipe diameter and friction losses.
MSEDCL voltage, sanctioned load and existing starter details	To verify grid input compatibility and protection coordination.
Available shadow-free area for PV modules	To finalise PV layout, tilt and generation estimate.
Actual cable route lengths	To calculate cable cross-section and voltage drop.

8. Recommended Warranty and AMC Conditions

Component	Recommended Tender Condition
Solar PV Modules	OEM product warranty and 25-year performance warranty, as per manufacturer datasheet and tender conditions.
Hybrid VFD / Controller	Minimum 2-year comprehensive OEM warranty; 25-year option may be considered.
Installation Workmanship	Minimum 2-year workmanship warranty.

Note:-This inquiry is intended solely to obtain an indicative price and is limited to preliminary cost estimation purposes only.