

REQUEST FOR QUOTATION (RFQ)

RFQ Reference: RFQ/054/IND-2021	Date: 08 June 2021
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Subject: Proposed Electrical works at SDMC Swachata Kendra, Dwarka, New Delhi.

SECTION 1: REQUEST FOR QUOTATION (RFQ)

UNDP kindly requests your quotation for the provision of works as detailed in Annex 1 of this RFQ.

This Request for Quotation comprises the following documents:

Section 1: This request letter

Section 2: RFQ Instructions and Data

Annex 1: Schedule of Requirements

Annex 2: Quotation Submission Form

Annex 3: Technical and Financial Offer

Annex 4: Drawings

When preparing your quotation, please be guided by the RFQ Instructions and Data. Please note that quotations must be submitted using Annex 2: Quotation Submission Form and Annex 3 Technical and Financial Offer, by the method and by the date and time indicated in Section 2. It is your responsibility to ensure that your quotation is submitted on or before the deadline. Quotations received after the submission deadline, for whatever reason, will not be considered for evaluation.

Thank you and we look forward to receiving your quotations.

Issued by:

Signature: _____

Name: Arun Arumughan

Title: Procurement Analyst

Date: 08 June 2021

SECTION 2: RFQ INSTRUCTIONS AND DATA

Introduction	<p>Bidders shall adhere to all the requirements of this RFQ, including any amendments made in writing by UNDP. This RFQ is conducted in accordance with the UNDP Programme and Operations Policies and Procedures (POPP) on Contracts and Procurement</p> <p>Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by UNDP. UNDP is under no obligation to award a contract to any Bidder as a result of this RFQ.</p> <p>UNDP reserves the right to cancel the procurement process at any stage without any liability of any kind for UNDP, upon notice to the bidders or publication of cancellation notice on UNDP website.</p>
Deadline for the Submission of Quotation	<p>June 22, 2021</p> <p>If any doubt exists as to the time zone in which the quotation should be submitted, refer to http://www.timeanddate.com/worldclock/.</p> <p>For eTendering submission - as indicated in eTendering system. Note that system time zone is in EST/EDT (New York) time zone.</p> <p>PLEASE NOTE: -</p> <ol style="list-style-type: none"> 1. Date and time visible on the main screen of event (on e-tendering portal) will be final and prevail over any other closing time indicated elsewhere, in case they are different. Please also note that the bid closing time shown in the PDF file generated by the system is not accurate due to a technical glitch that we will resolve soon. The correct bid closing time is as indicated in the e-tendering portal and system will not accept any bid after that time. It is the responsibility of the bidder to make sure bids are submitted within this deadline. UNDP will not accept any bid that is not submitted directly in the system. 2. Try to submit your bid a day prior or well before the closing time. Do not wait until last minute. If you face any issue submitting your bid at the last minute, UNDP may not be able to assist.
Method of Submission	<p>Quotations must be submitted as follows:</p> <p><input checked="" type="checkbox"/> E-tendering</p> <p>Bid submission address: Online UNDP E-tendering Portal</p> <ul style="list-style-type: none"> ▪ File Format: PDF files only ▪ File names must be maximum 60 characters long and must not contain any letter or special character other than from Latin alphabet/keyboard. ▪ All files must be free of viruses and not corrupted. ▪ Max. File Size per transmission: 10 MB ▪ It is recommended that the entire Quotation be consolidated into as few attachments as possible. ▪ The bidder should receive an email acknowledging email receipt. <p>[For eTendering method, click the link https://etendering.partneragencies.org]</p> <p>Detailed instructions on how to submit, modify or cancel a bid in the eTendering system are provided in the eTendering system Bidder User Guide and Instructional videos available on this link: http://www.undp.org/content/undp/en/home/operations/procurement/business/procurement-notice/resources/</p>
Cost of preparation of quotation	<p>UNDP shall not be responsible for any costs associated with a Supplier's preparation and submission of a quotation, regardless of the outcome or the manner of conducting the selection process.</p>
Supplier Code of	<p>All prospective suppliers must read the United Nations Supplier Code of Conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN. The Code of Conduct, which</p>

Conduct, Fraud, Corruption,	<p>includes principles on labour, human rights, environment and ethical conduct may be found at: https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct</p> <p>Moreover, UNDP strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of UNDP vendors and requires all bidders/vendors to observe the highest standard of ethics during the procurement process and contract implementation. UNDP's Anti-Fraud Policy can be found at http://www.undp.org/content/undp/en/home/operations/accountability/audit/office_of_audit_an_dinvestigation.html#anti</p>
Gifts and Hospitality	<p>Bidders/vendors shall not offer gifts or hospitality of any kind to UNDP staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches, dinners or similar. In pursuance of this policy, UNDP: (a) Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question; (b) Shall declare a vendor ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it determines that the vendor has engaged in any corrupt or fraudulent practices in competing for, or in executing a UNDP contract.</p>
Conflict of Interest	<p>UNDP requires every prospective Supplier to avoid and prevent conflicts of interest, by disclosing to UNDP if you, or any of your affiliates or personnel, were involved in the preparation of the requirements, design, specifications, cost estimates, and other information used in this RFQ. Bidders shall strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. Bidders found to have a conflict of interest shall be disqualified.</p> <p>Bidders must disclose in their Bid their knowledge of the following: a) If the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel who are family members of UNDP staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving goods and/or services under this RFQ.</p> <p>The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to UNDP's further evaluation and review of various factors such as being registered, operated and managed as an independent business entity, the extent of Government ownership/share, receipt of subsidies, mandate and access to information in relation to this RFQ, among others. Conditions that may lead to undue advantage against other Bidders may result in the eventual rejection of the Bid.</p>
General Conditions of Contract	<p>Any Purchase Order or contract that will be issued as a result of this RFQ shall be subject to the General Conditions of Contract</p> <p><input checked="" type="checkbox"/> General Terms and Conditions / Special Conditions for Contract.</p> <p>Applicable Terms and Conditions and other provisions are available at UNDP/How-we-buy</p>
Special Conditions of Contract	<p><input checked="" type="checkbox"/> Cancellation of PO/Contract if the delivery/completion is delayed by [8 Weeks]</p>
Eligibility	<p>A vendor who will be engaged by UNDP may not be suspended, debarred, or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization. Vendors are therefore required to disclose to UNDP whether they are subject to any sanction or temporary suspension imposed by these organizations. Failure to do so may result in termination of any contract or PO subsequently issued to the vendor by UNDP.</p> <p>It is the Bidder's responsibility to ensure that its employees, joint venture members, sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by UNDP.</p> <p>Bidders must have the legal capacity to enter a binding contract with UNDP and to deliver in the country, or through an authorized representative.</p>

Currency of Quotation	<p>Quotations shall be quoted in:</p> <p>Preferred Currency of Bid : Indian Rupees (INR)</p> <p>Bids in other currency also allowed.</p> <p>Reference date for determining UN Operational Exchange Rate : Date of bid submission.</p>
Joint Venture, Consortium or Association	<p>If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the JV, Consortium or Association jointly and severally, which shall be evidenced by a duly notarized Agreement among the legal entities, and submitted with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNDP and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture, Consortium or Association.</p> <p>Refer to Clauses 19 – 24 under Solicitation policy for details on the applicable provisions on Joint Ventures, Consortium or Association.</p>
Only one Bid	<p>The Bidder (including the Lead Entity on behalf of the individual members of any Joint Venture, Consortium or Association) shall submit only one Bid, either in its own name or, if a joint venture, Consortium or Association, as the lead entity of such Joint Venture, Consortium or Association.</p> <p>Bids submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following:</p> <ul style="list-style-type: none"> a) they have at least one controlling partner, director or shareholder in common; or b) any one of them receive or have received any direct or indirect subsidy from the other/s; or c) they have the same legal representative for purposes of this RFQ; or d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Bid of, another Bidder regarding this RFQ process; e) they are subcontractors to each other's Bid, or a subcontractor to one Bid also submits another Bid under its name as lead Bidder; or f) some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this RFQ process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid.
Duties and taxes	<p>Article II, Section 7, of the Convention on the Privileges and Immunities provides, inter alia, that the United Nations, including UNDP as a subsidiary organ of the General Assembly of the United Nations, is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use. All quotations shall be submitted net of any direct taxes and any other taxes and duties, unless otherwise specified below:</p> <p>All prices must:</p> <p><input checked="" type="checkbox"/> be exclusive of GST and other applicable indirect taxes</p>
Language of quotation	<p>English</p> <p>Including documentation including catalogues, instructions and operating manuals.</p>
Documents to be submitted	<p>Bidders shall include the following documents in their quotation:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Annex 2: Quotation Submission Form duly completed and signed <input checked="" type="checkbox"/> Annex 3: Technical and Financial Offer duly completed and signed and in accordance with the Schedule of Requirements in Annex 1 <input checked="" type="checkbox"/> Company Profile. <input checked="" type="checkbox"/> Registration certificate; <input checked="" type="checkbox"/> Documents showing that the bidder has an experience of a minimum of two years and have executed atleast one similar assignment – proof of purchase/work order is to be submitted plus client's contact details who may be contacted for further information on those contracts;

Quotation validity period	Quotations shall remain valid for 90 days from the deadline for the Submission of Quotation.
Price variation	No price variation due to escalation, inflation, fluctuation in exchange rates, or any other market factors shall be accepted at any time during the validity of the quotation after the quotation has been received.
Partial Quotes	<input checked="" type="checkbox"/> Not permitted
Alternative Quotes	<input checked="" type="checkbox"/> Not permitted
Payment Terms	UNDP will follow the below given payment schedule. <input checked="" type="checkbox"/> 100% - After satisfactory completion of work.
Conditions for Release of Payment	<input checked="" type="checkbox"/> Written Acceptance of Goods, Services and Works, based on full compliance with RFQ requirements
Contact Person for correspondence, notifications and clarifications	E-mail address: vijay.thapliyal@undp.org Please write to Mr Yogesh Kumar at yogesh.kumar@undp.org for more information about the location. Attention: Quotations shall not be submitted to this address but to the address for quotation submission above. Otherwise, offer shall be disqualified. Any delay in UNDP's response shall be not used as a reason for extending the deadline for submission, unless UNDP determines that such an extension is necessary and communicates a new deadline to the Proposers.
Clarifications	Requests for clarification from bidders will not be accepted any later than 5 days before the submission deadline. Responses to request for clarification will be communicated thru email/ Posted directly to eTendering portal.
Evaluation method	<input checked="" type="checkbox"/> The Contract or Purchase Order will be awarded to the lowest price substantially compliant offer
Evaluation criteria	<input checked="" type="checkbox"/> Full compliance with all requirements as specified in Annex 1 <input checked="" type="checkbox"/> Full acceptance of the General Conditions of Contract <i>Compliance on the following requirements</i> <input checked="" type="checkbox"/> Registration certificate; <input checked="" type="checkbox"/> Documents showing that the bidder has an experience of a minimum of two years and have executed atleast one similar assignment – proof of purchase/work order is to be submitted plus client's contact details who may be contacted for further information on those contracts;
Right not to accept any quotation	UNDP is not bound to accept any quotation, nor award a contract or Purchase Order

Right to vary requirement at time of award	At the time of award of Contract or Purchase Order, Click or tap here to enter text. reserves the right to vary (increase or decrease) the quantity of services and/or goods, by up to a maximum twenty-five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.
Type of Contract to be awarded	<input checked="" type="checkbox"/> Contract Face Sheet (Goods and-or Services)
Expected date for contract award.	28 June 2021
Publication of Contract Award	UNDP will publish the contract awards valued at USD 100,000 and more on the websites of the CO and the corporate UNDP Web site.
Policies and procedures	This RFQ is conducted in accordance with UNDP Programme and Operations Policies and Procedures
UNGM registration	<p>Any Contract resulting from this RFQ exercise will be subject to the supplier being registered at the appropriate level on the United Nations Global Marketplace (UNGM) website at www.ungm.org.</p> <p>The Bidder may still submit a quotation even if not registered with the UNGM, however, if the Bidder is selected for Contract award, the Bidder must register on the UNGM prior to contract signature.</p>

ANNEX 1: SCHEDULE OF REQUIREMENTS

Proposed Electrical works at SDMC Swachata Kendra, Dwarka, New Delhi.

Duration of the assignment: 8 Weeks from the issue of the contract

S. No.	INTERNAL ELECTRICAL WORKS
	INTERNAL ELECTRICAL WORKS
A)	POINT WIRING:-
1	Supplying all materials, storing, handling, fixing, laying, wiring and testing for the following Light Point with 2 x 1.5 + 1 x 1.5 sq.mm FR insulated multistranded copper conductor 1100 volts grade stranded flexible wires in concealed/surface mounted PVC Conduit including cost of cutting & filling chases/ saddle, clamps, inspection/solid bends, sockets etc. and providing and fixing of 6 amps single pole modular flush mounted switch & switch plate in 1.2mm thick & 65mm deep GI box. The cost of circuit wiring with 2 x 2.5 + 1 x 1.5 Sq.mm FR insulated multistranded copper conductor 1100 Volts grade wires shall be included in the cost of point wiring. (Cost of fish wire also to be included in the item)
1.1	Controlled by one 6A Modular Switch:
a)	First Point
b)	Loop Point
1.2	Same as above item no. 1.1 but controlled by two (2) Nos. two way switch.
a)	First Point
b)	Loop Point
1.3	Same as above item no. 1.1 but directly controlled from MCB in DB (Cost of MCB not be included.)
a)	First Point
b)	Loop Point
2	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 6A, 5-pin light plug with FR insulated multistranded copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of plate, modular type switch socket (6A) and earthing complete with all accessories as required. The first point wiring shall be done with 2 x 2.5 + 1 x 1.5 Sq.mm wires and looping shall be done with 2 x 1.5 + 1 x 1.5 Sq.mm wires. Only one point to be looped (light plug). (Cost of fish wire also to be included in the item)
a)	First point
b)	loop point
3	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 2 x 6A, 5-pin light plug with FR insulated multistranded copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of plate, set of 2 Nos. modular type socket (6A) controlled by 1 No. 6A switch and earthing complete with all accessories as required. The first point wiring shall be done with 2 x 2.5 + 1 x 1.5 Sq.mm wires and looping shall be done with 2 x 1.5 + 1 x 1.5 Sq.mm wires. Only one point and to be looped (UPS Fed). (Cost of fish wire also to be included in the item).
a)	first point
b)	loop point

S. No.	INTERNAL ELECTRICAL WORKS
4	Supplying all materials, storing, handling, fixing laying, wiring and testing for exhaust fan point wiring with 2 x 1.5 + 1 x 1.5 sq.mm FR insulated copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of 6 amp modular switch and suitable plate on the existing switchboard near door and 6A, 3 pin plug to be provided near exhaust fan (cost of fish wire to be included in the item).
5	Supplying all materials, storing, handling, fixing laying, wiring and testing for ceiling fan point wiring with 2 x 1.5 + 1 x 1.5 sq.mm FR insulated copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting fixing of 6 amp single pole modular flush mounted switch & switch plate.(cost of fire wire wire to be included in the item).
6	Providing and fixing circular/ Hexagonal MS box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick MS sheet with its top surface hacked for proper bonding, top lid shall be screwed into the GI box by means of 3.3 mm dia round headed screws, one lock at the corners, clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.
7	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.
8	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 16 Amp power outlet with FR insulated copper conductor wires in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of 6 pin 16 Amps shuttered modular switch socket, switch plate with internal wiring , earthing of 3rd pin. The wiring shall be done with 2 x 4.0 + 1 x 2.5 Sqmm copper wire and looping shall be done with 2 x 2.5 + 1 x 1.5 Sqmm. (Power Socket). (cost of fire wire wire to be included in the item).
a)	First Point
b)	Loop Point
9	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 20 Amp power outlet for AC with FR insulated copper conductor wires in concealed/surface mounted MS Conduit including cost of cutting and filling chases as required with fixing of 6 pin 16 Amps shuttered modular switch socket, switch plate with internal wiring , earthing of 3rd pin. The wiring shall be done with 2 x 4.0 + 1 x 2.5 Sqmm copper wire and looping shall be done with 2 x 2.5 + 1 x 1.5 Sqmm. (AC Socket). (cost of fire wire wire to be included in the item).
10	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.
	Bell push
11	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.
12	Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.
14	Supplying and fixing call bell/ buzzer suitable for single phase, 230 volts, complete as required.
15	Supply, Installation, testing and commissioning of Multi-sensor suitable for single phase, 230 volts, complete as required.
16	Supply, Installation, testing and commissioning of USB Charging socket for single phase, 230 volts, complete as required.

S. No.	INTERNAL ELECTRICAL WORKS
17	Providing and fixing of following sizes of PVC conduit on surface/recessed including cost of cutting and filling chases as required along with all accessories etc. complete as required (cost of fish wire to be included in the item).
b)	32mm dia. conduit
c)	25mm dia. conduit
Notes:	1. All copper wires shall be of FR insulated.
-	2. Sizes of conduit/conduit accessories will be as per the maximum nos. of wires to be drawn in the conduit as given in the technical specification/Relevant standard.
B)	SUB-MAINS CABLE FOR DBs:-
	Supplying, installation, testing, Termination and commissioning of XLPE armored Aluminum cable for submain of DBs suitable size 1100 volts grade as per technical specifications and drawings enclosed with this document
a)	2 X 4 sq. mm + 1 X 2.5 sq. mm earth wire
b)	2 X 6 sq. mm + 1 X 4 sq. mm earth wire
c)	4 X 16 sq. mm + 2 X 10 sq. mm earth wire
C)	LIGHT FIXTURES AND FANS (SUPPLY ONLY):-
	Installation, testing, commissioning, receiving the lighting fixture and fan including assembling etc. of the following lighting fixtures and Fans including fixing arrangement and with all accessories as required with necessary GI pipe/steel pipe etc. as required for hanging of lighting fixtures and Fan.
a)	18W wall mounted LED Batten light. (Make Philips, Model no. :-MASS LED TUBE 1200MM 18W 865 T8) or Equivalent to Wipro & Bajaj.
b)	12W surface mounted circular LED light. (Make Wipro, Model no. :- D641265) or Equivalent to Philips, Bajaj.
c)	8-10 W LED Mirror Light.
d)	Supply of 7W LED Wall Bracket Light. Make- Philips, Model- (E27 6500K A60 ND) or Equivalent to Trilux, GE
e)	Bulk head light. (Make Philips, Model no. :-WT202W LED6S NW PSU S2 PC) or Equivalent to Trilux, GE.
f)	Led flood light - minimum 11,000 lumens & one year warranty
g)	Exit sign Light
h)	Ceiling Fan of 1200mm sweep complete erected in position with all accessories.(Make- Havel's) or Equivalent to Orient, Crompton Greave.
i)	Exhaust Fan Heavy duty 230V A.C 50 cycles 375 mm 1400 RPM complete erected in position with all accessories. (Make- Havel's)
j)	SITC of stainless steel/ aluminum- wind driven, turbo ventilator, 600mm dia., with minimum exhaust capacity of 1927 CFM. Installation of ventilator to be done in correct alignment under supervision of engineer in charge followed by proper weather proof sealing between edges of ventilator and GI sheet.

S. No.	INTERNAL ELECTRICAL WORKS
Notes:	
1)	The type of fittings/make will be decided after interior designer selects the fittings. However, erection rate quoted shall hold good for a similar type of fittings and no extra charge will be paid on this account.
2)	Above item are based on General requirement on the preliminary drawings. Quantity are approximate & may change based on revised layout.
D)	LIGHT FIXTURES AND FANS (INSTALLATION ONLY):-
	Supply the lighting fixture and fan including assembling etc. of the following lighting fixtures and Fans including fixing arrangement and with all accessories as required with necessary GI pipe/steel pipe etc. as required for hanging of lighting fixtures and Fan.
a)	18W wall mounted LED Batten light. (Make Philips, Model no. :-MASS LED TUBE 1200MM 18W 865 T8) or Equivalent to Wipro & Bajaj.
b)	12W surface mounted circular LED light. (Make Wipro, Model no. :- D641265) or Equivalent to Philips, Bajaj.
c)	8-10 W LED Mirror Light.
d)	7W LED Wall Bracket Light. Make- Philips, Model- (E27 6500K A60 ND) or Equivalent to Trilux, GE
e)	Bulk head light. (Make Philips, Model no. :-WT202W LED6S NW PSU S2 PC) or Equivalent to Trilux, GE.
f)	Led flood light - minimum 11,000 lumens & one year warranty
g)	Exit sign Light
h)	Ceiling Fan of 1200mm sweep complete erected in position with all accessories.(Make- Havel's) or Equivalent to Orient, Crompton Greaves.
i)	Exhaust Fan Heavy duty 230V A.C 50 cycles 375 mm 1400 RPM complete erected in position with all accessories. (Make- Havel's)
Notes:	
1)	The type of fittings/make will be decided after interior designer selects the fittings. However, erection rate quoted shall hold good for a similar type of fittings and no extra charge will be paid on this account.
2)	Above item are based on General requirement on the preliminary drawings. Quantity are approximate & may change based on revised layout.
E)	DISTRIBUTION BOARDS:-
	Supply, installation, testing & commissioning of following MCB double door type prewired Distribution boards as per drawing & specification fabricated out of 16 SWG CRCA sheet steel in compartmentalized design as per specification and drawings these distribution boards shall be surface/ recessed in walls. The rate includes the painting, numbering earthing etc. as required. DB shall be suitable for incoming aluminum armored cable.
1	8 Way TPN DB (MACHINES AREA)
	Comprising of following:
	Incoming:

S. No.	INTERNAL ELECTRICAL WORKS
	One (1) No. 63A FP MCB (10kA)
	Three (3) Nos. 40A DP RCBO (100mA)
	Outgoing:
	Eighteen (18) Nos. 6-20A SP MCB (10kA)
	Neutral link:
	Separate for each outgoing
	Earthing Terminals:
	Earthing terminals suitable for outgoing as above.
2	6 Way SPN DB (FOR Toilet+ Meeting Room area)
	Comprising of following:
	Incoming:
	25A DP RCBO (100mA)
	Outgoing:
	Four (4) Nos. 6A-25A SP MCB (10kA)
	Neutral link:
	Separate for each outgoing
	Earthing Terminals:
	Earthing terminals suitable for outgoing as above.
F)	SAFETY EQUIPMENTS :
1.0	Providing and fixing NO SMOKING & DANGER ZONE signboards.
2.0	Supply and fixing of approved shock treatment chart in position & written in English and Hindi. The chart shall be framed using wooden frame and glass.
3.0	Insulating Mats
3.1	Supply, installation, testing commissioning of Insulating Mats of size 1m x 2m x 2mm for AC rms voltage grade up to 1.1 kV with dielectric strength of C Class, fire retarded complete in all respect.

	EXTERNAL ELECTRICAL WORKS
G)	CABLE TRAYS & RACEWAYS:-
1	Cable tray

	EXTERNAL ELECTRICAL WORKS
	Providing and fixing of the following Hot dip Galvanized cable tray along with necessary coupler plates, nuts, bolts and washer with the following specifications, including cost of providing and fixing supporting steel structure hanging arrangement as mentioned below along with dash fasteners, nuts, bolts and washers etc. for suspending cable trays. (All accessories like tees, bends vertical / horizontal shall be factory fabricated and cost of these to be included in the rate. Site fabricated accessories are not acceptable).
1.1	Perforated Type
a)	300mm(W) x 40 mm (D)
b)	150mm(W) x 40 mm (D)
H)	EARTHING SYSTEM
1	EARTHING STATION
	Body earthing for Bailer Machine, Extruder Machine, Agglomeration Machine, Shredder Machine, Fatka Machine, Conveyor Belt.
1.1	Supply, installation, testing and commissioning of UL listed CPRI Tested maintenance free copper coated earth rod of 3 meter having diameter of 17.2mm with 250 micron copper coating with clamp made of stainless steel or gun metal for terminating cable / flat conductor. Earth enhancing mineral (PROCEM) compound 25 kg tested for Leaching & TCLP with NABL accredited lab. The systems is conforming to IS 3043, IS / IEC 62305, IEC 61643-5-54, UL 467, the rod has to be tested to for dimension, marking, tensile strength, salt mist, coating thickness, electrical resistivity test before and after corrosion test etc. as per IEC 62561-2.
1.2	Supply, installation, testing and commissioning of Heavy Duty chamber with cover made on polypropylene material with tested to carry 5000 Kg with pulling hook size approx. 300x300 mm
2	EARTHING STRIP/WIRES:
	Supply & laying of hot dipped GI/pure copper earthing strip to connect to the DBS, Poles and equipment's in outdoor yard and also in indoor portion of substation.
i	25 x 5 mm GI strip
ii	32 x 6 mm GI strip
iii	8 SWG GI wire
I)	LT CABLES & TERMINATION :
1.1	L.T CABLES
	Supply, laying, testing and commissioning of 1100 Volt grade XLPE insulated extruded PVC inner and outer sheathed armored cables conforming to IS 7098 amended up to date including the cost of providing required gap between adjacent cables (minimum one cable dia.) and including the cost of providing identification tags etc. complete as per specification, as required.
a)	3.5C x 240 sq mm Aluminum
b)	3.5C x 120 sq mm Aluminum
c)	3.5C x 70 sq mm Aluminum
d)	3.5C x 50 sq mm Aluminum

	EXTERNAL ELECTRICAL WORKS
e)	3C x 10 sq mm Aluminum
1.2	Cable termination :
1.2.1	Supplying, installation of all materials for terminations of 1.1 KV grade copper/aluminum multicore cables. The work includes cable glanding using brass plated , sizing the core leads, removing insulation, fixing suitable crimping type copper lugs/thimbles by using hydraulic crimping tools with correct size of the dies, shaping the leads and neatly connecting the same to the equipment terminals.
a)	3.5C x 240 sq mm Aluminum double compression gland
b)	3.5C x 120 sq mm Aluminum double compression gland
c)	3.5C x 70 sq mm Aluminum double compression gland
d)	3C x 50 sq mm Aluminum single compression gland
e)	3C x 10 sq mm Cu single compression gland
1.3	HUME PIPE AND CHAMBER:-
	Providing and laying HDPE pipe including testing of joints etc. complete.
a)	300 mm dia.
b)	Masonry chamber 450 x 450 x 750 mm with 2nd class brick work in cement mortar 1 : 5 (1 cement : 5 fine sand) for cable laying with RCC top cover 1 : 2 : 4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation, foundation concrete (1 : 5 : 10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a coat of neat cement complete with RCC cover. (300 x 300 x 50 mm). (for LV).
1.4	EXCAVATION:
	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (Not exceeding 1.5 mtr in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, depth upto 1.5mtr. including disposal of excavated earth upto 1 mtr from cutting edge, disposed earth is to be levelled and neatly dressed
	HUME PIPE AND CHAMBER
	EARTHING STRIPS AND PITS
J)	LT PANELS & DISTRIBUTION BOARDS
	FRONT OPERATED PANEL
	General Note for all Panels
Note 1	The Panels/ Switch-boards shall be fabricated out of (load bearing member of 2mm and non load bearing member 1.6 mm thick) CRCA sheet steel, Compartmentised design, modular construction with Form 4b separation for Main Panels & 3b for remaining, Mounting Plates and Internal Partition shall be made of 1.6/2.0mm Aluzinc sheet for better heat dissipation clear space of 300mm or as approved shall be left at the bottom. The operating handle of the topmost switch shall not be higher than 1800mm from the finished floor and maximum height of panels shall not more than 2400mm. The Panel shall be Powder coated to paint of desired shaded in an approved manner.

	EXTERNAL ELECTRICAL WORKS
Note 2	Undervoltage Relay (27)
Note 3	Reverse power RELAY (32)
Note 4	Inverse Definite minimum time overcurrent earth fault relay
Note 5	Overvoltage Relay (59)
Note 6	Buckholz protection (only transformer switch) (63)
Note 7	Emergency stop on Main panel
Note 8	All incomers and Bus coupler panel door should be different color coded for identification and mimic diagram in front of panel should be marks by reflector paints
Note 9	All ACB terminals shall have vertical-vertical configuration for termination of incoming & outgoing bus links. All MCCB's up to 630A shall be provided with rear stud type terminations.
Note 10	Space heater, Thermostat, On/Off switch, LED Lamp , Door operated switch.
Note 11	All Multifunction meters shall communication on ethernet through ethernet ports and shall have % THD and individual harmonics till 15 order
Note 12	ON Indication Light for all Outgoings. with backup MCB (refer SLD)
Note 13	All MCCB should be having Thermal Magnetic based Release UP TO 250 Amp and above 250 amp With Microprocessor Release, Ics=100%Icu with Rotary Handle. Fault Level minimum 25KA
1.0	MAIN LT PANEL
1.01	Design, fabrication, assembly, wiring and supply of front operated dead front cubicle type compartmentalised as per Form 3B, rear access free standing, dust and vermin proof (IP 42 ingress protection) main switchboards suitable for use at 415 volts, 3 phase 4 wire 50 Hertz system suitable for a symmetrical fault level of 25 kA at 415 volts, fabricated from 2 mm thick CRCA MS sheets with hinged, gasketed (metal based neoprene) and lockable doors having structural reinforcement with suitable angle/channel/T/flat sections including 3 mm thick gland plates on top and bottom and including lifting hooks and including GI earth strip of required size with 2 nos earthing terminals and including powder coated paint finish of approved shade over metal surface cleaned and treated with seven tank process complete with interconnections etc as per specifications, as required and as below.
	(Note: The contractor may select the next higher fault rating of MCCB if it is not readily available ,without any extra cost ,as the figure indicated within the bracket are required maximum fault level of the panel).
A	Main Incomer (from 400KVA Transformer)
	1 Nos 630A FP MCCB 26kA With Microprocessor Based Release (O/C,S/C,E/F) Protection & all Accessories in each:
	1 No Under Voltage Relay (27)
	1 No Over Voltage Relay (59)
	1 No. Breaker Control Switch
	1 Nos Multifunction Meter Without RS-485 port

	EXTERNAL ELECTRICAL WORKS
	1 set C.T's 630/5Amp , CL 1.0, 15VA for meter
	1 set C.T's 630/5Amp , CL 1.0, 15VA for APFCR
	1 set Phase Indicating LED Lamps with backup MCB
	1 ses ON,OFF,TRIP indicating LED Lamps with backup MCB.
	Control SP MCB
	1 no emergency stop push button switch (to control whole panel)
B	BUSBAR :-
	FP aluminum bus bars of minimum 800 Amp with heat shrinkable colored sleeves , Shrouds at Joints and including DMC/SMC bus bars supports at required interval complete for cross section, side supports and their spacing
C	OUTGOING
	Note:
	All MCCB should be having Thermal Magnetic based Release ,Ics=100%Icu with Rotary Handle. Fault Level minimum 25KA
	ON,OFF,TRIP Indication Light for all Outgoings. with backup MCB
	2 Nos. 320Amps TP+N ,MCCB with Microprocessor based adjustable with rotary handle
	4 No. 160Amps TP+N ,MCCB with Thermal Magnetic Release adjustable with rotary handle
	3 Nos. 100Amps TP+N ,MCCB with Thermal Magnetic Release adjustable with rotary handle
	Miscellaneous items
	2 nos door switch
	2 nos illumination lights with 6 A,10kA MCB
	ILLUMINATION LED WITH HOLDER & DOOR SWITCH
	2 nos 6" dia exhaust fan with thermostat & suitable canopy
	Internal illumination in Cable alleys with Door operated switch.
2.0	Capacitor Panel (160 kVAR)
A	INCOMER
	1 No. 320Amps TP ,MCCB with Thermal Magnetic Release adjustable with rotary handle <i>from Main Panel</i>
	1 set of Phase Indication LED lights each backed up with 6amp. MCB
	1 Nos Multifinction Meter Without RS-485 port
	1 no- RMI-8 APFC Microprocessor based Relay intelligent type for Transformer and DG side, relay setting 0.8 to .98 power factor) for capacitor bank .built in PF meter
	suitable contactor for above
	3 nos CT's 320/5A class-1(15VA)

	EXTERNAL ELECTRICAL WORKS
	5 nos 6 amp SP MCB
	1no 6 amp DP MCB
	1 no Timer on delay (series 175) 220V AC
	Auto / Manual selector switch (3P,2 way with OFF)
	1 No Thermostat(30-80 degree)
	1 No. Aux. Contactor 8NO+8NC (220V AC)
	1 No. Aux. Contactor 4NO+4NC (220V AC)
	3 Nos. Aux. Contactor 4NO (220V AC)
	BUSBAR :-
	400 Amps 3 pole aluminum conductor (CD 0.8A /sq.mm.) bus bar (PVC sleeve Heat-shrinkable busbar insulation) supported by DMC / FRP insulator (MAIN BUSBAR)
	OUTGOING
	8 sets of ON -OFF push buttons station red & green with ON/OFF indicating lights for each KVAR capacitor unit to indicate its position.
	8 nos Ammeter suitable for each capacitor Bank with CT
	Branch Protection
	2 nos 20 amp TP 10 KA MCB for 5 KVAR
	1 nos. 25 amp TP 10 KA MCB for 10 KVAR
	2 nos. 40 amp TP 10 KA MCB for 20 KVAR
	2 no. 63 amp TP 10 KA MCB for 25 KVAR
	1 nos. 100 amp TP 25 KA MCCB for 50 KVAR
	Capacitor Duty Contactor
	2 nos. Capacitor duty contactor suitable rating for 5 kVAR Rating
	1 nos. Capacitor duty contactor suitable rating for 10 kVAR Rating
	2 nos. Capacitor duty contactor suitable rating for 20 kVAR Rating
	2 no. Capacitor duty contactor suitable rating for 25 kVAR Rating
	1 nos. Capacitor duty contactor suitable rating for 50kVAR Rating
	Capacitor Banks
	2 nos. 525 V, 12.5 kvar Capacitor Bank for 5 kvar
	1 nos. 525 V, 15 kvar Capacitor Bank for 10 kvar
	2 nos. 525 V, 25 kvar Capacitor Bank for 20 kvar

	EXTERNAL ELECTRICAL WORKS
	2 no. 525 V, 30 kvar Capacitor Bank for 25 kvar
	1 nos. 525 V, 2x30 kvar Capacitor Bank for 50 kvar
	Miscellaneous items
	1nos door switch
	1 nos illumination lights with 6 A,10kA MCB
	ILLUMINATION LED WITH HOLDER & DOOR SWITCH
	4 nos 6" dia exhaust fan with thermostat & suitable canopy
	Internal illumination in Cable alleys with Door operated switch.
	CAPACITOR PANEL as described above
	FRONT OPERATED PANEL
	Design, manufacture, supplying fixing in position of the following front operated cubicle type, compartmentalised with front access, dead back, 2mm thick steel enclosed free standing, dust and vermin proof, switchboard with IP42 protection with hinged and lockable doors complete with interconnections, tinned copper crimping lugs, bonding to earth and painting, suitable for use at 415 volts, 3 phase 4 wire 50 Hertz system, and suitable for a fault level of 25 KA symmetrical at 415 volts.
i	All switchboards shall be modular type and have provision for entry of cables from the top /bottom as required.
ii	The cost shall include providing and fixing of 100 x 50 x 6 mm channels for switchboard support.
iii	All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The Busbars insulation shall be with heat shrinkable sleeves. SMC/DMC shrouds and busbar supports shall be used.
iv	All MCCB shall have phase barriers, rotary handles and extension terminal as required .
v	All unbalanced KWH meter shall have communication module for BMS connectivity
3.0	SHED PANEL
A	Incomer
	200 Amp 3 Pole 25 KA MCCB, EZC250N3200 (Schneider Make)
	Spreader (Schneider Make)
	Extended Rotary Handle (Schneider Make)
	Shunt Trip Coil (Schneider Make) 230 V
	R - Phase Indication Lamp
	Y - Phase Indication Lamp
	B - Phase Indication Lamp
	Current transformer, Class 1.0, 10 VA , 160/5A(Crompton Make)
	3 Phase digital VAF Meter (Genus Make)
	Over voltage, Under Voltage, Single phase and Phase Reversal Relay

	EXTERNAL ELECTRICAL WORKS
	Earth Leakage Relay (Schneider Make)
	MCB 3P, 6 A (Schneider Make)
C	Bus Bar:
	1 Set of 250A TPN Aluminum Bus Bar with color coded PVC Sleeves
D	Outgoing:
	1 Nos 40Amp 4P MCB, 10 KA.
	4 Nos 63Amp 4P MCB, 10 KA.
	6 Nos 63Amp 4P MCB, 10 KA. For Turbo Fan
	3 Nos 100Amp 4P MCCB, 16 KA.
	1 Nos 100Amp 4P MCCB, 16 KA. FOR SPARE
	SHED PANEL DESCRIBED AS ABOVE
4.0	ISOLATOR BOX
	100 Amp 4 Pole 25 KA MCCB, (Schneider Make)
	Spreader (Schneider Make)
	Extended Rotary Handle (Schneider Make)
	R - Phase Indication Lamp
	Y - Phase Indication Lamp
	B - Phase Indication Lamp
	Earth Leakage Relay (Schneider Make)
	MCB 3P, 6 A (Schneider Make)
	Bus Bar:
	1 Set of 125A TPN Aluminum Bus Bar with color coded PVC Sleeves
	ISOLATOR BOX DESCRIBED AS ABOVE

Payment Schedule

UNDP will follow the given payment schedule.

- I. 100% - After satisfactory completion.

Terms and Conditions:

1. Supply and Commissioning within 60 days from issuance of Purchase Order / Contract
2. The rates shall include for all costs associated with the works.
3. The supplier will be responsible for protection of materials, property and equipment before successful delivery, installation and handover to UNDP.
4. Refer ANNEX 3: FINANCIAL OFFER for detailed specifications and quantity.

Delivery Requirements

Delivery Requirements	
Delivery date and time	Bidder shall complete the works within 60 days from issuance of Contract.
Delivery Terms (INCOTERMS 2020)	DAP
Customs clearance (must be linked to INCOTERM)	Shall be done by: <input checked="" type="checkbox"/> Supplier/bidder
Exact Address(es) of Delivery Location(s)	Detailed address will be provided at the time of award of contract.
Distribution of shipping documents (if using freight forwarder)	Not Applicable
Packing Requirements	Not Applicable
Training on Operations and Maintenance	Not Applicable
Warranty Period	12 months.
After-sales service and local service support requirements	Not Applicable
Preferred Mode of Transport	Not Applicable

ANNEX 2: QUOTATION SUBMISSION FORM

Bidders are requested to complete this form, including the Company Profile and Bidder's Declaration, sign it and return it as part of their quotation along with Annex 3: Technical and Financial Offer. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Name of Bidder:		
RFQ reference:	RFQ/054/IND 2021	Date:

Company Profile

Item Description	Detail
Legal name of bidder or Lead entity for JVs	
Legal Address, City, Country	
Website	
Year of Registration	
Legal structure	
Are you a UNGM registered vendor?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, insert UNGM Vendor Number
Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? (If yes, provide a Copy of the valid Certificate):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does your Company have a written Statement of its Environmental Policy? (If yes, provide a Copy)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does your organization demonstrate significant commitment to sustainability through some other means, for example internal company policy documents on women empowerment, renewable energies or membership of trade institutions promoting such issues (If yes, provide a Copy)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Is your company a member of the UN Global Compact	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Bank Information	Bank Name: Bank Address: IBAN: SWIFT/BIC: Account Currency: Bank Account Number:			
Previous relevant experience				
Name of previous contracts	Client & Reference Contact Details including e-mail	Contract Value	Period of activity	Types of activities undertaken

Bidder's Declaration

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Requirements and Terms and Conditions: I/We have read and fully understand the RFQ, including the RFQ Information and Data, Schedule of Requirements, the General Conditions of Contract, and any Special Conditions of Contract. I/we confirm that the Bidder agrees to be bound by them.
<input type="checkbox"/>	<input type="checkbox"/>	I/We confirm that the Bidder has the necessary capacity, capability, and necessary licenses to fully meet or exceed the Requirements and will be available to deliver throughout the relevant Contract period.
<input type="checkbox"/>	<input type="checkbox"/>	Ethics: In submitting this Quote I/we warrant that the bidder: has not entered into any improper, illegal, collusive or anti-competitive arrangements with any Competitor; has not directly or indirectly approached any representative of the Buyer (other than the Point of Contact) to lobby or solicit information in relation to the RFQ ;has not attempted to influence, or provide any form of personal inducement, reward or benefit to any representative of the Buyer.
<input type="checkbox"/>	<input type="checkbox"/>	I/We confirm to undertake not to engage in proscribed practices, , or any other unethical practice, with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN and we have read the United Nations Supplier Code of Conduct : https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN.
<input type="checkbox"/>	<input type="checkbox"/>	Conflict of interest: I/We warrant that the bidder has no actual, potential, or perceived Conflict of Interest in submitting this Quote or entering a Contract to deliver the Requirements. Where a Conflict of Interest arises during the RFQ process the bidder will report it immediately to the Procuring Organisation's Point of Contact.
<input type="checkbox"/>	<input type="checkbox"/>	Prohibitions, Sanctions: I/We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/Consortium members or subcontractors or suppliers for any part of the contract is not under procurement prohibition by the United Nations, including but not limited to prohibitions derived from the Compendium of United Nations Security Council Sanctions Lists and have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization.
<input type="checkbox"/>	<input type="checkbox"/>	Bankruptcy: I/We have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against them that could impair their operations in the foreseeable future.

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Offer Validity Period: I/We confirm that this Quote, including the price, remains open for acceptance for the Offer Validity.
<input type="checkbox"/>	<input type="checkbox"/>	I/We understand and recognize that you are not bound to accept any Quotation you receive, and we certify that the goods offered in our Quotation are new and unused.
<input type="checkbox"/>	<input type="checkbox"/>	By signing this declaration, the signatory below represents, warrants and agrees that he/she has been authorised by the Organization/s to make this declaration on its/their behalf.

Signature: _____

Name:

Title:

Date:

ANNEX 3: TECHNICAL AND FINANCIAL OFFER – WORKS

Bidders are requested to complete this form, sign it and return it as part of their quotation along with Annex 2 Quotation Submission Form. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Name of Bidder:		
RFQ reference:	RFQ/054/IND 2021	Date:

Technical Offer

Provide the following:

- a brief description of your qualification and capacity that is relevant to the Scope of Works;
- a brief method statement and implementation plan;

Financial Offer

Table 1: Summary of Overall Prices

Proposed Electrical works at SDMC Swachata Kendra, Dwarka, New Delhi		
SUMMARY		
SR. NO	DESCRIPTION	AMOUNT (INR)
	INTERNAL ELECTRICAL WORK (from Table 2)	
A	POINT WIRING:-	
B	SUB-MAINS CABLE FOR DBs:-	
C	LIGHT FIXTURES AND FANS (SUPPLY ONLY):-	
D	LIGHT FIXTURES AND FANS (INSTALLATION ONLY):-	
E	DISTRIBUTION BOARDS:-	
F	SAFETY EQUIPMENTS :	
	EXTERNAL ELECTRICAL WORK (from Table 3)	
G	CABLE TRAYS & RACEWAYS:-	
H	EARTHING SYSTEM	
I	LT CABLES & TERMINATION :	
J	LT PANELS & DISTRIBUTION BOARDS	
Any other cost, if any		
TOTAL (without tax/duty)		
Duty/ Tax (Nature and amount of each tax / duty component should be clearly specified)		

TABLE 2 : INTERNAL ELECTRICAL WORK

BILL OF QUNATITIES FOR INTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
A)	POINT WIRING:-				
1	Supplying all materials, storing, handling, fixing, laying, wiring and testing for the following Light Point with 2 x 1.5 + 1 x 1.5 sq.mm FR insulated multistranded copper conductor 1100 volts grade stranded flexible wires in concealed/surface mounted PVC Conduit including cost of cutting & filling chases/ saddle, clamps, inspection/solid bends, sockets etc. and providing and fixing of 6 amps single pole modular flush mounted switch & switch plate in 1.2mm thick & 65mm deep GI box. The cost of circuit wiring with 2 x 2.5 + 1 x 1.5 Sq. mm FR insulated multistranded copper conductor 1100 Volts grade wires shall be included in the cost of point wiring. (Cost of fish wire also to be included in the item)				
1.1	Controlled by one 6A Modular Switch:				
a)	First Point	Nos.	16		
b)	Loop Point	Nos.	44		
1.2	Same as above item no. 1.1 but controlled by two (2) Nos. two way switch.				
a)	First Point	Nos.	2		
b)	Loop Point	Nos.	2		
1.3	Same as above item no. 1.1 but directly controlled from MCB in DB (Cost of MCB not be included.)				
a)	First Point	Nos.	3		
b)	Loop Point	Nos.	9		
2	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 6A, 5-pin light plug with FR insulated multistranded copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of plate, modular type switch socket (6A) and earthing complete with all accessories as required. The first point wiring shall be done with 2 x 2.5 + 1 x 1.5 Sqmm wires and looping shall be done with 2 x 1.5 + 1 x 1.5 Sq. mm wires. Only one point to be looped (light plug). (Cost of fish wire also to be included in the item)				

BILL OF QUNATITIES FOR INTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
a)	First point	Nos.	2		
b)	loop point	Nos.	4		
3	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 2 x 6A, 5-pin light plug with FR insulated multistranded copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of plate, set of 2 Nos. modular type socket (6A) controlled by 1 No. 6A switch and earthing complete with all accessories as required. The first point wiring shall be done with 2 x 2.5 + 1 x 1.5 Sq. mm wires and looping shall be done with 2 x 1.5 + 1 x 1.5 Sq. mm wires. Only one point and to be looped (UPS Fed). (Cost of fish wire also to be included in the item).				
a)	first point	Nos.	2		
b)	loop point	Nos.	2		
5	Supplying all materials, storing, handling, fixing laying, wiring and testing for exhaust fan point wiring with 2 x 1.5 + 1 x 1.5 sq.mm FR insulated copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of 6 amp modular switch and suitable plate on the existing switchboard near door and 6A, 3 pin plug to be provided near exhaust fan (cost of fish wire to be included in the item).	Nos.	8		
6	Supplying all materials, storing, handling, fixing laying, wiring and testing for ceiling fan point wiring with 2 x 1.5 + 1 x 1.5 sq.mm FR insulated copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting fixing of 6 amp single pole modular flush mounted switch & switch plate.(cost of fire wire wire to be included in the item).	Nos.	1		
7	Providing and fixing circular/ Hexagonal MS box for ceiling fan clamp, of internal dia. 140 mm, 73 mm height, top lid of 1.5 mm thick MS sheet with its top surface hacked for proper bonding, top lid shall be screwed into the GI box by means of 3.3 mm dia. round headed screws, one lock at the corners, clamp shall be made of 12 mm dia. M.S. bar bent to shape as per standard drawing.	Nos.	1		

BILL OF QUNATITIES FOR INTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
8	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Nos.	1		
9	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 16 Amp power outlet with FR insulated copper conductor wires in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of 6 pin 16 Amps shuttered modular switch socket, switch plate with internal wiring , earthing of 3rd pin. The wiring shall be done with 2 x 4.0 + 1 x 2.5 Sq.mm copper wire and looping shall be done with 2 x 2.5 + 1 x 1.5 Sq mm. (Power Socket). (cost of fire wire to be included in the item).				
a)	First Point	Nos.	3		
b)	Loop Point	Nos.	1		
10	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 20 Amp power outlet for AC with FR insulated copper conductor wires in concealed/surface mounted MS Conduit including cost of cutting and filling chases as required with fixing of 6 pin 16 Amps shuttered modular switch socket, switch plate with internal wiring , earthing of 3rd pin. The wiring shall be done with 2 x 4.0 + 1 x 2.5 Sq.mm copper wire and looping shall be done with 2 x 2.5 + 1 x 1.5 Sq.mm. (AC Socket). (cost of fire wire to be included in the item).	Nos.	1		
11	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
	Bell push	Nos.	0		
12	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Nos.	5		
13	Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	Nos.	1		
14	Supplying and fixing call bell/ buzzer suitable for single phase, 230 volts, complete as required.	Nos.	0		
15	Supply, Installation, testing and commissioning of Multisensor suitable for single phase, 230 volts, complete as required.	Nos.	0		

BILL OF QUNATITIES FOR INTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
16	Supply, Installation, testing and commissioning of USB Charging socket for single phase, 230 volts, complete as required.	Nos.	0		
17	Providing and fixing of following sizes of PVC conduit on surface/recessed including cost of cutting and filling chases as required along with all accessories etc. complete as required (cost of fish wire to be included in the item).				
b)	32mm dia. conduit	RM	20		
c)	25mm dia. conduit	RM	20		
	SUB TOTAL				
Notes:	1. All copper wires shall be of FR insulated.				
-	2. Sizes of conduit/conduit accessories will be as per the maximum nos. of wires to be drawn in the conduit as given in the technical specification/Relevant standard.				
B)	SUB-MAINS CABLE FOR DBs:-				
	Supplying, installation, testing, Termination and commissioning of XLPE armored Aluminum cable for submain of DBs suitable size 1100 volts grade as per technical specifications and drawings enclosed with this document				
a)	2 X 4 sq. mm + 1 X 2.5 sq. mm earth wire	RM			
b)	2 X 6 sq. mm + 1 X 4 sq. mm earth wire	RM	40		
c)	4 X 16 sq. mm + 2 X 10 sq. mm earth wire	RM	40		
	SUB TOTAL				
C)	LIGHT FIXTURES AND FANS (SUPPLY ONLY):-				
	Installation, testing, commissioning, receiving the lighting fixture and fan including assembling etc. of the following lighting fixtures and Fans including fixing arrangement and with all accessories as required with necessary GI pipe/steel pipe etc. as required for hanging of lighting fixtures and Fan.				
a)	18W wall mounted LED Batten light. (Make Philips, Model no. :- MASS LED TUBE 1200MM 18W 865 T8) or Equivalent to Wipro & Bajaj.	Nos.	4		
b)	12W surface mounted circular LED light. (Make Wipro, Model no. :- D641265) or Equivalent to Philips, Bajaj.	Nos.	23		
c)	8-10 W LED Mirror Light.	Nos.	2		

BILL OF QUNATITIES FOR INTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
d)	Supply of 7W LED Wall Bracket Light. Make- Philips, Model- (E27 6500K A60 ND) or Equivalent to Trilux, GE	Nos.	10		
e)	Bulk head light. (Make Philips, Model no. :-WT202W LED6S NW PSU S2 PC) or Equivalent to Trilux, GE.	Nos.	5		
f)	Led flood light - minimum 11,000 lumens & one year warranty	Nos.	12		
g)	Exit sign Light	Nos.	0		
h)	Ceiling Fan of 1200mm sweep complete erected in position with all accessories.(Make- Havel's) or Equivalent to Orient, Crompton Greaves.	Nos.	1		
i)	Exhaust Fan Heavy duty 230V A.C 50 cycles 375 mm 1400 RPM complete erected in position with all accessories.(Make- Havel's)	Nos.	8		
j)	SITC of stainless steel/ aluminum- wind driven, turbo ventilator, 600mm dia., with minimum exhaust capacity of 1927 CFM. Installation of ventilator to be done in correct alignment under supervision of engineer in charge followed by proper weather proof sealing between edges of ventilator and GI sheet.	Nos.	8		
Notes:					
1)	The type of fittings/make will be decided after interior designer selects the fittings. However, erection rate quoted shall hold good for a similar type of fittings and no extra charge will be paid on this account.				
2)					
	Above item are based on General requirement on the preliminary drawings. Quantity are approximate & may change based on revised layout.				
	SUB TOTAL				
D)	LIGHT FIXTURES AND FANS (INSTALLATION ONLY):-				
	Supply the lighting fixture and fan including assembling etc. of the following lighting fixtures and Fans including fixing arrangement and with all accessories as required with necessary GI pipe/steel pipe etc. as required for hanging of lighting fixtures and Fan.				
a)	18W wall mounted LED Batten light. (Make Philips, Model no. :- MASS LED TUBE 1200MM 18W 865 T8) or Equivalent to Wipro & Bajaj.	Nos.	4		
b)	12W surface mounted circular LED light. (Make Wipro, Model no. :- D641265) or Equivalent to Philips, Bajaj.	Nos.	23		

BILL OF QUNATITIES FOR INTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
c)	8-10 W LED Mirror Light.	Nos.	2		
d)	7W LED Wall Bracket Light. Make- Philips, Model- (E27 6500K A60 ND) or Equivalent to Trilux, GE	Nos.	10		
e)	Bulk head light. (Make Philips, Model no. :-WT202W LED6S NW PSU S2 PC) or Equivalent to Trilux, GE.	Nos.	5		
f)	Led flood light - minimum 11,000 lumens & one year warranty	Nos.	8		
g)	Exit sign Light	Nos.	0		
h)	Ceiling Fan of 1200mm sweep complete erected in position with all accessories.(Make- Havel's) or Equivalent to Orient, Crompton Greaves.	Nos.	1		
i)	Exhaust Fan Heavy duty 230V A.C 50 cycles 375 mm 1400 RPM complete erected in position with all accessories.(Make- Havel's)	Nos.	8		
Notes:					
1)	The type of fittings/make will be decided after interior designer selects the fittings. However, erection rate quoted shall hold good for a similar type of fittings and no extra charge will be paid on this account.				
2)	Above item are based on General requirement on the preliminary drawings. Quantity are approximate & may change based on revised layout.				
	SUB TOTAL				
E)	DISTRIBUTION BOARDS:-				
1	Supply, installation, testing & commissioning of following MCB double door type prewired Distribution boards as per drawing & specification fabricated out of 16 SWG CRCA sheet steel in compartmentalized design as per specification and drawings these distribution boards shall be surface/ recessed in walls. The rate includes the painting, numbering earthing etc. as required. DB shall be suitable for incoming aluminum armored cable.				
1	8 Way TPN DB (MACHINES AREA)				
	Comprising of following:				
	Incoming:				
	One (1) No. 63A FP MCB (10kA)				
	Three (3) Nos. 40A DP RCBO (100mA)				

BILL OF QUNATITIES FOR INTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
	Outgoing:				
	Eighteen (18) Nos. 6-20A SP MCB (10kA)				
	Neutral link:				
	Separate for each outgoing				
	Earthing Terminals:				
	Earthing terminals suitable for outgoing as above.	No.	2		
2	6 Way SPN DB (FOR Toilet+ Meeting Room area)				
	Comprising of following:				
	Incoming:				
	25A DP RCBO (100mA)				
	Outgoing:				
	Four (4) Nos. 6A-25A SP MCB (10kA)				
	Neutral link:				
	Separate for each outgoing				
	Earthing Terminals:				
	Earthing terminals suitable for outgoing as above.	Nos.	1		
	SUB TOTAL		3		
F)	SAFETY EQUIPMENTS :				
1.0	Providing and fixing NO SMOKING & DANGER ZONE signboards.	Nos	2		
2.0	Supply and fixing of approved shock treatment chart in position & written in English and Hindi. The chart shall be framed using wooden frame and glass.	Nos	2		
3.0	Insulating Mats				
3.1	Supply, installation, testing commissioning of Insulating Mats of size 1m x 2m x 2mm for AC rms voltage grade up to 1.1 kV with dielectric strength of C Class, fire retarded complete in all respect.	Nos	2		
	TOTAL (INTERNAL ELECTRICAL WORKS)				

TABLE 3 : EXTERNAL ELECTRICAL WORK

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
G)	CABLE TRAYS & RACEWAYS:-				
1	Cable tray				
	Providing and fixing of the following Hot dip Galvanized cable tray along with necessary coupler plates, nuts, bolts and washer with the following specifications, including cost of providing and fixing supporting steel structure hanging arrangement as mentioned below along with dash fasteners, nuts, bolts and washers etc. for suspending cable trays. (All accessories like tees, bends vertical / horizontal shall be factory fabricated and cost of these to be included in the rate. Site fabricated accessories are not acceptable).				
1.1	Perforated Type				
a)	300mm(W) x 40 mm (D)	RM	40		
b)	150mm(W) x 40 mm (D)	RM	50		
	SUB TOTAL				
H)	EARTHING SYSTEM				
1	EARTHING STATION				
	Body earthing for Bailer Machine, Extruder Machine, Agglomeration Machine, Shredder Machine, Fatka Machine, Conveyor Belt Machine.				
1.1	Supply, installation, testing and commissioning of UL listed CPRI Tested maintenance free copper coated earth rod of 3 meter having diameter of 17.2mm with 250 micron copper coating with clamp made of stainless steel or gun metal for terminating cable / flat conductor. Earth enhancing mineral (PROCEN) compound 25 kg tested for Leaching & TCLP with NABL accredited lab. The systems is conforming to IS 3043, IS / IEC 62305, IEC 61643-5-54, UL 467, the rod has to be tested to for dimension, marking, tensile strength, salt mist, coating thickness, electrical resistivity test before and after corrosion test etc. as per IEC 62561-2.	Set	10		
1.2	Supply, installation, testing and commissioning of Heavy Duty chamber with cover made on polypropylene material with tested to carry 5000 Kg with pulling hook size approx 300x300 mm	Set	4		

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
2	EARTHING STRIP/WIRES:				
	Supply & laying of hot dipped GI/pure copper earthing strip to connect to the DBS, Poles and equipment's in outdoor yard and also in indoor portion of substation.				
i	25 x 5 mm GI strip	RM	150		
ii	32 x 6 mm GI strip	RM	70		
vi	8 SWG GI wire	RM	40		
	SUB TOTAL				
I)	LT CABLES & TERMINATION :				
1.1	L.T CABLES				
	Supply, laying, testing and commissioning of 1100 Volt grade XLPE insulated extruded PVC inner and outer sheathed armored cables conforming to IS 7098 amended up to date including the cost of providing required gap between adjacent cables (minimum one cable dia.) and including the cost of providing identification tags etc. complete as per specification, as required.				
a)	3.5C x 240 sq mm Aluminum	RM	325		
b)	3.5C x 120 sq mm Aluminum	RM	25		
c)	3.5C x 70 sq mm Aluminum	RM	75		
d)	3.5C x 50 sq mm Aluminum	RM	90		
e)	3C x 10 sq mm Aluminum	RM	98		
1.2	Cable termination :				
1.2.1	Supplying, installation of all materials for terminations of 1.1 KV grade copper/aluminum multicore cables. The work includes cable glanding using brass plated , sizing the core leads, removing insulation, fixing suitable crimping type copper lugs/thimbles by using hydraulic crimping tools with correct size of the dies, shaping the leads and neatly connecting the same to the equipment terminals.				
a)	3.5C x 240 sq mm Aluminum double compression gland	Set	8		
b)	3.5C x 120 sq mm Aluminum double compression gland	Set	4		
c)	3.5C x 70 sq mm Aluminum double compression gland	Set	8		

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
d)	3C x 50 sq mm Aluminum single compression gland	Set	8		
e)	3C x 10 sq mm Cu single compression gland	Set	16		
1.3	HUME PIPE AND CHAMBER:-				
	Providing and laying HDPE pipe including testing of joints etc. complete.				
a)	300 mm dia.	RM	300		
b)	Masonry chamber 450 x 450 x 750 mm with 2nd class brick work in cement mortar 1 : 5 (1 cement : 5 fine sand) for cable laying with RCC top cover 1 : 2 : 4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation, foundation concrete (1 : 5 : 10 (1 cement : 5 fine sand : 10 graded stone agreeegate 40 mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a coat of neat cement complete with RCC cover. (300 x 300 x 50 mm). (for LV).	Nos	2		
1.4	EXCAVATION:				
	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (Not exceeding 1.5 mtr in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, depth upto 1.5mtr. including disposal of excavated earth upto 1 mtr from cutting edge, disposed earth is to be levelled and neatly dressed				
	HUME PIPE AND CHAMBER	CUM	225		
	EARTHING STRIPS AND PITS	CUM	8		
	SUB TOTAL				
J)	LT PANELS & DISTRIBUTION BOARDS				
	FRONT OPERATED PANEL				
	General Note for all Panels				
Note 1	The Panels/ Switch-boards shall be fabricated out of (load bearing member of 2mm and non load bearing member 1.6 mm thick) CRCA sheet steel, Compartmentised design, modular construction with Form 4b separation for Main Panels & 3b for remaining, Mounting Plates and Internal Partition shall be made of 1.6/2.0mm Aluzinc sheet for better heat dissipation clear space of 300mm or as approved shall be left at the bottom. The operating handle of the topmost switch				

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
	shall not be higher than 1800mm from the finished floor and maximum height of panels shall not more than 2400mm.The Panel shall be Powder coated to paint of desired shaded in an approved manner.				
Note 2	Undervoltage Relay (27)				
Note 3	Reverse power RELAY (32)				
Note 4	Inverse Definite minimum time overcurrent earth fault relay				
Note 5	Overvoltage Relay (59)				
Note 6	Buckholz protection (only transformer switch) (63)				
Note 7	Emergency stop on Main panel				
Note 8	All incomers and Bus coupler panel door should be different color coded for identification and mimic diagram in front of panel should be marks by reflector paints				
Note 9	All ACB terminals shall have vertical-vertical configuration for termination of incoming & outgoing bus links. All MCCB's up to 630A shall be provided with rear stud type terminations.				
Note 10	Space heater, Thermostat, On/Off switch, LED Lamp , Door operated switch.				
Note 11	All Multifunction meters shall communication on ethernet through ethernet ports and shall have % THD and individual harmonics till 15 order				
Note 12	ON Indication Light for all Outgoings. with backup MCB (refer SLD)				
Note 13	All MCCB should be having Thermal Magnetic based Release UP TO 250 Amp and above 250 amp With Microprocessor Release,Ics=100%Icu with Rotary Handle. Fault Level minimum 25KA				
1.0	MAIN LT PANEL				

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
1.01	Design, fabrication, assembly, wiring and supply of front operated dead front cubicle type compartmentalised as per Form 3B, rear access free standing, dust and vermin proof (IP 42 ingress protection) main switchboards suitable for use at 415 volts, 3 phase 4 wire 50 Hertz system suitable for a symmetrical fault level of 25 kA at 415 volts, fabricated from 2 mm thick CRCA MS sheets with hinged, gasketed (metal based neoprene) and lockable doors having structural reinforcement with suitable angle/channel/T/flat sections including 3 mm thick gland plates on top and bottom and including lifting hooks and including GI earth strip of required size with 2 nos earthing terminals and including powder coated paint finish of approved shade over metal surface cleaned and treated with seven tank process complete with interconnections etc. as per specifications, as required and as below.				
	(Note: The contractor may select the next higher fault rating of MCCB if it is not readily available ,without any extra cost ,as the figure indicated within the bracket are required maximum fault level of the panel).				
A	Main Incomer (from 400KVA Transformer)				
	1 Nos 630A FP MCCB 26kA With Microprocessor Based Release (O/C,S/C,E/F) Protection & all Accessories in each :				
	1 No Under Voltage Relay (27)				
	1 No Over Voltage Relay (59)				
	1 No. Breaker Control Switch				
	1 Nos Multifunction Meter Without RS-485 port				
	1 set C.T's 630/5Amp , CL 1.0, 15VA for meter				
	1 set C.T's 630/5Amp , CL 1.0, 15VA for APFCR				
	1 set Phase Indicating LED Lamps with backup MCB				
	1 set ON,OFF,TRIP indicating LED Lamps with backup MCB.				
	Control SP MCB				
	1 no emergency stop push button switch (to control whole panel)				
B	BUSBAR :-				

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
	FP aluminum bus bars of minimum 800 Amp with heat shrinkable colored sleeves , Shrouds at Joints and including DMC/SMC bus bars supports at required interval complete for cross section, side supports and their spacing				
C	OUTGOING				
	Note:				
	All MCCB should be having Thermal Magnetic based Release ,Ics=100%Icu with Rotary Handle. Fault Level minimum 25KA				
	ON,OFF,TRIP Indication Light for all Outgoings. with backup MCB				
	2 Nos. 320Amps TP+N ,MCCB with Microprocessor based adjustable with rotary handle				
	4 No. 160Amps TP+N ,MCCB with Thermal Magnetic Release adjustable with rotary handle				
	3 Nos. 100Amps TP+N ,MCCB with Thermal Magnetic Release adjustable with rotary handle				
	Miscellaneous items				
	2 nos door switch				
	2 nos illumination lights with 6 A,10kA MCB				
	ILLUMINATION LED WITH HOLDER & DOOR SWITCH				
	2 nos 6" dia. exhaust fan with thermostat & suitable canopy				
	Internal illumination in Cable alleys with Door operated switch.				
	MLTP PANEL as described above	set	1		
2.0	Capacitor Panel (160 kVAR)				
A	INCOMER				
	1 No. 320Amps TP ,MCCB with Thermal Magnetic Release adjustable with rotary handle <i>from Main Panel</i>				
	1 set of Phase Indication LED lights each backed up with 6amp. MCB				
	1 Nos Multifunction Meter Without RS-485 port				

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
	1 no- RMI-8 APFC Microprocessor based Relay intelligent type for Transformer and DG side, relay setting 0.8 to .98 power factor) for capacitor bank .built in PF meter				
	suitable contactor for above				
	3 nos CT's 320/5A class-1(15VA)				
	5 nos 6 amp SP MCB				
	1no 6 amp DP MCB				
	1 no Timer on delay (series 175) 220V AC				
	Auto / Manual selector switch (3P,2 way with OFF)				
	1 No Thermostat(30-80 degree)				
	1 No. Aux. Contactor 8NO+8NC (220V AC)				
	1 No. Aux. Contactor 4NO+4NC (220V AC)				
	3 Nos. Aux. Contactor 4NO (220V AC)				
	BUSBAR :-				
	400 Amps 3 pole aluminum conductor (CD 0.8A /sq.mm.) bus bar (PVC sleeve Heat-shrinkable busbar insulation) supported by DMC / FRP insulator (MAIN BUSBAR)				
	OUTGOING				
	8 sets of ON -OFF push buttons station red & green with ON/OFF indicating lights for each KVAR capacitor unit to indicate its position.				
	8 nos Ammeter suitable for each capacitor Bank with CT				
	Branch Protection				
	2 nos 20 amp TP 10 KA MCB for 5 KVAR				
	1 nos. 25 amp TP 10 KA MCB for 10 KVAR				
	2 nos. 40 amp TP 10 KA MCB for 20 KVAR				
	2 no. 63 amp TP 10 KA MCB for 25 KVAR				
	1 nos. 100 amp TP 25 KA MCCB for 50 KVAR				
	Capacitor Duty Contactor				

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
	2 nos. Capacitor duty contactor suitable rating for 5 kVAR Rating				
	1 nos. Capacitor duty contactor suitable rating for 10 kVAR Rating				
	2 nos. Capacitor duty contactor suitable rating for 20 kVAR Rating				
	2 no. Capacitor duty contactor suitable rating for 25 kVAR Rating				
	1 nos. Capacitor duty contactor suitable rating for 50kVAR Rating				
	Capacitor Banks				
	2 nos. 525 V, 12.5 kvar Capacitor Bank for 5 kvar				
	1 nos. 525 V, 15 kvar Capacitor Bank for 10 kvar				
	2 nos. 525 V, 25 kvar Capacitor Bank for 20 kvar				
	2 no. 525 V, 30 kvar Capacitor Bank for 25 kvar				
	1 nos. 525 V, 2x30 kvar Capacitor Bank for 50 kvar				
	Miscellaneous items				
	1nos door switch				
	1 nos illumination lights with 6 A,10kA MCB				
	ILLUMINATION LED WITH HOLDER & DOOR SWITCH				
	4 nos 6" dia exhaust fan with thermostate & suitable canopy				
	Internal illumination in Cable alleys with Door operated switch.				
	CAPACITOR PANEL as described above	Set	1		
	FRONT OPERATED PANEL				
	Design, manufacture, supplying fixing in position of the following front operated cubicle type, compartmentalised with front access, dead back, 2mm thick steel enclosed free standing, dust and vermin proof, switchboard with IP42 protection with hinged and lockable doors complete with interconnections, tinned copper crimping lugs, bonding to earth and painting, suitable for use at 415 volts, 3 phase 4 wire 50 Hertz system, and suitable for a fault level of 25 KA symmetrical at 415 volts.				

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
i	All switchboards shall be modular type and have provision for entry of cables from the top /bottom as required.				
ii	The cost shall include providing and fixing of 100 x 50 x 6 mm channels for switchboard support.				
iii	All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The Busbars insulation shall be with heat shrinkable sleeves. SMC/DMC shrouds and busbar supports shall be used.				
iv	All MCCB shall have phase barriers, rotary handles and extension terminal as required .				
v	All unbalanced kWH meter shall have communication module for BMS connectivity				
3.0	SHED PANEL				
A	Incomer				
	200 Amp 3 Pole 25 KA MCCB, EZC250N3200 (Schneider Make)	1 No.			
	Spreader (Schneider Make)	2 No.			
	Extended Rotary Handle (Schneider Make)	1 No.			
	Shunt Trip Coil (Schneider Make) 230 V	1 No.			
	R - Phase Indication Lamp	1 No.			
	Y - Phase Indication Lamp	1 No.			
	B - Phase Indication Lamp	1 No.			
	Current transformer, Class 1.0, 10 VA , 160/5A(Crompton Make)	3 No.			
	3 Phase digital VAF Meter (Genus Make)	1 No.			
	Over voltage, Under Voltage, Single phase and Phase Reversal Relay	1 No.			
	Earth Leakage Relay (Schneider Make)	1 No.			
	MCB 3P, 6 A (Schneider Make)	1 No.			
C	Bus Bar:				
	1 Set of 250A TPN Aluminum Bus Bar with colour coded PVC Sleeves				
D	Outgoing:				

BILL OF QUNATITIES FOR EXTERNAL ELECTRICAL WORKS					
S.No.	ITEM DESCRIPTION	Unit	Qty.	Rate	Amount
	1 Nos 40Amp 4P MCB, 10 KA.				
	4 Nos 63Amp 4P MCB, 10 KA.				
	6 Nos 63Amp 4P MCB, 10 KA. For Turbo Fan				
	3 Nos 100Amp 4P MCCB, 16 KA.				
	1 Nos 100Amp 4P MCCB, 16 KA. FOR SPARE				
	SHED PANEL DESCRIBED AS ABOVE	set	1		
4.0	ISOLATOR BOX				
	100 Amp 4 Pole 25 KA MCCB, (Schneider Make)				
	Spreader (Schneider Make)				
	Extended Rotary Handle (Schneider Make)				
	R - Phase Indication Lamp				
	Y - Phase Indication Lamp				
	B - Phase Indication Lamp				
	Earth Leakage Relay (Schneider Make)				
	MCB 3P, 6 A (Schneider Make)				
	Bus Bar:				
	1 Set of 125A TPN Aluminum Bus Bar with color coded PVC Sleeves				
	ISOLATOR BOX DESCRIBED AS ABOVE	set	6		
	TOTAL (EXTERNAL ELECTRICAL WORKS)				

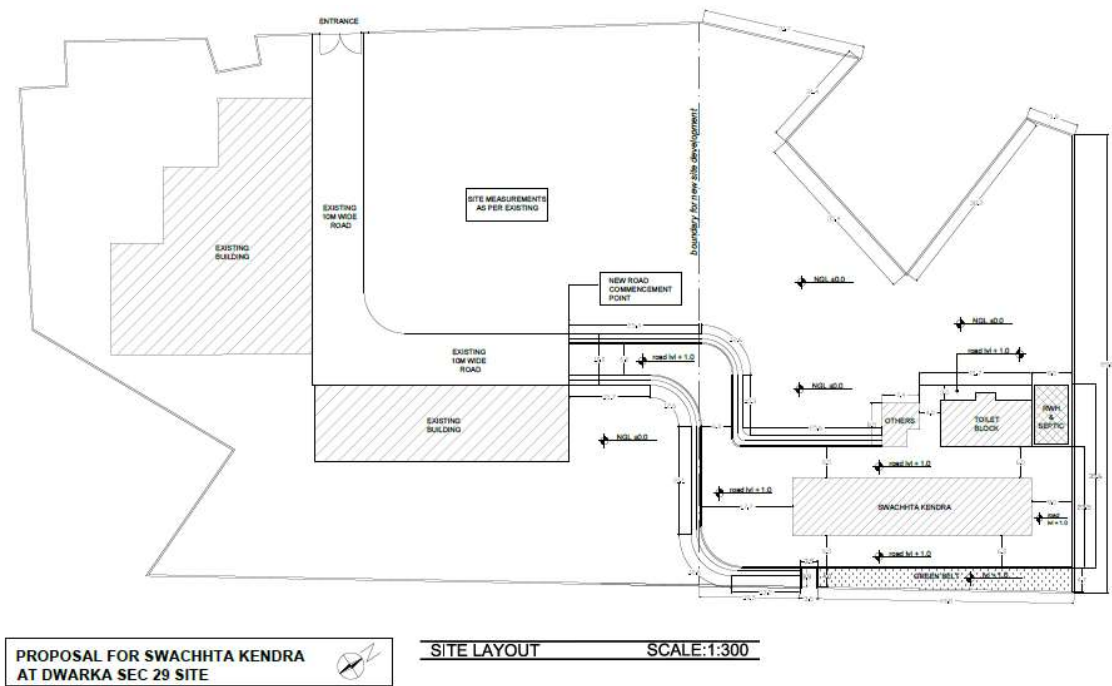
Compliance with Requirements

	You Responses		
	Yes, we will comply	No, we cannot comply	If you cannot comply, pls. indicate counter - offer
Delivery Lead Time	<input type="checkbox"/>	<input type="checkbox"/>	Click or tap here to enter text.
Validity of Quotation	<input type="checkbox"/>	<input type="checkbox"/>	Click or tap here to enter text.
Payment terms	<input type="checkbox"/>	<input type="checkbox"/>	Click or tap here to enter text.
Other requirements <i>[pls. specify]</i>	<input type="checkbox"/>	<input type="checkbox"/>	Click or tap here to enter text.

I, the undersigned, certify that I am duly authorized to sign this quotation and bind the company below in event that the quotation is accepted.	
<i>Exact name and address of company</i> Company Name Address: Phone No.: Email Address:	Authorized Signature: Date: Name: Functional Title of Authorised Signatory: Email Address:

ANNEX 4: DRAWING

Site Layout:



Machine layout- SDMC:

