



Tender Bid Document

for

Design, Supply, Installation, Commissioning, and Comprehensive Maintenance of minimum 200 kW electric charger for electric buses (CCSII type, dual gun DC charger) along with 100kWp grid connected Solar Photovoltaic (SPV) system at plot Identified by AMC at RTO in Ahmedabad, Gujarat

Title	Design, supply, installation, commissioning, and comprehensive maintenance of minimum 200 kW electric charger for electric buses (CCSII type, dual gun DC charger) along with 100 kWp grid connected Solar Photovoltaic (SPV) system at plot identified by AMC at RTO in Ahmedabad, Gujarat
Project	CapaCITIES Phase II
Location	Plot identified by AMC near RTO junction, Ahmedabad, Gujarat, India Latitude: 23° 4'5.64"N Longitude: 72°34'39.40"E
Timelines	Publishing of Bid Document on ICLEI SA /CapaCITIES websites: 21 September 2023
	Last date for acceptance of proposals: 28 September 2023
	Announcement of successful bidder: 03 October 2023
	Award of Work Order: 06 October 2023
Tender Inviting Authority	<i>ICLEI South Asia</i> C-3, Lower Ground Floor Green Park Extension New Delhi – 110016, India Tel: +91 – 11 – 4974 7200 Email: iclei-southasia@iclei.org

1. Project Background

Capacity Building for Low Carbon and Climate Resilient City Development (CapaCITIES) Phase II project, funded by the Swiss Agency for Development and Cooperation (SDC), aims to strengthen the capacities of Indian cities to plan and implement climate resilience actions, considering both climate change adaptation and mitigation measures in an integrated manner. CapaCITIES Phase I project successfully implemented in Coimbatore, Rajkot, Siliguri and Udaipur from year 2016 to 2019. In addition to support CapaCITIES Phase I cities, CapaCITIES Phase II project is supporting state government of Gujarat and Tamil Nadu, and cities of Ahmedabad, Vadodara, Tiruchirappalli, Tirunelveli for implementing climate resilience actions and mainstreaming climate actions into regular planning process.

ICLEI South Asia, the South Asian arm of ICLEI - Local Governments for Sustainability, is a city association and membership-based organisation with more than 70 member cities in the region. ICLEI South Asia, along with South Pole and econcept, is implementing the CapaCITIES Phase II project in partner cities and states.

Ahmedabad is one of the partner cities under CapaCITIES Phase II project and has been receiving technical and financial assistance for implementing quick win project, preparation of bankable and innovative finance projects and related technical assistance. Under the project, Ahmedabad city has prepared and released a 'Climate Resilient City Action Plan – Towards a Net Zero Future', which is in line with Government of India's Net Zero by 2070 commitment).

2. Summary

Ahmedabad Municipal Corporation (AMC) operates 200 electric buses of three different makes i.e., JBM, Ashok Leyland, and Tata. These electric buses are being charged during nighttime by using slow charging at bus depots. All buses are being operated on gross cost model, where contractor must operate a minimum of 200 kms per bus per day as per the contract agreement. Some electric buses are going back to the depot during the daytime (for fast charging) to enable operation of 200 kms per day depending on battery size, which is inefficient. To operate the electric buses efficiently, Ahmedabad Municipal Corporation has identified potential locations for installation of opportunity electric charging station. Electric buses may get charged in the route at these opportunity charging stations for continuous operations.

As electric buses will be charged during the daytime at these opportunity charging stations, it will be good opportunity to explore feasibility of grid connected solar PV. The Ahmedabad Municipal Corporation (AMC) has expressed an interest to deploy minimum 200 kW opportunity electric charger (CCSII type, dual gun DC charger) for electric buses along with 100 kWp grid connected Solar Photovoltaic (SPV) system at plot identified by AMC at RTO in Ahmedabad as a quick win project under CapaCITIES Phase II. This project will support AMC to operate electric buses efficiently by reducing dead travel distance and time, increased commercial operations and increased ridership.

3. Expected Outcomes and Scope of Work:

ICLEI South Asia, in coordination with the Ahmedabad Municipal Corporation (AMC), invites bids from qualified contractors for 'Design, Supply, Installation, Commissioning and Comprehensive

Maintenance of minimum 200 kW electric charger (300 Amp, CCS-II type, dual gun DC charger) along with 100 kWp grid connected Solar Photovoltaic (SPV) system' at plot identified by AMC near RTO in Ahmedabad, Gujarat.

1. The winning bidder (hereinafter referred to as the "Contractor") shall do necessary site visits and submit prefeasibility with detailed electrical and civil work design drawing and related diagrams for approvals before initiating onsite activity.
2. The contractor shall design, procure, supply, installation, commissioning, and comprehensive maintenance of minimum 200 kW electric charger (CCSII type, dual gun DC charger) as per specifications provided in Annexure III. Sanction load for electric charger will be provided by AMC, contractor has to provide necessary support onsite, if needed.
3. The contractor shall design, procure, supply, installation, commissioning, and comprehensive maintenance of 100 kWp grid connected Solar PV system with elevated structure (minimum 4.5m height) as per specifications provided in Annexure II.
4. Defect Liability Period (DLP) for minimum 200 kW electric charger (300 Amp, CCSII type, dual gun DC charger) and 100 kWp grid connected solar PV system is for 2 years, while comprehensive operation and maintenance period for the project is 3 years, post DLP.

Note: HT connection for minimum 200kW opportunity electric charger for electric buses will be provided by AMC. Electricity charges during defect liability period and O&M period shall be paid by AMC.

4. Details of Tasks:

The scope of work shall include Designing, Planning, Engineering, Procurement (Manufacturing/Supply), Foundation, Construction, Erection and Installation of Equipment, Testing, and Commissioning of minimum 200kW electric charger for electric buses (300Amp, dual gun DC charger) and 100 kWp grid connected Solar PV plant as a Turnkey Contract according to terms and conditions set out in this document.

The SPV should be designed, installed, and commissioned in conformance with IEC Standards as applicable for all the equipment including but not limited to Solar PV Modules/Panels, solar PV inverters, fuses, junction boxes, surge arresters, cables, earthing, energy meter and mounting structure; considered for the project implementation such as IEC – 61853, 61727, 61730, 61215, 60904, 62109, etc. or currently available standards which ensure the best performance. The contractor shall also be responsible for operation and maintenance of the project for a period of five (5) years.

The Turnkey contract for the SPV shall be in accordance with all applicable permits and regulations set out by the Government of India, and Government of Gujarat. The contractor shall be responsible for, but not limited to, the following scope of works:

1. Submit detailed design proposal, inclusive of all necessary and allied works for operationalizing/commissioning of the proposed EV charger for electric buses and Solar PV project that will be undertaken by the contractor, at their own cost, with clear timelines.
2. Basic project planning, sequencing, and scheduling, energy yield prediction, basic and detailed engineering, project component selection, preparing engineering and construction drawings, availing planning permissions, and all other requirements as required for commissioning and interconnecting with the EV charger and to the existing electrical distribution system.



3. The contractor must submit the project design proposal and schedule within seven (7) days from the date of award of work order. The project schedule comprising of all key milestones till Provisional Plant Acceptance shall be submitted.
4. Material supply and at site work should commence within one week of acceptance of project design proposal. The contractor shall submit the design proposal within one week of the date of issue of the work order.
5. Submission of the drawings and documents as per the deliverables listed in the project schedule and as agreed between the contractor and ICLEI South Asia for approval.
6. The Contractor can only proceed for the procurement of the major components of the solar PV plant only after prior approval from ICLEI South Asia or AMC.
7. Supply, sourcing, procurement, transportation including requisite insurance of all solar PV plant equipment.
8. The contractor to include standard fire and perils insurance specifications and quotation along with the specified technical and financial bid and will be taken forward based on the preference of ICLEI South Asia and AMC.
9. The contractor shall submit all relevant system Single Line Diagrams (SLD), drawings, SPV system performance certificates, etc. to ICLEI South Asia and AMC for review and approval.
10. The contractor shall obtain all permits and clearances from all local stakeholders, including government statutory bodies, Electrical Inspectorate etc. as required for completion and commissioning of the EV charger and grid connected Solar PV.
11. Coordination with Discom for grid connection and required power purchase agreement between AMC and Discom will be in the scope of the contractor.
12. Every work shall be supervised by the contractor deployed Supervisors and will report to the concerned person or representative of ICLEI South Asia or AMC.
13. Assembly and construction of the entire system, including the EV charger and grid connected Solar PV, all pre-construction tests if required, site management and supervision, labor provisions, testing and commissioning of all equipment in steps including commissioning and interconnection of the EV charger and Solar PV to the existing electrical distribution system.
14. Labels shall be clearly visible on various equipment, placed to remind the operator that the device should be accessed with caution as there could be an energized part that comes from the indirect renewable energy generation system.
15. All the operations not expressly included that are necessary for proper functioning of the grid connected Solar PV system and fulfilment of the rules, regulations, and applicable codes.
16. Commissioning of the solar PV plant with Provisional Acceptance Test, seven (7) days Start-Up Performance Test, and once a year in the DLP of 2 years and O&M period of 3 years.
17. Annual Maintenance Contract shall be signed for the operational and maintenance period of 5 years between Ahmedabad Janmarg Limited (AJL) and the contractor.
18. Comprehensively warranting the EV charger and entire solar PV plant against all defects through a Defect Liability Period (DLP) of 2 years which is also the part of O&M services for three (3) years post DLP, transfer all component warranties, spare parts and tools and tackles to the AMC post completing the DLP and O&M period.
19. Further to commissioning of the project; training AMC's Personnel for Operation and Maintenance, handing-over the plant to AMC, provision of all the documentation necessary for the correct performance and maintenance for the lifetime of solar PV plant.

20. There will be a Defect Liability Period for two (2) years and Comprehensive Operation and Maintenance for three (3) years for the EV charger and PV plant post the defect liability Period. During the Defect liability Period of two (2) years and O&M period of three (3) years, the Contractor shall supply all necessary equipment/spares, materials, manpower for replacement of faulty equipment at their own cost.
21. The EPC Contractor shall be the O&M Contractor for three (3) years, post the defect liability Period of two (2) years from the Date of Commissioning (CoD). The O&M Contractor shall follow the plant Health Safety and Environment (HSE) requirements and provide all the required harnesses, tools & tackles, consumables etc. at their own cost.
22. The Contractor shall make his own arrangement for material storage. The space shall be provided by the AMC. The security of materials is Contractor's responsibility. The Contractor must make suitable arrangements for its own and its sub-contractor's (if applicable) employees during construction and O&M period.
23. Contractor shall submit the list of activities and procedures that will be undertaken during the O&M period.
24. The Contractor shall remove left over construction materials and debris from site within one week of achieving CoD.
25. The Contractor shall make its own arrangements for material lifting to the project execution area.
26. The Contractor shall be responsible for the title transfer of the plant to the AMC prior to Provisional Plant Acceptance.
27. The Contractor shall depute licensed (with local distribution company) electrical contractor for performing the electrical LT/HT side works if required.
28. The bidder shall be responsible for assuring that all commodities shipped are properly packed and protected to prevent damage or deterioration during shipment. Packaging and shipping costs shall be borne by the supplier. Customs clearance and all costs and actions associated with import duties, taxes, and processing of documents within India are borne by the bidder. Transportation, loading, unloading at site is in the scope of bidder.
29. O&M activities primarily include but not limited to, servicing every month and on need bases. (panel cleaning, system checking, report generation, troubleshooting) excluding the responsibilities of the vendor during the Defect Liability Period to rectify or replace defective components and installation errors.
30. ICLEI South Asia or AMC reserves the right to terminate the work order, at any given time, in the event of contractor showing lack of attendance to the work or negligence or sub-par/unfair performance in the opinion of Engineer-In-Charge of Ahmedabad Municipal Corporation or ICLEI South Asia, irrelevant of any clause of the contract/ work order by giving suitable notice to the contractor. The security deposit shall not be returned to the contractor in such case.

5. Timelines:

- Publishing of Bid Document on ICLEI SA /CapacITIES websites: **21 September 2023**
- Last date for acceptance of proposals: **28th September 2023** (7 days after publication of tender on ICLEI SA/ CapacITIES Website)
- Date of announcement of successful bidder: **03rd October 2023** (within 3 days after last date of acceptance of proposals)



- Award of work order to successful bidder: **06th October 2023** (within 3 days after announcement of successful bidder)
- Installation of electric charger (as specified in Annexure III) and 100 kWp grid connected solar PV (as specified in Annexure II) : **06th December 2023** (with in 60 days of award of work order)
- DLP and Comprehensive operation and maintenance: 2 years of DLP and 3 years of O&M, post installation

6. Payment Schedule:

Activity	Timeline	Payment to winning bidder
1. Acceptance of work order and submission of detailed engineering design drawing and related diagrams for approvals before onsite activity 2. Submission of Bank Guarantee (1) of 10% of the total work order value on name of ICLEI South Asia for implementation period (not extended from 31 st October 2023, or else ICLEI south Asia shall forfeit the bank guarantee).	within 7 days from date of work order	30% of the total contract amount
3. Installation and commissioning of electric charger (as specified in Annexure III) and 100 kWp grid connected solar PV (as specified in Annexure II) at plot identified by AMC near RTO junction, including functional power import-export arrangement with Torrent Power Limited (DISCOM)	Within 45 days from date of work order	50% of the total contract amount
4. Submission of Bank Guarantee (2) for 5 years duration on name of 'Ahmedabad Janmarg Limited, Ahmedabad Municipal Corporation' in prescribed format (Annexure V) provided by Ahmedabad Municipal Corporation for 5 years Operation and Maintenance period	Within 60 days from date of work order	20% of the total contract amount ICLEI South Asia shall Return Bank Guarantee (1) to contractor after successful implementation of project and upon submission of Bank Guarantee (2)
Note: Ahmedabad Municipal Corporation shall return the Bank Guarantee (2) to contractor on satisfactory performance during comprehensive operation and maintenance period of 5 years. Interest will not be payable to the contractor for Bank Guarantee 1 and 2.		

7. Contact Information:

- 1) Ms. Soumya Chaturvedula,
Deputy Director,
ICLEI – Local Governments for Sustainability South Asia



C-3, Lower Ground Floor, Green Park Extension, New Delhi - 110016, India

Tel: +91 – 11 – 4974 7200; Fax: +91 - 11 - 4974 7201

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2) Mr. Ankit Makvana

Manager, Gujarat Operations

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Annexure I: Bidders Eligibility Criteria and List of Required Documents

1.1 General Conditions:

1. The contractor should be a body incorporated in India under the Companies Act, 1956 or 2013/NGO/Proprietorship/Partnership/LLP firm & shall be in operation for the last five years.
2. The participating contractor may be a single entity or a group of entities, the “Consortium”, coming together to execute the project. Hereinafter, the word ‘contractor’ used would apply to both single entity and a consortium.
3. The contractor may sub-contract part of his deliverables to another agency. In such case, prior information of the same must be provided to ICLEI South Asia at the time of bid submission. The information of such intention must be sufficed with a suitable letter of authorization from sub-contracting agency expressing their consent to work on behalf of the bidding contractor.
4. In case the contractor wishes to sub-contract part of the deliverables, the final responsibility of delivery and performance lies solely with the contractor.
5. The participating contractor should not be under declaration of ineligibility for corrupt or fraudulent practices or deficiencies of services or blacklisted with any Government/Non-Government agencies at the time of bidding.
6. In the event the contractor is a consortium, it shall, comply with the following additional requirements:
 - a. Number of members in a consortium shall not exceed 2 (Two) including the Lead Member.
 - b. The members of the consortium shall nominate one contractor as the lead contractor. Lead contractor will be responsible for comprehensive O&M throughout the terms of the contract and providing ‘Performance Security’ as mentioned in this bid document.
 - c. The lead contractor shall be authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the members respectively from time to time in the response to this Bid.
 - d. The consortium agreement should be submitted with the bid.
 - e. The agreement should be on stamp paper and duly notarized, members should be jointly and severally responsible.
 - f. The consortium should jointly fulfill Eligibility Criteria & pre-qualification criteria mentioned in the document.
 - g. The consortium agreement should clearly mention the roles and responsibilities of each company in the consortium and the percentage share of each member.
 - h. The consortium agreement should mention the lead partner in the consortium.
7. If the contractor ceases to meet the eligibility criteria or the qualification criteria set out in the tender at any time after the application due date and on or after the bid due date, then such Contractor shall be disqualified, and its Bid shall be liable for rejection.
8. ICLEI South Asia reserves the right to seek information and evidence from contractors regarding their continued eligibility and continued compliance with the Qualification Criteria at any time during the bid process. The contractor shall undertake to provide all the information and evidence sought by ICLEI South Asia and AMC.

9. ICLEI South Asia reserves the right to reject any or all bids or cancel/ withdraw the tender without assigning any reason whatsoever and in such case no contractor/ intending contractor shall have any claim arising out of such action.

Note: The contractor shall implement Solar PV and install EV charger both along with 2 years DLF and 3 years comprehensive O&M. Proposals only for installation of solar PV or EV charger will be straight away rejected.

7.2 Technical Eligibility Criteria:

1. The Contractor should have at least 7 years' experience in implementing Solar PV (RE) installation and O&M work with total installed and commissioned Solar PV project(s) of cumulative capacity at least 1 MWp as an EPC contractor or at least 3 MWp as an Installation & Commissioning (I&C) contractor, which should have been commissioned within the last 36 months prior to the Bid Submission date. In case if the contractor having experience in installing electric chargers as mentioned in section 7.2 (point 2), is the lead contractor for this project, the contractor shall produce joint venture agreement (specific to this bid document) with the contractor or agency having relevant experience in implementing solar PV (refer Annexure II). In this case, the contractor shall submit required experience certificates and supply order copy from the contractor/ agency having experience in implementing solar PV to meet eligibility criteria.
2. The Contractor shall have minimum 3 years of experience of executing or installing or supplying electric charger of minimum 400kW cumulative capacity, at least one for electric buses for 180/200kW. In case if the contractor having experience in implementing solar PV is the lead contractor for this project as mentioned in section 7.2 (point 1), the contractor shall produce joint venture agreement (specific to this bid document) with Original Equipment Manufacturer (OEM) or authorized dealer or submit authorization letter (specific to this bid document) from OEM or authorized dealer for supplying electric chargers as per technical specifications provided in Annexure III, mentioning 5 years comprehensive warranty (including parts). The authorization letter shall be addressed to ICLEI – Local Governments for Sustainability South Asia. In this case, the contractor shall submit required experience certificates and supply order copy from OEM or authorized dealer to meet the specifications along with the bid submission. If a contractor is submitting authorization letter from authorized dealer then submission of dealer certificate from OEM to authorized dealer will be must.
3. The contractor should be a registered Road and Building – Class A electrical contractor. In case of joint venture or consortium, the lead contractor should be a registered Road and Building – Class A electrical contractor.
4. The Contractor shall submit, in support to the above, the list of projects commissioned within the last 36 months along with their work order/ LOI/Commissioning certificates and the letter from Client/Employer/Owner confirming satisfactory performance of the Plant.
5. The certificates shall be in English language with mentioning the name of power plant, capacity, contract date and commissioning date of the power plant (make and model of components) supplied by the Contractor; issue date, name, and address (Telephone/Fax/e-mail) of the end user duly signed in the official letter head.

6. The contractor must visit the site along with local team of ICLEI South Asia to ensure site feasibility before bid submission to examine the site and its surroundings. A shortlisted contractor shall be deemed to have full knowledge of the site based on the inspection and no extra charges consequent on any misunderstanding. The contractor must submit the site visit certificate duly sign by ICLEI South Asia or email communication. The format of this certificate is provided in Annexure VI.

1.3 Financial Eligibility Criteria:

1. An eligible bidder should have an average annual turnover of INR 3 crore over last three years as on March 31, 2023.
2. The net worth of the contractor for the last financial year should be positive.
3. Bidder should have at least one single completed order of more than INR 1 Crore. Contractor shall submit completion certificate along with bid submission.
4. The Contractor will provide a copy of the audited annual report for each of the previous three financial years to ascertain their turnover.
5. The contractor should have GST/VAT registration and up-to-date TIN certificate and should comply to all applicable financial regulations for operating in India.

1.4 Documents to be submitted by bidders:

1. Proof of registration for lead contractor as Road and Building - Class A electrical contractor
2. The contractor shall possess a valid registration certificate for the said firm.
3. The contractor shall submit GST/VAT registration, up-to-date TIN certificate and all relevant financial & registration documents declared by relevant authorities of Government of India for organization to operate in India.
4. Completion certificate for one single completed project of solar PV installation or EV charger installation order of more than INR 1 Crore
5. The contractor must not have defaulted under any of the applicable acts like Income Tax, GST Act, PF & ESI Act, or any other Act which as per the nature of contract is required (declaration/return copies to be furnished).
6. Last 3 Financial Year's balance sheet audited by a certified Chartered Accountant.
7. Details of similar work previously carried out, mentioning beneficiary, capacity of installation, contract value, date of commencement, date of commissioning, contact details (with telephone no.) of contact person for the given contract etc. shall be provided.
8. Details of tools, tackles, machinery available with contractor.
9. Technical document with all relevant enclosures as asked (including supporting documents as mentioned in Section 7.2).
10. Details of the key technical personnel (technical personnel must include design engineer, electrical engineer, civil and structural engineer) whom the contractor shall engage for this project. Please include their resume providing name, qualification, nature of work (field or office), mode of employment, previous experience.
11. The contractor shall produce original documents for cross verification as and when requested by ICLEI South Asia.



12. Each page of all the documents mentioned above as well as technical and price bid documents shall be duly signed by the contractor.

Financial proposal for the scope mentioned above and comprising all the minimum technical components as specified in Annexures. BOQ along with the unit cost of each component should be mentioned. The financial bid shall be inclusive of all the costs including taxes associated with the project. It is clarified that, for the purposes of evaluation, the financial bid should be prepared in Indian Rupees (INR). In submitting the price bid, the Consultant shall adhere to the following requirements:

1. The price quoted shall be fixed and firm and not subject to any escalation or variation. The price should be inclusive of all transportation and installation charges including all required material to successfully complete tasks, duties & taxes, insurance and as per the format given in Annexure 1.
2. Bill of materials for the electric charger for electric buses (See Annexure III) and SPV system (See Annexure II) should be provided along with the price bid format as given in Annexure 1.
3. The contractor shall include the cost of comprehensive O&M of the electric charger and solar PV plant for 3 (three) years post defect liability period of 2 years in the financial bid.
4. ICLEI South Asia reserves the right to modify the final size and components of the opportunity electric charger and SPV system at the unit rate quoted by the contractor.
5. All or any accessories/consumables/items required for satisfactory commissioning of the work shall be deemed to be included in the contract and shall be provided by the contractor without extra charges.

Note: If contractor failed to be provided any of the above mentioned documents along with bid submission, their bids will be straight away rejected.

Contact Information for Bid Submission

1. The Bid Document shall be downloaded free of cost from the [ICLEI South Asia](#) and [CapaCITIES](#) project websites.
2. **The bid documents** consisting of both technical and financial bids, and the supporting documentation **shall be submitted by contractor through email to the below mentioned email IDs on or before 28/09/2023:**
 - a) Soumya Chaturvedula, Deputy Director, ICLEI South Asia
(Email: soumya.chaturvedula@iclei.org)
 - b) Mr. Ankit Makvana, Manager, Gujarat Operations, ICLEI South Asia
(Email: ankit.makvana@iclei.org)
3. For any queries, please write to the below mentioned email contacts for clarification **at least 3 days in prior to the last date of bid submission:**
ankit.makvana@iclei.org
soumya.chaturvedula@iclei.org
4. The bid shall be valid for a period of 60 days from the date of submission of the bid document.
5. A contractor shall submit the bid documents that satisfies every condition laid down in this notice, failing which, the bid will be liable to be rejected by ICLEI South Asia.



Instruction to Bidders

2.1 General Instructions

1. The bidder shall be deemed to have carefully examined the work and site conditions. In this regard, he/she will be given necessary information to the best of knowledge of ICLEI South Asia in consultation with AMC, but without any guarantee to it.
2. If he/she shall have any doubt as to the meaning of any portions of the scope of the work, or any other matter concerning the contract, he/she shall in good time, before submitting his tender, set forth the particulars thereof and submit them to the point of contacts, as given in this bid document, by email in order that such doubts may be clarified authoritatively before tendering. ICLEI South Asia will respond to queries until 3 days prior to the last date of bid submission. Once a tender is submitted, the matter will be decided according to the tender conditions in the absence of such authentic pre clarification.
3. The contractor/ consultant shall address all aspects of the proposed outputs and deliverables mentioned in this bid document.
4. It should be noted that the project is being implemented in areas under the jurisdiction of AMC, and hence instructions to bidders will be given by ICLEI South Asia in consultation with officials from the AMC. ICLEI South Asia will be overall in-charge of all the work that would be executed under the present scope of work.

2.2 Tender Evaluation & Bid Assessment

- 1 The bids received will be scrutinized & evaluated by ICLEI South Asia, and if required, in consultation with senior city officials from AMC involved in the execution of the project.
- 2 The bids will first be evaluated to determine responsiveness to the tender bid document. A Bid shall be considered responsive only if:
 - a) the Bid is received by the Bid Due Date, including any extension thereof,
 - b) it is signed, sealed, and marked as stipulated in bid document,
 - c) it contains the following information and documents (complete in all respects) as requested in this bid document:
 - Technical bid
 - Financial bid
 - Supporting documents
- 3 ICLEI South Asia shall evaluate and determine whether the contractors have submitted a technically responsive bid. The decision of ICLEI South Asia shall be final with respect to the selection of the qualified bidders. If required, clarification or additional documents from the contractor shall be sought.
- 4 ICLEI South Asia will inform those contractors whose proposals did not meet the minimum qualifying requirements or were considered technically non-responsive to this tender document and their Price Bids will not be opened.
- 5 Total Contract Value quoted by each qualified Bidder that has submitted a substantially responsive Financial Proposal will be tabulated and shall be checked for arithmetical errors. If there is a discrepancy between words and figures quoted as the Total Contract Value, then the amount in words shall prevail.

- 6 Based on an evaluation of the detailed system design proposals, one (1) contractor will be selected to undertake the tasks outlined in the scope of work. For seeking any further clarification/s a meeting would be called virtually or individually, if desired, in which case the contractors shall be informed accordingly.
- 7 Selection of the qualified contractor to undertake the work detailed in this tender shall be a techno-commercial decision based on price negotiation, Net Present Value (NPV), and agreed terms and conditions as per the contract.
- 8 The bid evaluation criteria would be lowest NPV costs of bidders computed at 8% discount rate at 2023 prices. The computation would be done as under:
 - Capital Cost of Electric Charger
 - Capital Cost of Solar PV
 - O&M costs for Electric Charger (to quote each year for 3 years)
 - O&M costs for solar PV (to quote each year for 3 years)
 - Minimum guaranteed generation of units after deration (kWh) for Solar PV for 5 years is expected as below. The contractor may also quote higher generation than minimum generation stated below based on efficiency of the panels and other factors.

Year	Minimum guaranteed generation (kWh/ Year)
Year 1	Minimum generation of 1,70,000 kWh/ year
Year 2 to Year 5	The contractor shall quote minimum generation considering deration (kWh)

Note: Financial bids would be open only for technically qualified bidders, fulfilling criteria as mentioned in section 1.2 of this annexure, Annexure II and Annexure III. Financial bid format is provided in Annexure IV.

2.3 Instructions for Shortlisted Bidders:

1. Based on the technical and financial bids, contractors will be shortlisted and requested to submit a system design proposal to ICLEI South Asia.
2. The shortlisted contractors shall submit system design based on site examination.
3. Shortlisted contractors are expected to study the site condition from both EPC works and O&M point of view.
4. The selected contractor shall submit a detailed project schedule, list of engineering deliverables, conceptual project layout, conceptual Single Line Diagram (SLD), and make and model of key components of project within 7 days of issue of work order.

Award of contract

- 1 Detailed Work Order will be issued to the winning contractor within 3 (three) days of announcing the winning contractor.
- 2 The winning contractor is to forward the signed and sealed work order to ICLEI at the earliest or not more than 3 (three) days of issue of work order. Hard copy of the signed contract/work order and the bid documents shall be sent to the ICLEI South Asia office address as mentioned below:



**Soumya Chaturvedula, Deputy Director, ICLEI South Asia Secretariat,
C-3, Lower Ground Floor, Green Park Extension, New Delhi - 110016, India
Tel: +91 – 11 – 4974 7200 Fax: +91 - 11 - 4974 7201**

- 3 In case the winning contractor fails to indicate his intent to undertake the said work within the stipulated time of 5 (five) days and observe the formalities as above, the work order will be cancelled, and the next contractor will be finalized by ICLEI South Asia in Consultation with senior city officials.

2.4 Bank Guarantee for Installation and Operation & Maintenance

Bank guarantee (1) for Installation

1. The contractor shall submit a Performance Security of 10% of total EPC Contract Value in the form of an irrevocable and unconditional bank guarantee (in provided format in Annexure V) issued by any scheduled Bank of India payable in favor of ICLEI South Asia and payable at New Delhi.
2. The Performance Security or the Performance Bank Guarantee shall remain valid till one (1) month post Plant Acceptance (estimated as maximum Six (6) months from the date of award of contract).
3. A Bank Guarantee shall be returned to the bidder within Thirty (30) days from the date of Plant Acceptance post commissioning of opportunity electric bus charger and solar PV and receiving a provisional plant acceptance letter from ICLEI South Asia / AMC.

Bank guarantee (2) for O&M Contract

1. Upon commissioning, prior to refund of the Performance Bank Guarantee for the EPC contract, the contractor shall submit a second bank guarantee of 10% of the total work order amount, for the total DLP and O&M period, in the form of an irrevocable and unconditional bank guarantee issued by any scheduled commercial bank payable in favor of Ahmedabad Janmarg Limited (AJL), Ahmedabad Municipal Corporation (AMC) as a Performance Bank Guarantee (in provided format in Annexure V) for the O&M Contract.
2. In case, the bidder is unable to generate minimum guaranteed units (as per section 2.2 of Annexure 1), then the bidder shall pay to AMC for the shortfall units at the rate of INR 6.50 per shortfall unit in that year. Such payments need to be made by the contractor to AMC within one month from the letter issued by AMC. In case the bidder does not pay, AMC shall have the right to recover it from the O&M Performance Bank Guarantee.
3. The Performance Security or the Performance Bank Guarantee during DLP of 2 years and O&M for 3 years, post the installation. A refund of the Performance Bank Guarantee shall be made within Thirty (30) days after completion of 2 years of DLP and 3 years of O&M period.

Terms of Contract

3.1 Contractor Obligations

In addition to obligations of the contractor specified elsewhere in other sections, the contractor shall be bounded by the following basic obligations:

1. Adherence to all the sections of this document along with all the drawings is essentially a key obligation of the contractor.
2. The contractor shall independently conduct site visit and make electric infrastructure and civil infrastructure work design drawing, suggest any technical changes as needed for successfully implementation of the project.
3. The contractor shall be responsible for required liaison with DISCOM, GEDA, AMC and other local bodies as per requirement for approvals, permits and clearances, including any application, charges/fees that may be payable.
4. Wherever standard codes are not mentioned, the latest relevant BIS, IS, NEC, IEEE and IEC codes and standard shall be followed.
5. The Project being a Turnkey Contract, the scope shall include everything as required for successful implementation, commissioning and operating the opportunity electric bus charger and solar PV plant for its lifecycle. No variation shall be entertained on this account by ICLEI South Asia or AMC.
6. The Contractor shall perform works strictly adhering to technical documents and drawings approved by ICLEI South Asia as well as requirements established by the applicable technical regulations.
7. The Contractor shall follow and perform all works in accordance to this technical document, State Solar policies and regulations, Ministry of New and Renewable Energy (MNRE) guidelines.
8. The Contractor shall strictly follow the start-up and functional requirements of the Project; this shall essentially include all the material and construction equipment supply, implementation, testing and commissioning of the relevant systems as required for successful completion of the project.
9. The contractor should have a service station in Gujarat.

The Contractor's obligations in respect of the EPC work shall include performing all works and provision of Contractor's Equipment for the Design, Engineering, Procurement, Construction, Installation, Connection, Testing, Start-up, and Commissioning of the electric charger and solar PV plant at the Site in accordance with the Laws and this document.

3.2 Penalty for delay

1. Time is the essence of the contract and as such all work shall be completed within the time stipulated in the contract/ work order.
2. If the bidder, without reasonable cause or valid reasons, commits default in completing the work within the aforesaid time limit, ICLEI South Asia or AMC shall without prejudice to any other right or remedy, be at liberty, by giving 15 days' notice in writing to the contractor to commence the work, to forfeit the balance payment depending on the status of work, and to cancel the Work Order. Detailed terms for default is mentioned below.

Terms for default:

- i. In case the repeated non-performance of the Bidder even after adequate notice where the performance is found to be unsatisfactory or violated / contravened any of the terms and conditions contained herein.
- ii. Any representation made or warranties given by the Bidder under this tender bid document is found to be false or misleading.



- iii. The Performance Security has been encashed and appropriated in accordance with clause and Bidder fails to replenish or provide fresh Performance Security within a period of 15 (fifteen) days.
- iv. The Bidder failed to make any payment to authority within the period specified in this tender bid document.
- v. The Bidder submits to the authority any statement which is false in material particulars, and which has a material effect on authority's right, obligations or interests.
- vi. The Bidder suspends or abandons the operations of the contract without the prior consent of Authority, provided that the Bidder shall be deemed not to have suspended/ abandoned operation if such suspension/ abandonment was as a result of Force Majeure Event and is only for the period such Force Majeure is continuing,
- vii. The Bidder repudiates this tender bid document or otherwise evidences an intention not to be bound by this tender bid document.
- viii. The Bidder is otherwise in Material Breach of any conditions of the contract entered into or commits a default in complying with any other provisions.
- ix. The Authority, without prejudice to any other remedy for breach of contract by written notice sent to the Bidder, may terminate the Bidder's Services in whole or in part if the Bidder fails to perform his obligation (s) under the contract.
- x. In case of major accident / loss on account of negligence on part of the Bidder the contract shall be terminated, and performance security shall stand forfeited.
- xi. In case the Bidder assigns or sub-assigns the contract without written approval of the Authority.
- xii. If the default is not cured within 15 (fifteen) days of the preliminary notice, the authority shall be entitled to encash the Performance Security with a notice to the bidder (Encashment Notice)
- xiii. Upon Termination, the Authority shall be entitled for any legal remedies for compensation as may be prescribed by law.

3.3 Extension of date of completion

On occurrences of any events causing delay as stated hereunder, the bidder shall intimate immediately in writing to ICLEI South Asia.

Force Majeure:

1. Natural phenomena, including but not limited to abnormally bad weather, unprecedented floods and draught, earthquakes & epidemics.
2. Political upheaval, strikes, lockouts, acts of any Government (domestic/foreign) including but not limited to war, properties, and quarantine embargoes.

Please note that this clause will only account if an event occurs during site surveys / construction / commissioning period.

3.5 Appliance at site

1. Neither ICLEI South Asia nor AMC undertake any responsibility for supply of any materials/ equipment/ Appliance/ tool for site analysis to the bidder.
2. All materials/ equipment/ tools brought to site by the bidder shall be the responsibility of the



bidder. AMC and ICLEI South Asia shall extend help as and when approached by the bidder to keep/store any materials/ equipment/ Appliance/ tool, however not liable for any loss, theft, or damage due to fire or other cause, the responsibility for which shall lie entirely on the bidder.

3.6 Photographs

To observe the progress of work at different stages of execution of works Contractor shall take out colored photograph at 3 stages i.e., 1) Before execution 2) During execution 3) After completion of work. Contractor shall take out at least 15 photographs of each sub works at each stage. The photographs will be of post card size same shall be submitted along with the running bill in duplicate. No extra cost shall be paid to Contractor on this account.

1.6 Site Inspection

ICLEI South Asia or its authorized representatives, reserve the right to inspect the project components, as per project schedule to ensure compliance of the quality of Components/ material as per the specification and data sheet before dispatch to site. ICLEI South Asia at its own discretion will visit the premises for inspection with prior intimation to the Contractor. It is the responsibility of the contractor to inform ICLEI South Asia at least 7 days prior to the dispatch of the project equipment/ material. All administrative expenses for ICLEI South Asia or its authorized representatives, will be borne by ICLEI South Asia for above inspections. However, all the expenses related to testing and inspection at manufacturer/ supplier premises or at project site shall be borne by the contractor only.

3.7 Liability

ICLEI South Asia or AMC may, upon written notice of default to Contractor (as mentioned in section 3.2 of Annexure 1), terminate the contract in circumstances detailed hereunder:

- If in the judgment of ICLEI South Asia or AMC, Contractor fails to complete within the time specified in the contract or within the period for which extension has been granted by ICLEI South Asia in writing in response to written request of Contractor, &/ or,
- If in the judgment of ICLEI South Asia, Contractor fails to comply with any of the provisions of this contract.

In the event ICLEI South Asia or AMC terminates the contract either in whole or in part, ICLEI South Asia reserves the right to purchase upon such terms and in such a manner as deemed appropriate work similar to those terminated and Contractor will be liable to the AMC for any additional costs for such similar work and/or for penalty for delay until such reasonable time as may be required for the final completion of work.

Rights of Authority on Termination

Upon Termination of the Contract for any reason whatsoever, Authority shall have the power and authority to:

- a) Appoint another party or Bidder that may carry of the remaining obligations of the Bidder.
- b) In the case of the Authority terminates the Contract in part the Bidder shall continue the performance of the Contract to the extent of which is not terminated.

Termination Payments



Upon termination of the Contract, the Bidder shall not be entitled for any Termination Payment from the Authority.

3.8 Authority's right to accept any proposal and to reject any proposal

Authority reserves the right to accept or reject any proposal, and to annul the bidding process and reject all proposals at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for Authority's action.

3.9 Jurisdiction of Courts

- a) **During Installation Period:** The Court at New Delhi shall have the exclusive jurisdiction to try all disputes between the parties arising out of the Contract.
- b) **During Defect Liability Period and O&M period:** The Court at Ahmedabad shall have the exclusive jurisdiction to try all disputes between the parties arising out of the Contract.

3.10 Confidentiality

All data and information received from ICLEI South Asia and AMC for the purpose of this work order are to be treated confidentially and are only to be used in connection with the execution of these Terms of Reference. The contents of written materials obtained and used in this assignment may not be disclosed to any third parties without the expressed advance written notice of ICLEI South Asia.

The documents/ report generated during the work order and submitted to ICLEI South Asia will be jointly owned by AMC, ICLEI South Asia, and Contractor and will be exclusively used for the purpose of this work order only.

3.11 Procurement

The Contractor shall be responsible for proper receipt, inspection, unloading and security of all materials in accordance with the Laws and the Contract. The procurement shall be started after approval from ICLEI South Asia and AMC.

3.12 Installation

The Contractor shall comply below mentioned criteria.

- 1) Provide complete electric design for minimum 200kW electric charger and installation of grid connected solar PV and secure approval of the same from ICLEI South Asia and AMC prior to commencing execution at site.
- 2) Provide complete civil work design drawing for heightened structure for solar PV installation along with foundation (below which buses will be parked) and secure approval of the same from ICLEI South Asia and AMC prior to commencing execution at site.
- 3) Complete all civil, mechanical, and electrical works required for the installation of electric charger and solar PV. The Contractor shall install all equipment in accordance with the applicable laws/ rules. EPC contractor shall ensure that installation works shall not cause any disturbance to the local activities.



3.13 Testing & Commissioning

The Contractor shall conduct or manage inspections and tests, prepare, and submit documentations to the ICLEI South Asia as per standard processes and procedures set forth in the Contract. The Contractor shall perform all works in accordance with the Contract and in a manner so that the works meet the associated requirements of the ICLEI South Asia/AMC, GEDA and DISCOM. The Contractor shall provide all staffs, equipment and materials required to complete the work. The Contractor shall meet all applicable safety and performance standards set out by applicable Laws and Standards. The Contractor shall maintain all As-Built Drawings on Site for review and shall provide the final set of “As-Built” drawings.

3.12 Interconnection

The Contractor’s scope of work shall start from the point of supply of all the solar system equipment and installation, equipment foundations and continue up to the point of interconnection at HT connection provided by AMC. The grid interconnection arrangement has to be such that the grid-tied SPV project shall remain operational during grid-on hours. Supply, installation, testing and commissioning of all systems, equipment, materials etc. within the range of the interconnection point shall be in the scope of the EPC Contractor.

3.13 Defects Liability

During the Defects Liability Period of two (2) years, the Contractor shall execute any work required to remedy defects in accordance with the Conditions of the Contract. The response time for remedying defects on working days shall be within maximum forty-eight (48) hours from the time of intimation. In case of holidays, the Contractor shall respond on the next working day. Above all, the Contractor must ensure guaranteed SPV plant availability and performance.

3.14 Comprehensive Operation and Maintenance

The Contractor shall take full responsibility of comprehensive O&M for three (3) years after two (2) years’ defects liability period. The Contractor shall submit a comprehensive O&M Plan consisting of opportunity electric charger for electric buses and solar PV plant operation, preventive, corrective and contingency maintenance philosophies. The Contractor shall prepare and submit all Operator’s and Owner’s training and Plant O&M Manuals.

3.15 Commissioning

The opportunity electric charger for electric buses shall be commissioned means the charger starts charging electric buses. The Plant shall be commissioned means the plant shall be supplying solar power to opportunity electric charger for electric buses as well as supply to the grid (as per Solar Policy of Gujarat) when charger is not utilised. The date on which the plant starts supplying power is called date of commissioning or commercial operation date (CoD). The DLP and O&M of the Plant shall start from the CoD.

3.16 Provisional Plant Acceptance Criteria

The Provisional Plant Acceptance Certificate shall be issued by ICLEI South Asia / AMC upon successfully:

1. Achieve all electrical, mechanical and civil work for electric charger as well as solar PV
2. Achieve mechanical completion;



3. Achieve commissioning of the total project capacity, including power purchase agreement and grid connectivity;
4. Achieve minimum guaranteed performance as mentioned in Section 2.2 of Annexure I and as quoted by bidder in Financial Bid as per Annexure IV;
5. Clearance of all punch points;
6. Submission of as-built drawings and documents (soft copy of all drawings and documents);
7. Transfer of title to the AMC;
8. Submission of a performance bank guarantee applicable for O&M period; and
9. Submission of O&M plan for AMC's approval.

3.15 Plant Acceptance and Handing Over –Taking Over

The Plant shall be accepted, and the Plant Acceptance Certificate shall be issued by the ICLEI South Asia/ AMC to the Contractor upon successful implementation of opportunity electric charger for electric buses and grid connected solar PV plant. The contractor shall maintain the opportunity electric charger for electric buses and grid connected solar PV plant during the two (2) years of Defects Liability Period and three (3) years O&M period. Once Plant Acceptance Certificate is issued, the Plant shall be handed over by the Contractor and taken over by the AMC upon successful completion of all tasks to be performed at Site on equipment supplied, installed, erected, commissioned. During handing over of complete project, the Contractor shall submit the following for considering final payment and release of BG:

1. All as- built drawings and documents as per the contract coordination procedure set out for the successful completion of the Project (two sets of hard copy and a set of soft copy in appropriate format; both pdf and editable file formats).
2. Final Engineering Documents (as-built or detail engineering, whichever is final) with detailed specification, schematic drawing, circuit drawing, cable routing plans and test results, manuals for all deliverable items, Operation, Maintenance and Safety Instruction Manual and other information about the Project.
3. Bill of materials for as-built.
4. Inventory of recommended and mandatory spares and tools and tackles.
5. Clearing dues if any to be paid by the Contractor with respect to applicable penalties, LDs etc.
6. The contractor shall submit copy of workman compensation insurance, renew it every year for 2 years DLP and 3 years operation and maintenance period. Contractor will be liable for any compensation to worker in case of any hazard or accident on site.

Annexure II: Technical Specifications for 100 KW Solar PV

Solar PV Module:

- SITC of Solar PV Power Plant: The SPV modules shall comply with the requirement of IEC 61215 and IEC61730. The relevant certificates shall be submitted by the implementing agency.
- The PV modules must be hotspot free, PID compliant, salt, mist & ammonia resistant and should withstand weather conditions for the project life cycle. Reports should be submitted from leading testing institutions like TUV, UL etc.
- The solar PV plant should comprise of solar mono / multi crystalline modules of more than 500 watts per module.
- Fill factor of the module shall not be less than 75%.
- SPV modules of similar output with + 2% tolerance in single string shall be avoided to mismatch array losses.
- The rated output of any supplied module shall not vary more than 3-5% from the average power rating
- The SPV modules have suitable encapsulation & sealing arrangements to protect the silicone cells.
- The encapsulation shall be of minimum ingress protection of IP65 for entire life cycle. The terminal block shall be of Nylon 6 material.
- Each module shall have indelible marking of name, make, model, serial number, polarity, OCV, operating voltage, Max system voltage, operating current, SCC, date & place of manufacturing, weight of module & any other important information. Photo/electrical conversion efficiency shall not be less than 16%.
- Each module shall have low iron tempered glass front for strength & superior light transmission. It shall also have tough multi layered polymer back sheet for environment protection against moisture & provide high voltage electrical insulation. Transitivity of glass shall not less than 91%.
- Module junction box shall be designed for plant life cycle for outdoor operation with ingress protection IP66.
- SPV module shall be highly reliable, lightweight & shall have service life of more than 25 years & have limited power loss of not more than 10% of nominal output at the end of 10 years and not more than 20% of nominal output at the end of 25 years
- SPV shall perform satisfactorily in relative humidity up to 100% and temperature between – 10 to +85-degree C.
- Installation of trays, supporting structure on roof shall be ensuring water proofing of the roof & such that proper replacement/maintenance place ensured. Scaffolding / ladder arrangement for material shifting to roof top of various building, erection & all civil work.
- Lightning protection of the arrays shall be included in the supplied items. New earthing grid must be connected to existing earth grid at least with 25 SQ MM Aluminum cable/more size of cable/ GI Strip at least at two points.
- The array output shall be so designed that it will occupy minimum space. The structure shall be designed to allow easy fixing / replacement of any module.
- The array JB shall be dust, vermin & waterproof IP66 & made of FRP or ABS plastic & having suitable cable entry points filled with suitable (IP66) cable glands with identification. Contractor to lay required cable in tray, tray supply, installation & required hardware shall be in contractor's scope.



- Bidder should take authorization from approved panel manufacture with mentioning this tender number in authorization.

Inverter:

- SITC of inverter for Solar PV plant: Inverter shall be capable of converting DC power to AC power using its maximum power point tracking control to export energy from solar to available grid at 415VAC, 50Hz, 3phase supply. The inverter shall be having PWM with IGBT/MOSFET technology with suitable rating for complete automatic operation including morning wakeup, isolation & synchronization.
- Inverters/PCU should comply with applicable IEC/equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683, IS16221 (Part 2), IS 16169 and IEC 60068-2(1,2,14,30) /Equivalent BIS Std.
- Power consumption should be minimum of the inverter.
- Inverter shall be fixed inside substation building / respective building, all necessary hardware, cable laying & termination, interfacing as directed by manufacturer will be in contractor's scope.
- The inverter must have DC switch, MPPT channel, graphical LCD for display basic parameters, built in data logging to monitor plant performance, integrated Modbus RS485 and TCP/IP protocol for communication.
- Inverter shall have IP55 degree of protection,
- Inverter shall have dry contacts for remote indication & disabling the system.
- Minimum protection must include over/under voltage, overcurrent, over/under frequency, over temperature.
- Inverter shall provide the 3 phases, 415+10% V, 50+3% Hz. Inverter shall be based on suitable load rating (During Engineering) with Total THD less than 3% on AC side, if at the time of design any changes required same will be approved by company before commencement. DC voltage ripple shall not be more than 3%.
- Inverter European efficiency shall not be less than 97% and maximum efficiency shall be greater than 97%. Inverter shall have an overloading capacity of minimum 10%

Wall/Floor mounted ACDB:

- SITC of ACDB: Metallic ACDB with 2.5mm CRCA steel or Non-metallic material like FRP or ABS plastic.
- AC Distribution Panel Board (DPB) shall control the AC power from inverter, and should have necessary surge arrestors, if required. There is interconnection from ACDB to mains at LT Bus bar while in grid tied mode.
- All switches and the circuit breakers, connectors should conform to IEC 60947:2019, part I, II and III/ IS 60947 part I, II and III.
- The isolators, cabling work should be undertaken as part of the project.
- All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air -insulated, cubical type suitable for operation on 1- ϕ /3- ϕ , 415 or 230 volts, 50 Hz (or voltage levels as per CEA/State regulations).
- The panels shall be designed for minimum expected ambient temperature of 50 degree Celsius, 80 percent humidity and dusty weather.



- All indoor panels will have protection of IP 54 or better, as per site conditions. All outdoor panels will have protection of IP 65 or better, as per site conditions.
- Should conform to Indian Electricity Act and CEA safety regulations (2021 or amended from time to time.)
- The inverter output shall have the necessary rated AC surge arrestors, if required and MCB/ MCCB. RCCB shall be used for successful operation of the PV system, if the inverter does not have required earth fault/residual current protection.
- All the 415 or 230 volts (or voltage levels as per CEA/State regulations) AC devices / equipment like bus support insulators, circuit breakers, SPDs, Voltage Transformers (VTs) etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions. i. Variation in supply frequency: as per CEA/State regulations. ii. Variation in supply voltage: as per CEA/State regulations
- ACDB – MCCB number of Poles and rating should have decided after field visit and engineering design. It should have extended handle, suitable power contactor, single phase preventer with O/V and U/V protection to switch off the power contactor, universal LED type indication lamp for contactor on/off status, suitable size FRLS power and control wiring, control MCB etc. It should have frame and necessary hardware to fix the ACDB on wall/floor inside substation. Terminal block shall be suitable to 25sqmm power wiring, all consumable like thimble, double compression gland with hood and termination shall be in contractor's scope.
- Contractor to provide ACBD as required with all Electrical Protection with suitable relays as required.
- For installing inverter, contractor must provide enclosure DB of outdoor type, weatherproof & rating should be of IP55.

Wall/Floor mounted DCDB:

- DC Distribution Boxes are to be provided to receive the DC output from the PV array.
- SITC of DCDB: Metallic 2.5mm CRCA steel or Non-metallic material like FRP or ABS plastic.
- DCDBs shall be dust & vermin proof compliant having IP 65 or better protection, as per site conditions.
- The bus bars are made of EC grade copper of required size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the inverter along with necessary surge arrestors. MCB shall be used for currents up to 63 Amperes, and MCCB shall be used for currents greater than 63 Amperes.
- Having suitable MCCB, terminal blocks and interconnection complete with wiring with frame and necessary hardware for fixing arrangement.
- Required cabling, cable tray, Glands & other consumables, termination shall be in contractor 'scope.

Metering:

- The RTS PV system shall consist of following energy meters:
 - i. Net meter: To record import and export units; ii. Generation meter: To keep record for total generation of the plant.
- The installation of net- meter (Bi-Directional) shall be as approved by GERC/GUVNL/Discom or applicable statutory entity, It is to be installed inside / outside building, as per statutory approvals. Contractor to ensure for testing & sealing of meter with statutory authority or as required by government norms.



Cables & Trays:

- All cables should conform to the latest edition of IEC/equivalent BIS Standards along with IEC 60227/IS 694, IEC 60502/IS 1554 standards.
- Cables should be flexible and should have good resistance to heat, cold, water, oil, abrasion etc.
- All cables are of FRLS type, copper conductor with required voltage rating.
- Supply and laying GI tray with cover as per requirement as directed by company representative.
- Cable to be laid in covered GI tray or PVC pipe.
- Necessary hardware for installation of cable tray, UV / metallic cable tie will be in contractor's scope.
- Copper/ Aluminium conductor cables of appropriate size and rating to be used in the system with temperature range of 0-to-120-degree, voltage rating 600/1000V, excellent resistance to heat, water, oil, abrasion, UV radiation, Ozone, Halogen free, low smoke, low toxicity, flame retardant, flexible, fulfils TUV specs UL 4703 or equivalent & conductor class as per IEC 60228 class 5 or equivalent.
- DC Cables with suitable male/female plugs at the end for easy connections. Sizing and specifications as per IEC 62930 or relevant standard 1Cx4mm², Cu, XLPO, FRLS, 1.5kV grade

Earthing:

- Earthing Electrode & Copper/GI Strip: minimum 2 mtr x 40 mm GI rod should be used for earthing and 25x3 mm GI Strip /25 Sq mm Aluminium cable/16 sq mm copper cable should be used for earthing of LA and 6 sq mm copper cable should use for other than LA earthing. Each earthing rod used be installed in proper earth pit.
- Supply & installation of sealed maintenance free chemical earth pits.
- Earth pit shall be connected to existing earth grid with copper conductor laid at the minimum depth of 500mm if old earthing available at site.
- Lightening arrester: ES107 type LA should be used.
- Contractor to install at least 1 arrestors at the roof top of each building in such a way that installed solar panel with building protected from lightning strike.
- Contractor must connect arrester to existing grid on roof top at minimum two locations & underground also at minimum two locations as directed by company representative.
- Connections with existing grid thru drilling as per standard practices.
- Contractor to excavate for installation of chemical earthing electrode at four corners of building or as directed by engineer in-charge & connect two electrode through underground GI strip (25x3mm) to form a two grids one grid is for lightening protection and other grid is for equipment protection.
- Installed earth pit resistance value shall be below 1 Ohm with grid and below 5 Ohm individual or approved by CEI.

SERVICES:

- Provide 2 years DLP and 3 years comprehensive O&M as mentioned in this tender bid document .
- Testing, installation & commissioning of complete package in full respect to operational stage and hand over to company post completion of 3 days performance guarantee trail run.
- Contractor to supply EV charger for e-buses, SPV modules, inverter, hardware and required other items suitable for outdoor application and all auxiliaries of solar power generation system of GEDA/CEI approved manufacturer make and recommended guidelines.
- Contractor shall be responsible for necessary statutory approval from Electrical Inspector / State Electricity Board and any other applicable statutory approvals for EV charger and solar PV system after awarding PO. Necessary required documents shall be provided.
- Contractor shall connect earthing to all supplied equipment like ACDB, DCDB, inverter, solar structure as directed by company in charge through minimum 6sqmm copper conductor PVC insulated earthing cable as per company representative direction. This includes supply of cable, thimbles & other consumable items.
- Contractor to work out the detailed BOM for execution of this project in all respect and if required contractor to visit the site. Any deficiency noticed in BOM at later stage shall be supplied by contractor without any price implication and within stipulated time.
- Inverter panel, ACDB and DCDB shall be installed inside substation building or suitable location, supply, laying, termination of cables of required size with shrouds, double compression gland, Copper thimbles, cable trays for integration of solar system will be in contractor's scope.
- Contractor to provide all design related documents to us for approval prior to commencement of procurement and execution at site.

Mounting structure:

- The supporting structure shall be made of hot dip galvanized MS/ mild aluminum angles of suitable size. The support structure design & foundation shall be designed to withstand wind speed of up to 120 kmph.
- The module shall be mounted facing south or East-west & tilted to an angle equal to the latitude where being used for optimum performance. The module alignment & tilt angle shall be calculated to provide the maximum output.
- The foundation for module mounting structure shall be preferably 1:2:4 PCC constructions or any other combination based on site requirement considering wind speed & water proofing of the building should be intact.

Others:

- **Bus Bars and Automatic Transfer Switches (ATS), accessories:** All required cabling, ATS, bus bars with enclosures for load segregation, distribution and connections for seamless operation of battery system and concerned loads connected.
- **MC 4 connectors:** IP67 (Reputed make)
- **Lightning:** Early Streamer Emission (ESE) air terminal type lightning arrester with 100 m radial coverage.



- **Miscellaneous:** Fire extinguisher, lighting system, auxiliary supply system, signages, lugs, cable ties, cable trays, thimbles, sleeves, cable identification tags, wall anchors, conduits, connectors, cable

Approved List of Manufacturer:

Items	Recommended Manufacturer / make
Roof Top Solar PV panels	Tata/Sunpower/REC/Solex
Inverter	Wattpower/Sofar/Growatt/Sungrow/ ABB/ SMA
ACDB, DCDB, JBs	Switchgear make must be L&T / ABB / Schneider / Siemens / Havells
Cables	KEI / Polycab / RRCable
Hardware, Supporting Structure, all type of items, consumables required, chemical earthing rod, lightning arrester, Copper Strip, Cable trays etc.	Standard



Annexure III: Technical Specifications for Electric Opportunity Fast Charger (Minimum 200kW, 300Amp, CCS-II Type, DC charger)

Description	1) Minimum 200kW (300Amp, CCS II Type, Dual Output/guns, DC Charger); 2) Capable to charge electric bus (JBM and Ashok Leyland Buses) in 1 to 1.15 hours; 3) Non-mandatory: Additional provision to divert total power to single gun, if required
Input Requirements	
AC Supply System	3 Phase, 5 wire AC system (3 Phases + N + PE)
Nominal Input Voltage	415 V (±10%)
Input Frequency	50Hz ± 1.5 Hz
Input Rating	380 - 415 Vac, 3-Phase, L1, L2, L3, PE, 50 / 60 Hz
Power Factor	0.99
Efficiency	≥ 96 %
Input Supply Failure back-up	Battery backup for minimum 30 Min. for the control system and billing unit. Data logs should be synchronized with CPMS during back up time in case battery drains out
Power Output	
DC Output Interface	CCS2 + CCS2
DC Output Voltage	150 - 950 Vdc
DC Output Current	300 A, peak 400 A
Protection	
Protection	Over current, Under voltage, Over voltage, Surge protection, Short circuit, Over temperature, Ground fault
User Interface	
Network Interface	Ethernet, Cellular, WLAN
Protocol	Backend system integration with OCPP 1.6
Authentication	ISO / IEC 14443 A / B RFID, Credit card reader (Optional)
Display	7 inch touch LCD panel
Supported Language	English (Additional languages available on request)
Button	Emergency button



Environmental		
Ambient Temperature Range	0 to 55°C as per 11.11.1.2 of AIS 138 Part 1 / IEC60068-2-14	
Operating Temperature	Operating from -30 °C to +40 °C, de-rating from +40 °C to +50 °C	
Storage Temperature	-40 °C to +85 °C	
Humidity	5 to 95% as per AIS 138 Part 1 section 11.2 / IEC 60068-2-30	
Ambient Pressure	86 kpa to 106 kpa as per AIS 138 Part 1 section 11.11.2.4 / IEC 60529.	
Altitude	2,000 m	
Mechanical		
Ingress Protection	IP55	
Enclosure Protection	IK10 according to IEC 62262	
Cooling	Forced air	
Dimension (W x H x D)	850 × 1800 × 680 mm	
Weight **	420 kg	400 kg
Charging Cable Length	6 m or as per site situation	
Regulation		
Certificate	IEC 61851-23, CE	
Installation		
Accessory	Cable management	
Item	Cable Management	
Manageable cable length	6 m or as per site situation	
Placement	Front sides of charger, on-site installation	
Recoiler cable length	2.6 m with paracord inside	
Internal counterweight	Depending on the weight of the charging cable	

Other Specifications

Structure should be design as per OEM design and make sure enclosure with IP 65 as per IEC 60529. All panels shall be CRCA sheets only. Enclosures should made of sheet steel (Industrial grade- Grade D or better) as per IS 513.
Sheet steel fabrication of all panels to bedone on CNC / Automatic machines. The joints should appear as seamless without gaps being visible.



Door panel should have charging Hose hook of material SS304 or AJL demand.with adequate strength & gravity to be provided to hold the hose in position to prevent it from rubbing against the ground.
Required foundation bolts and all other arrangements are in vendor scope.
IK10, As per IEC 61851-1 Section 11.11.2
Vendor to specify standby power consumption & charging losses
Provide details of test bench facility filed test, preventive test procedure to evaluate all parameters before dispatch.
Compatibility testing with all EV vehicles buses, and heavy vehicles only.
Should have at least one registered office or service center in Ahmedabad (specifically EV Business unit) to ensure lesser downtime.
Master Slave configuration should be supported for bus charging.
Verification that the vehicle is properly connected;
Protective conductor continuity checking
Energization of the system
De-energization of the system
DC supply for EV
Measuring current and voltage
Retaining / releasing coupler
Locking of the coupler
Compatibility assessment
Insulation test before charging
Protection against overvoltage, under current and surge protection.
Verification of vehicle connector voltage
Control circuit supply integrity
Short circuit test before charging
User initiated shutdown
Overload protection for parallel conductors (conditional function)



Annexure IV: Submission of Financial Bid

A. Sample format for Submission of Price Bid for Design, Supply, Installation, Commissioning, and Maintenance of minimum 200 kW electric charger for electric buses (CCSII type, dual gun DC charger) along with 100kWp grid connected Solar Photovoltaic (SPV) system at plot Identified by AMC at RTO in Ahmedabad, Gujarat

Name of the bidder			
Components	Unit Cost (INR)	Total Cost (INR)*	Remarks
Electric Charger (minimum 200kW, 300Amp, dual gun DC charger)			
Comprehensive Operation & Maintenance for 3 years post defect liability period of 2 years for Electric Charger			
Total Cost Design, Supply, Installation, Testing, Commissioning of minimum 200kW electric charger (Inclusive of O&M cost for 3 years post defect liability period)**			
Solar PV Modules			
String inverter			
Balance of System Components			
Installation & commissioning			
Approximate Net Metering Application including cost of net meter, application fees, meter testing fees, etc.			
Expenses during defect liability period (if any)			
Comprehensive Operation & Maintenance for 3 years post defect liability period for Solar PV installation			
Soft cost (if any)			
Total Tax applicable			
Total Cost Design, Supply, Installation, Testing, Commissioning of 100 kWp grid connected SPV project (Inclusive of O&M cost for 3 years post defect liability period) **			
Total Cost in Words			
Lead time for procurement of <ul style="list-style-type: none"> • Electric Charger and Solar PV modules • Inverter and Battery • BoS components 			
*Note- All the rates should be inclusive of all taxes, duties, excise, insurance etc.			
** Scope of work subject to approval by ICLEI South Asia and AMC authority.			



Financial Bid Format and NPV (B)

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
Year	Cost of Electrical Charger (INR)	O&M of electric charger (INR)	Any other O&M costs (if applicable) - to be detailed (INR)	Solar PV Capital Costs - one time cost in Year 1 (INR)	Guaranteed generation of units (kWh) - See Section 2.2 of Annexure 1	Revenue (INR) To be calculated at INR 6.5 per unit (F*6.5)	O&M of Solar PV (INR)	Total Costs (INR)
Year 1					1,70,000.00			
Year 2								
Year 3								
Year 4								
Year 5								

Excel formula to calculate NPV at 8% = NPV(8%,Column I Year 2:Column I Year 5)+Column I Year 1

Note: Apart from provided formats, the contractor shall also submit detailed BOQ description along with this financial bid. Minimum guaranteed generation of units (kWh) for year 1 should be 1,70,000. The contractor shall quote minimum generation considering deration (kWh) for year 2 to year 5 in provided format.



Annexure V: Format for Bank Guarantee

To,

WHEREAS -----(APPLICANT NAME AND COMPLETE ADDRESS) “The Contractor” has undertaken in pursuance of contract of ----- (Herein after called “The Contract”).

And Where As it has been stipulated by you in the said contract that the contractor shall furnish you with a Bank Guarantee by a recognized Bank for the sum specified there in as security for compliance with his obligations in accordance with the contract.

And Where As we the **Bank Name.....**, **having registered address at**, **and one of its branch address atAhmedabad –....., Gujarat** have agreed to give the contractor such a Bank Guarantee.

Now therefore we hereby affirm that we are the Guarantor. And responsible to you on Behalf of Contractor, up to a total Amount of **Rs. -----/- (Rupees ----- only)** Such sum being available in the types and proportions of in which the contract price is payable and we undertake to pay you up your first written demand and without of argument any sums within the Limits of **Rs. Rs. -----/- (Rupees ----- only)** as aforesaid without your need to prove of the show Grounds or reasons of your demand for the sum specified therein. We here by waive the Necessity of your demanding the said debt from the contractor before presenting with the Demand.

We further agree that no charge or addition to or other modification of the terms of the Contract of the works to be performed there under or of any of the contract documents which May be made between you and the contractor shall in any way release us from any liability Under this Guarantee and we hereby alive notice of any such charge addition of modification.

This guarantee is valid until the date (-----) After the Issuing of the Maintenance certificate or until expiry of this guarantee, -----, whichever is earlier.

The liability of the Guarantor under this Guarantee shall not exceed _____(the “Guarantee Amount”).

This Guarantee shall be valid up to _____(the “Expiry Date”).

Continue in Page 2



Notwithstanding anything to the contrary contained herein, no obligation of the Guarantor to pay any amount under this Guarantee shall arise prior to the fulfilment of the following conditions precedent:

(a) written claim/demand(s) in terms of this Guarantee of an aggregate amount less than or equal to the Guaranteed Amounts is/are made by the Beneficiary hereunder; and

(b) such written claim/demand(s) is/are delivered to the Guarantor on or before the Claim Expiry Date at theAhmedabad –3800..... (Claim Address Must at ahmedabad branch)

PLACE: AHMEDABAD

Date : 2023

Signature

Signature:

NAME: ----- NAME: -----

Signature Code: ----- Signature Code -----



Annexure VI: Format for Site Visit Certificate

I/We _____ authorized representative of _____ has visited the site for work as per Tender No/ name.: _____) at _____ on Date: _____ . We have taken measurement of existing site for said work. We have inspected and evaluated the existing site with reference to its location, plot size condition, sub-soil table, surface water table etc. We have submitted this offer after satisfying ourselves about the local conditions, local cost etc. We have quoted our rate for tender item including demolition, site clearing and dewatering. We will not claim any extra item like demolition, site clearing and dewatering.

Signature of ICLEI South Asia,
(With Stamp)

Signature of Tenderer
(With Stamp)