

Request for Proposal

For

**Selection of Concessionaire for
Implementing Smart LED Street
Lights and Centralized Control &
Monitoring System for Bathinda City**

on

ESCO (pay from savings) model

Municipal Corporation, Bathinda, Punjab

Disclaimer

The information contained in this Request for Proposal document (the “RFP”) or subsequently provided to Bidder(s), whether verbally or in documentary or any other form by or on behalf of the Municipal Corporation, Bathinda (hereinafter to be referred as “Authority-1”) or any of its employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an agreement and is neither an offer nor invitation by the Authority-1 to the prospective Bidders or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in making their financial offers (BIDs) pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by the Authority-1 in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This RFP may not be appropriate for all persons, and it is not possible for the Authority-1, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in the Bidding Documents, especially the Feasibility Report, may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations, analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Authority-1 accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

The Authority-1, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way for participation in this BID Stage.

The Authority-1 also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP. The Authority-1 may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this RFP.

The issue of this RFP does not imply that the Authority-1 is bound to select a Bidder or to appoint the Successful Bidder JV or Contractor, as the case may be, for the Project and the Authority-1 reserves the right to reject all or any of the Bidders or BIDs without assigning any reason whatsoever.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of its BID including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Authority-1 or any other costs incurred in connection with or relating to its BID. All such costs and expenses will remain with the Bidder and the Authority-1 shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the BID, regardless of the conduct or outcome of the Bidding Process.

List of Abbreviations

ABD	Area Based Development
CCMS	Centralized Controlling & Monitoring Systems
CEO	Chief Executive Officer
CFL	Compact Fluorescent Lamp
CSR	Common Schedule of Rates
DPR	Detailed Project Report
EE	Energy Efficient
EIC	Engineer In Charge
EMD	Earnest Money Deposit
ESCO	Energy Service Company
FTL	Fluorescent Tube Lights
GPRS	Global Packet Radio Service
GSM	Global System for Mobile Communication
HPSV	High Pressure Sodium Vapor
INR	Indian Rupees
JV	Joint Venture
LED	Light Emitting Diodes
MCB	Municipal Corporation Bathinda
LOA	Letter of Award
MCB	Municipal Corporation Bathinda
MH	Metal Halide
MoUD	Ministry of Urban Development
MOU	Memorandum of Understanding
M&V	Measurement & Verification
NLC	National Lighting Code
OEM	Original Equipment Manufacture
O&M	Operation and Maintenance
RFP	Request for Proposal
SCP	Smart City Proposal
SPV	Special Purpose Vehicle
THD	Total Harmonics Distortion
ULB	Urban Local Bodies
VAT	Value Added Tax

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1 Introduction

1.1 Background Information

- 1.1.1 Municipal Corporation, Bathinda (Hereinafter referred to as “Authority-1” or “MCB”) intends to appoint a Concessionaire for implementing Smart Street Light project in Bathinda on ESCO (Pay from savings) model on Public Private Partnership (PPP) basis (the “Project”) for a specified Concession Period i.e. 08 years including implementation period of 5 months (extendable by 1 Month) and remaining period for operation and maintenance and energy saving payment.

The Corporation Engineer of MCB shall conduct the bidding process till the selection of successful bidder.

- 1.1.2 The Successful Bidder (the “Concessionaire”), shall be responsible for designing, engineering, financing, procurement, construction, operation and maintenance of the Project and in accordance with the provisions of a long-term concession agreement (the “Concession Agreement”) to be entered into between the Successful Bidder and the Authority in the form provided by the Authority-1 as part of the Bidding Documents pursuant hereto.
- 1.1.3 The scope of work includes construction of the Project on the Site set forth in this document together with provision of Project Facilities as specified and in conformity with the Specifications and Standards set forth in Section 5 of this RFP.
- 1.1.4 An Agreement will be drawn up between the Authority and the Successful Bidder on PPP basis (the “Energy Saving Performance Contract (ESPC)/Concession Agreement”). The Concession Agreement sets forth the detailed terms and conditions for the Concessionaire, including the scope of the Concessionaire’s services and obligations (the “Concession”).
- 1.1.5 The statements and explanations contained in this RFP are intended to provide a better understanding to the Bidders about the subject matter of this RFP and should not be construed or interpreted as limiting in any way or manner the scope of services and obligations of the Concessionaire set forth in the Concession Agreement or the Authority-1’s rights to amend, alter, change, supplement or clarify the scope of work, the Concession to be awarded pursuant to this RFP or the terms thereof or herein contained. Consequently, any omissions, conflicts or contradictions in the Bidding Documents including this RFP are to be noted, interpreted and applied appropriately to give effect to this intent, and no claims on that account shall be entertained by the Authority-1.
- 1.1.6 The Authority-1 shall receive Bids pursuant to this RFP in accordance with the terms set forth in this RFP and other documents to be provided by the Authority-1 pursuant to this RFP, as modified, altered, amended and clarified from time to time by the Authority-1 (collectively the “Bidding Documents”), and all Bids shall be prepared and submitted in accordance with such terms on or before the date specified in Clause 1.3 for submission of Bids (the “Bid Due Date”).
- 1.1.7 A Bidder shall be considered as a Successful Bidder for the project of the Authority-1, where the Letter of Award (LoA) has been issued to them.

1.2 Brief description of Bidding Process

- 1.2.1 The Authority-1 is adopting a single stage two envelop bidding process wherein the interested parties are required to submit the Bid (collectively referred to as the “Bidding Process”) for selection of the Bidder for award of the Project. The Bid in response to the RFP is to be submitted in two parts (envelops), viz.:

- PART 1: Technical Bid - The first envelop would involve technical and financial capability for undertaking the Project based on the Technical Bid. Only those Bids that meet the Technical Qualifying Criteria, as set out in this RFP would qualify for opening of Financial Bid.
- PART 2: Financial Bid – The second envelop involves the Opening and Evaluation of Financial Bid which bidder has to submit online.

On the basis of this evaluation process, Authority-1 will issue a Letter of Award to the Successful Bidder.

- 1.2.2 In the Bid Stage, the aforesaid short-listed Applicants, including their successors, (the “Bidders”, which expression shall, unless repugnant to the context, include the Members of the Consortium) are being called upon to submit their financial offers (the “Bids”) in accordance with the terms specified in the Bidding Documents. The Bid shall be valid for a period of not less than 180 days from the date specified in Clause 1.3 for submission of bids.
- 1.2.3 A Bidder is required to deposit, along with its Bid, bid security as mentioned in the Clause 1.3 of the RFP in the form of Bank guarantee/ Demand Draft as specified in form 5 of the RFP.
- 1.2.4 During the Bid Stage, Bidders are invited to examine the Project in greater detail, and to carry out, at their cost, such studies as may be required for submitting their respective Bids for award of the Concession including implementation of the Project.
- 1.2.5 Subject to Clause 1.3, the Project will be awarded on basis with highest monetized benefit for Municipal Corporation, Bathinda. The Bidder who so ever qualified technical qualification and quoted the based on evaluation of bids on technical and financial criteria as set out in this RFP.
- 1.2.6 Further and other details of the process to be followed at the Bid Stage and the terms thereof are spelt out in this RFP. Any queries or request for additional information concerning this RFP shall be submitted by e-mail to the officer designated in Clause 1.3 below on or before the specified date. The queries mailed after the specified date shall not be considered for reply.
- 1.2.7 Interested parties may obtain the RFP document from the <https://eproc.punjab.gov.in> under department “Local Government Department”.
- 1.2.8 Further, all the parts of the Bid (PART 1: Technical Bid, PART 2: Financial Bid) must be submitted online on <https://eproc.punjab.gov.in>. Part1: Technical bid will also be submitted in hard copy (original and one copy) along with EMD and Tender Fee to:

Corporation Engineer
Municipal Commissioner, Bathinda,
City Bathinda
State : Punjab
Country : India
Telephone : +91-164-2252811/12
Electronic mail address : cmcbathinda@gmail.com

1 The bank Guarantee shall be drawn from nationalized / scheduled commercial bank.

1.3 Schedule of Bidding Process

The Authority-1 shall endeavor to adhere to the following schedule:

#	Information	Details
1.	Name of Work	Selection of Concessionaire for Implementing Smart LED Street Lights and Centralized Control & Monitoring System for Bathinda on ESCO (pay from savings) model
2.	Estimated Tender Value (Approx.)	Rs. 10 Crore
3.	RFP No. and Date	RFP no. 1 and 11 th June 2018
4.	Last date for submission of written queries for clarifications along with email for sending queries	25 th June 2018 cmcbathinda@gmail.com
5.	Date and venue of pre-bid conference	28 th June, 2018 at 11:30 hrs Conference Room, Office of Municipal Corporation Bathinda.
6.	Release of response to queries	2 nd July 2018
7.	Bid validity period	180 days from the last date (deadline) for submission of proposals.
8.	Last date (deadline) for submission of bids	05 th July 2018 at 15.00 hrs
9.	Opening of Technical bids	06 th July 2018 at 10.00 Hrs
10.	Technical Presentation by the Concessionaire	10 th July 2018 at 11.00 hrs onwards
11.	Place, Time and Date of opening of Financial proposals received in response to the RFP notice	To be intimated Later
12.	Method of selection	The method of selection of the Concessionaire shall be on basis with highest monetized benefit for Bathinda Municipal Corporation (MCB), the bidder whosoever quoted shall be declared as a successful bidder. Financial bids of only those Concessionaires would be opened whosoever qualify in the technical bid as per RFP clause 6.5.
13.	Web site for downloading RFP Earnest	https://eproc.punjabt.gov.in
14.	Money Deposit/Bid Security	Earnest Money Deposit (EMD) of amount INR 20,00,000 (Rupees Twenty Lakh only) through Bank Guarantee (Nationalized/Scheduled Commercial bank)/Demand Draft in favour of Chief Executive Officer, Bathinda Smart City Limited, Bathinda from any of the nationalized/scheduled commercial bank. EMD should be valid entire duration of bid process and 3 months thereafter. Successful bidder should extend the EMD till submission of PBG. Bank Guarantee format is provided in the Form 5.
15.	Tender Fee	Non-refundable Tender fee of amount INR 5,000 (Rupees Five Thousand only)

		payment to Commissioner, Municipal Corporation, Bathinda online on web portal.
16.	Submission of Bid	Technical Bid (Online + 2 Hard Copies (Original + one copy) and Financial Bid (Online only)
17.	Contact person	Mr. Sandeep Gupta – Nodal Officer Municipal Corporation, Bathinda Bathinda (Punjab) Mobile No. : +91-9780014145 Mail-id:cmcbathinda@gmail.com
18.	Total Concession Period	08 years including installation period of 5 months (extendable by 1 month with prescribed penalty clause) and remaining for O&M and energy savings payment.

2 Instruction to Bidders

2.1 General Terms for Bidding

- 2.1.1 No Bidder shall submit more than one Bid for the Project. A Bidder bidding individually or as a member of a Consortium shall not be entitled to submit another bid either individually or as a member of any Consortium, as the case may be.
- 2.1.2 Notwithstanding anything to the contrary contained in this RFP, the detailed terms specified in the draft Concession Agreement shall have overriding effect; provided, however, that any conditions or obligations imposed on the Bidder hereunder shall continue to have effect in addition to its obligations under the Concession Agreement.
- 2.1.3 The Bid should be furnished in the format as defined in various forms in the RFP, clearly indicating the bid amount in both figures and words, in Indian Rupees, and signed by the Bidder's authorized signatory. In the event of any difference between figures and words, the amount indicated in words shall be taken into account.
- 2.1.4 The Bidder may be a sole applicant (Single Entity) or a group of entities, restricted to maximum three entities, (hereinafter referred to as 'Consortium'), coming together to implement the Project. The term Bidder used hereinafter would therefore apply to both a Single Entity and a Consortium who have submitted the Bid. The Successful Bidder is the one selected by Authority-1 to develop this Project and who has been issued LOA by the Authority-1. The Successful Bidder would be liable for the execution of the Project in accordance with the terms of the Concession Agreement.
- 2.1.5 Any condition or qualification or any other stipulation contained in the Bid shall render the Bid liable to rejection as a non-responsive Bid.
- 2.1.6 The Bid and all communications in relation to or concerning the Bidding Documents and the Bid shall be in English language.
- 2.1.7 The documents including this RFP and all attached documents, provided by the Authority-1 are and shall remain or become the property of the Authority-1 and are transmitted to the Bidders solely for the purpose of preparation and the submission of a Bid in accordance herewith. Bidders are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their Bid. The provisions of this Clause 2.1.7 shall also apply mutatis mutandis to Bids and all other documents submitted by the Bidders, and the Authority-1 will not return to the Bidders any Bid, document or any information provided along therewith.
- 2.1.8 A Bidder shall not have a conflict of interest (the "Conflict of Interest") that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, the Authority-1 shall forfeit Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to the Authority-1 for, inter alia, the time, cost and effort of the Authority-1, including consideration of such Bidder's Bid, without prejudice to any other right or remedy that may be available to the Authority-1 hereunder or otherwise. Without limiting the generality of the above, a Bidder shall be considered to have a Conflict of Interest that affects the Bidding Process, if:
- i. the Bidder, its Member or Associate (or any constituent thereof) and any other Bidder, its Member or any Associate thereof (or any constituent thereof) have common controlling shareholders or other ownership interest; provided that this

disqualification shall not apply in cases where the direct or indirect shareholding of a Bidder, its Member or an Associate thereof (or any shareholder thereof having a shareholding of more than 20% (twenty per cent) of the paid up and subscribed share capital; of such Bidder, Member or Associate, as the case may be) in the other Bidder, its Member or Associate, is not less than 20% (Twenty per cent) of the subscribed and paid up equity share capital thereof; provided further that this disqualification shall not apply to any ownership by a bank, insurance company, pension fund or a public financial institution referred to in section 4A of the Companies Act, 1956/2013 or corresponding section of Companies Act, 2013. For the purposes of this Clause 2.1.8, indirect shareholding held through one or more intermediate persons shall be computed as follows: (aa) where any intermediary is controlled by a person through management control or otherwise, the entire shareholding held by such controlled intermediary in any other person (the “**Subject Person**”) shall be taken into account for computing the shareholding of such controlling person in the Subject Person; and (bb) subject always to sub-clause (aa) above, where a person does not exercise control over an intermediary, which has shareholding in the Subject Person, the computation of indirect shareholding of such person in the Subject Person shall be undertaken on a proportionate basis; provided, however, that no such shareholding shall be reckoned under this sub-clause (bb) if the shareholding of such person in the intermediary is less than 26% of the subscribed and paid up equity shareholding of such intermediary; or

- ii. a constituent of such Bidder is also a constituent of another Bidder; or
- iii. such Bidder, its Member or any Associate thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder, its Member or Associate, or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder, its Member or any Associate thereof; or
- iv. such Bidder has the same legal representative for purposes of this Bid as any other Bidder; or
- v. such Bidder, or any Associate thereof, has a relationship with another Bidder, or any Associate thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other’s information about, or to influence the Bid of either or each other; or
- vi. such Bidder or any Associate thereof has participated as a consultant to the Authority-1 in the preparation of any documents, design or technical specifications of the Project.
- vii. notwithstanding anything stated herein a conflict of interest situation arising at the prequalification stage will be deemed to subsist only, as between such Applicants attracting conflict of interest provisions on account of shareholdings, submit bids under this document.

Explanation:

In case a Bidder is a Consortium, then the term Bidder as used in this Clause 2.1.8, shall include each member of such Consortium. For purpose of this RFP Associate means, in relation to the Bidder/ Consortium Member, a person who controls, is controlled by, or is under the common control with such Bidder/ Consortium Member (the "Associate"). As used in this definition, the expression "Control" means, with respect to a person which is a company or corporation, the ownership, directly or indirectly of more than 50% (Fifty percent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person, by operation of law.

2.1.9 This RFP is not transferable.

2.1.10 Any award of Concession pursuant to this RFP shall be subject to the terms of Bidding Documents.

2.2 Consortium

Where the Applicant is a consortium, all the members of the Consortium shall execute a Consortium Agreement setting out clearly the roles and responsibilities of each member of the Consortium and shall submit the same with the MCB along-with their technical bid. Further the members of the Consortium shall not amend the Consortium Agreement without the prior written consent of the MCB. Additionally the consortium shall comply with the following additional requirements clearly identifying:

- i. who is the Lead Bidder;
- ii. roles and responsibilities of each consortium member;
- iii. they are jointly and severally liable provided Lead bidder is liable for entire work and consortium member is liable for their respective scope of work;
- iv. they have read and understood the RFP and agree to abide by the terms thereof to the extent they apply to their scope of work.

2.2.1 Minimum Equity requirement for Consortium

2.2.1.1 Where the Bidder is a Consortium, change in composition of the Consortium, after the award of the project, may be permitted by the Authority -1, only where:

- the substitute is at least equal, in terms of Technical Capacity or Financial Capacity, to the Consortium Member who is sought to be substituted and the modified Consortium shall continue to meet the pre-qualification and short-listing criteria for Applicants; and
- the new Member(s) expressly adopt(s) the Application already made on behalf of the Consortium as if it were a party to it originally

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- 2.2.2 Approval for change in the composition of a Consortium, after the award of the project, shall be at the sole discretion of the Authority-1 and must be approved by the Authority-1 in writing.
- 2.2.3 The modified/ reconstituted Consortium shall submit a revised Joint Bidding Agreement and a Power of Attorney and other documents, substantially as provided under Form 2 in this RFP, prior to the Bid Due Date.

2.3 Cost of Bidding

The Bidders shall be responsible for all of the costs associated with the preparation of their Bids and their participation in the Bidding Process. The Authority-1 will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

2.4 Site visit and verification of information

- a) Bidders are encouraged to submit their respective Bids after doing a thorough survey of project site and ascertaining for themselves the site conditions, traffic, location, surroundings, climate, availability of power, water and other utilities for construction, access to site, handling and storage of materials, weather data, applicable laws and regulations, and any other matter considered relevant by them.
- b) It shall be deemed that by submitting a Bid, the Bidder has:
- made a complete and careful examination of the Bidding Documents;
 - received all relevant information requested from the Authority-1;
 - accepted the risk of inadequacy, error or mistake in the information provided in the Bidding Documents or furnished by or on behalf of the Authority-1 relating to any of the matters;
 - satisfied itself about all matters, things and information including matters hereinabove necessary and required for submitting an informed Bid, execution of the Project in accordance with the Bidding Documents and performance of all of its obligations thereunder;
 - acknowledged and agreed that inadequacy, lack of completeness or incorrectness of information provided in the Bidding Documents or ignorance of any of the matters referred to in Clause 2.5.1 hereinabove shall not be a basis for any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc. from the Authority, or a ground for termination of the Concession Agreement by the Concessionaire
 - acknowledged that it does not have a Conflict of Interest; and
 - agreed to be bound by the undertakings provided by it under and in terms hereof.
- 2.4.1 The Authority-1 shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to RFP, the Bidding Documents or the Bidding Process, including any error or mistake therein or in

any information or data given by the Authority-1.

2.5 Verification and Disqualification

- 2.5.1 The Authority-1 reserves the right to verify all statements, information and documents submitted by the Bidder in response to the RFP or the Bidding Documents and the Bidder shall, when so required by the Authority-1, make available all such information, evidence and documents as may be necessary for such verification. Any such verification, or lack of such verification, by the Authority-1 shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of the Authority-1 thereunder.
- 2.5.2 The Authority-1 reserves the right to reject any Bid and appropriate the Bid Security if:
- a) at any time, a material misrepresentation is made or uncovered, or
 - b) the Bidder does not provide, within the time specified by the Authority-1, the supplemental information sought by the Authority-1 for evaluation of the Bid.
 - c) Such misrepresentation/ improper response shall lead to the disqualification of the Bidder. If the Bidder is a Consortium, then the entire Consortium and each Member may be disqualified/ rejected. If such disqualification / rejection occurs after the Bids have been opened and the basis with highest monetized benefit for Municipal Corporation, Bathinda Bidder gets disqualified / rejected, then the Authority-1 reserves the right to:
 - i. take any such measure as may be deemed fit in the sole discretion of the Authority-1, including annulment of the Bidding Process subject to provisions of Section 3 of this RFP.
- 2.5.3 In case it is found during the evaluation or at any time before signing of the Concession Agreement or after its execution and during the period of subsistence thereof, including the Concession thereby granted by the Authority-1, that one or more of the pre-qualification conditions have not been met by the Bidder, or the Bidder has made material misrepresentation or has given any materially incorrect or false information, the Bidder shall be disqualified forthwith if not yet appointed as the Concessionaire either by issue of the LOA or entering into of the Concession Agreement, and if the Successful Bidder has already been issued the LOA or has entered into the Concession Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this RFP, be liable to be terminated, by a communication in writing by the Authority-1 to the Successful Bidder or the Concessionaire, as the case may be, without the Authority-1 being liable in any manner whatsoever to the Successful Bidder or Concessionaire. In such an event, the Authority-1 shall be entitled to forfeit and appropriate the Bid Security or Performance Security, as the case may be, as Damages, without prejudice to any other right or remedy that may be available to the Authority-1 or Authority under the Bidding Documents and/or the Concession Agreement, or otherwise.

2.6 Contents of RFP

This RFP comprises the Disclaimer set forth hereinabove, the contents as listed below, and will additionally include any Addenda issued in accordance with Clause 2.8.

Section1	Introduction
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Section 2	Instructions to Bidders
Section 3	Eligibility Criteria & Technical Evaluation
Section 4	Scope of Work for the Concessionaire
Section 5	Technical Specification
Section 6	Evaluation of Bids
Section 7	Fraud and Corrupt Practices
Section 8	Pre-Bid Conference
Section 9	Payment Terms
Section 10	Miscellaneous
Section 11	Exit Management
Section 12	Annexures

2.6.1 The conditions of this RFP and subsequent amendments, if any, shall be considered as a part of the Concession Agreement provided by the Authority -1.

2.7 Clarifications

- 2.7.1 Bidders requiring any clarification on the RFP may notify the Authority-1 in writing or by fax and e-mail in accordance with Clause 1.3. They should send in their queries on or before the date mentioned in the Clause 1.3. The Authority-1 shall endeavor to respond to the queries within the period specified therein, but no later than 7 (days) days prior to the Bid Due Date. The responses will be uploaded on Authority's website without identifying the sources of the queries and will not be mailed individually.
- 2.7.2 The Authority-1 shall endeavor to respond to the questions raised or clarifications sought by the Bidders. However, the Authority-1 reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this Clause shall be taken or read as compelling or requiring the Authority-1 to respond to any question or to provide any clarification.
- 2.7.3 The Authority-1 may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Bidders. All clarifications and interpretations issued by the Authority-1 shall be deemed to be part of the Bidding Documents. Verbal clarifications and information given by Authority-1 or its employees or representatives shall not in any way or manner be binding on the Authority-1.

2.8 Amendment of RFP

- 2.8.1 At any time prior to the Bid Due Date, the Authority-1 may, for any reason, whether at its own initiative or in response to clarifications requested by a Bidder, modify the RFP by the issuance of Addenda/Corrigendum.
- 2.8.2 Any Addendum/ Corrigendum issued hereunder will be in writing and shall be uploaded on the <https://eproc.punjab.gov.in>.
- 2.8.3 In order to afford the Bidders a reasonable time for taking an Addendum/ Corrigendum into account, or for any other reason, the Authority-1 may, in its sole discretion, extend the Bid Due Date.

2.9 Format and Signing of Bid

- 2.9.1 The Bidder would provide all the information as per this RFP. Authority-1/MCB reserves the right to evaluate only those Bids that are received in the required format and within stipulated time, complete in all respects and in line with the instructions contained in this RFP.
- 2.9.2 The Bid and its copy shall be typed or written in indelible ink and signed by the authorized signatory of the Bidder who shall also initial each page, in blue ink. In case of printed and published documents, only the cover shall be initialed. All the alterations, omissions, additions or any other amendments made to the Bid shall be initialed by the person(s) signing the Bid.
- 2.9.3 The Bidders will submit their Bids online:
- i. The online submission shall be according to e-procurement guidelines issued by Government of Punjab as provided on e-procurement website.
 - ii. Bidders can prepare and edit their offers number of times before final submission. Once finally submitted, Bidder cannot edit their offers submitted in any case. No written or online request in this regards shall be granted/entertained.

- iii. Bidder shall submit their offer i.e. Pre-qualification, Technical Bid as well as Financial Bid in electronic format on the website as mentioned in the RFP.
 - iv. Bid should be duly signed by the person who holds the power of attorney for this particular bid.
 - v. Financial Bid shall be submitted in the same format as provided in sample format in Annexure II of the RFP.
 - vi. In addition, the Applicant shall submit 02(two) hard copies (One original + one copy) of uploaded Technical Bid Documents, which shall be marked as "Technical Bid" in envelope only. In the event of any discrepancy between the online uploaded and the hard copy (original and copy), the online documents shall prevail.
 - vii. The Original Bid Security shall be submitted along with the Hard Copy of the Technical Bid. Any bid without EMD would be disqualified.
 - viii. The pages and volumes of each part of the Bid shall be clearly numbered and stamped and the contents of the Bid shall be duly indexed.
- 2.9.4 The Bid shall be typed or printed. The Bid shall be signed (digitally as well as physically as the case may be) and each page of the Bid shall be initialed by a person or persons duly authorized to sign on behalf of the Bidder and holding the Power of Attorney.
- 2.9.5 The Bid shall contain no alterations or additions, except those to comply with instructions issued by Authority-1 or as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.
- 2.9.6 Each of the envelopes shall indicate the complete name, address, telephone number and facsimile number of the Bidder.

2.10 Bid Due Date and Time

- 2.10.1 Bids should be submitted on or before the Bid Due Date at the address provided in Clause 1.3 in the manner and form as detailed in this RFP.
- 2.10.2 Authority-1 may, at its sole discretion, extend the Bid Due Date by issuing an addendum for all Bidders.

2.11 Modifications / Substitution / Withdrawal of Bids

- 2.11.1 The Bidder may modify, substitute or withdraw its Bid multiple times before final online submission of Bid.

2.12 Late Bids

- 2.12.1 The eProcurement website will be closed for bid submission post the bid submission date and time.

2.13 Rejection of Bids

- 2.13.1 Notwithstanding anything contained in this RFP, the Authority-1 reserves the right to reject any Bid and to annul the bidding process and reject all bids at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any

reasons therefor. In the event that the Authority-1 rejects or annuls all the bids, it may, in its discretion, invite all eligible Bidders to submit fresh Bids hereunder.

2.13.2 The Authority-1 reserves the right not to proceed with the Bidding Process at any time, without notice or liability, and to reject any Bid without assigning any reasons.

2.14 Validity of Bids

2.14.1 The Bids shall be valid for a period of not less than 180 (one hundred and eighty) days from the Bid Due Date. The validity of Bids may be extended by mutual consent of the respective Bidders and the Authority-1.

2.15 Confidentiality

2.15.1 Information relating to the examination, clarification, evaluation and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising the Authority-1 in relation to, or matters arising out of, or concerning the Bidding Process. The Authority-1 will treat all information, submitted as part of the Bid, in confidence and will require all those who have access to such material to treat the same in confidence. The Authority-1 may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/ or the Authority-1 or as may be required by law or in connection with any legal process.

2.16 Correspondence with the Bidder

2.16.1 Except as provided in this RFP, the Authority-1 shall not entertain any correspondence with any Bidder in relation to acceptance or rejection of any Bid.

2.17 Bid Security

2.17.1 Bids need to be accompanied by a Bid Security mentioned in the Clause 1.3. The Bid Security shall be kept valid for 180 days from the date of submission of Bid and may be extended as may be mutually agreed between the Authority-1 and the Bidder from time to time.

2.17.2 The Bid Security shall be in the following form:

- An irrevocable Bank Guarantee issued by a Bank in favour of the Authority-1, as per the format set out in Form 5. Bank Guarantee issued by any Scheduled/ Nationalized Bank will be accepted, provided that the bank has branch in Bathinda City.
- The scanned copy of the Bid Security shall be uploaded in the portal and the original of the Bid Security as per the Form 5 shall be submitted in a separate envelope before the Technical Bid Opening.

2.17.3 Authority-1 shall reject the Bid, which does not include the Bid Security.

2.17.4 The entire Bid Security shall be forfeited in the following cases:

- i. If the Bidder withdraws any of its Bid within the Bid Validity Period;
- ii. In case of a successful Bidder, if the Bidder fails:

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- a) to furnish acceptance of the LoA within 15 days from the issue or
 - b) to furnish Performance Security within 30 working days from the date of issue of LoA or
 - c) to sign the Concession Agreement within 30 working days from the date of issue of LoA or
 - d) if the Bidder is found to be involved in fraudulent practices.
- iii. As per the provisions of the Concession Agreement

2.18 Arbitration

2.18.1 In case the dispute is not resolved amicably, the matter shall be settled by the arbitrator under the Arbitration and Conciliation Act, 1996 including any amendments thereto and its decision would be final and binding on both the parties.

2.18.2 The place of arbitration shall be Bathinda, Punjab.

3 Eligibility Criteria & Technical Evaluation

3.1 Minimum Eligibility Criteria

The Bidders must read carefully the minimum conditions of eligibility provided herein. Bids of only those Bidders will be considered for price bid opening who satisfy the conditions of eligibility.

To be eligible for evaluation of its bid, the Bidder shall fulfill the following minimum eligibility criteria:

- 3.1.1 The Bidder must submit the Bank Guarantee/ Demand Draft EMD in the name of **“Commissioner, Municipal Corporation, Bathinda”** payable at Bathinda, failing which the tender will be rejected.
- 3.1.2 Bidder must be an experienced Contractor/ ESCO or an Original Equipment Manufacturer (OEM) fulfilling the following criteria:
 - 3.1.2.1 **For experienced Contractor/ ESCO:** It must have previously executed and commissioned **similar** projects on energy efficient street lighting (at least 10,000 LED Luminaire) in single work order and agreement during last 7 years in any city, nationally or internationally with any government, semi-government organization & It must have been engaged in operation & maintenance of street lights (at least 10,000 Luminaires) during last 7 years, through a single work order, in any city, nationally or internationally or with any government or semi-government organizations

AND

For experienced Contractor/ ESCO: If the bidder is not a manufacturer of LED luminaires, then in addition to above mentioned eligibility criteria, bidder should also submit an authorization Letter as per **“Annexure-IX: Format of Authorization Letter from Manufacturers”** issued by the manufacturers (whose Luminaires will be installed in the project) confirming, backup guarantee for the contract period, with full replacement and repairing support. Also this manufacturer must have the sale of minimum 5,000 LED Street light Luminaires in single work order during last 7 years in any city, nationally or internationally with any government or semi-government organizations.

OR

- 3.1.2.2 **For OEM:** If the bidder is an OEM, then a sale of minimum 20,000 LED Luminaires in multiple work order, having one work order of at least 10,000 LED street lights Luminaires, during last 7 years in any city, nationally or internationally with any government or semi-government organizations & It must have been engaged in operation & maintenance of street lights (at least 10,000 Luminaires) during last 7 years, through a single work order, in any city, nationally or internationally or with any government or semi-government organizations. In case OEM does not have any experience in operation & maintenance of street lighting, then JV/ Consortium is allowed to meet the eligibility criteria.
- 3.1.2.3 To meet the eligibility criteria mentioned in 3.1.2.1 and 3.1.2.2, Joint Venture (maximum of 3 parties) is allowed. In case of JV/ Consortium arrangement, the Bidder has to submit the signed duly notarized MOU on Rs. 100 (Rs. One hundred only) Stamp Paper along with the Technical Bid. The format of MoU is provided in Annexure V.

Note:

Bidders are allowed to submit experience in terms of technical qualification of their holding company and/or subsidiary company only. However, the parent/ subsidiary company of the Bidder should on its own meet the technical experience as stipulated in this RFP and should not rely for meeting the technical experience criteria on its sister subsidiary/ co-subsidiary company or through any other arrangement like Technical Collaboration agreement. For the purpose of this clause,

a. a 'holding company', in relation to one or more other companies, means a company of which such companies are subsidiary companies; and

b. a 'subsidiary company' in relation to any other company (that is to say the holding company), means a company in which the holding company— (a) controls the composition of the Board of Directors; or (b) exercises or controls more than one-half of the total share capital at its own

c. Bidder should provide the details of the company whose experience they are quoting as per Annexure I Form 14 and 15. In case of JV/ Consortium arrangement, the Bidder has to submit the signed duly notarized MOU on Rs. 100 (Rs. One hundred only) Stamp Paper along with the Technical Bid. The format of MoU is provided in Annexure V. Post award of the project, the Successful Bidder should submit the consortium agreement based on the MOU submitted in the bid and that will be the part of Concession Agreement.

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- 3.1.3 The Bidder shall use retrofits that provide a **minimum guaranteed savings of 60%**.
- 3.1.4 The experience of Principle Bidder and all the members of JV must be supported through work order and work status or completion certificate, if the work has been completed, issued by the relevant approving authority. The Authority may ask for the confirmation of the commitment from the Bidder or may check the authenticity of the submitted documents.
- 3.1.5 The principle Bidder must have positive net worth and average minimum turnover of Rs. 15 crores during last three financial years. The enhancement factor of 10% will be considered for calculation of turnover. The Bidder must submit the Turnover Certificate(s) and net worth certificate certified by statutory auditor(s) including unconsolidated balance sheet in support of certificate.
- 3.1.6 The principle Bidder must submit the fresh (not older than one year as on last date of online submission of the tender) Solvency Certificate of Rs. 10 crores.
- 3.1.7 The principle Bidder of JV must submit a copy of valid Provident Fund Registration.
- 3.1.8 The Principle Bidder and all the members of JV must submit the copy PAN registration.
- 3.1.9 The Principle Bidder and all the members of JV must submit a declaration that they are not Black-listed by any Govt. or Semi Govt. departments.
- 3.1.10 The principle Bidder and all the members of JV must submit the copy of the valid VAT registration (exempted for O&M contractor).
- 3.1.11 The principle Bidder and all the members of JV must submit the copies of IT Returns of last three financial years.
- 3.1.12 The principle Bidder and all the members of JV must submit the copy of valid Service Tax registration (exempted for original equipment manufacturer).
- 3.1.13 The Bidders must submit the copy of Memorandum of Association or Partnership Deed, as the case may be.
- 3.1.14 Acceptance of the tenders will rest with MCB, who does not bind himself to accept the lowest tender and reserves the right to reject any or all tenders without assigning any reason thereof.
- 3.1.15 All the documentary proofs or their copies must be self-certified except the net worth and turnover certificates.
- 3.1.16 E-tender duly completed in all respect shall be submitted online and Two set (Print out) (Original and one copy) of tender documents including addendum, if any and other documents as required in this tender, duly stamped & signed in all pages **except financial proposal** shall be submitted at the address mentioned in clause 1.2.8 of this RFP on the date and time mentioned in tender notice. (Submission of physical documents only).
- 3.1.17 If any tender documents are received after the specified last date and time of the submission, all such tender documents will be rejected on the basis of late submission without any other reasons assigned thereof.

4 Scope of Work for the Concessionaire

The Concessionaire shall be solely and exclusively responsible to design, implement and maintain on ESCO model, the solution as mentioned in this RFP and to provide the services as specified.

MCB seeks to appoint a concessionaire for a **contract period of 08 years**, for undertaking following tasks for upgrading the street lighting system under MCB jurisdiction:

- Task 1: Replacement of existing luminaires (within municipal boundary of Bathinda Municipal Corporation) with LED luminaires (including LED lamp, Driver and Luminaire) and installation of Centralized Control & Monitoring System (CCMS)
- Task 2: Undertake comprehensive operation and maintenance of street lighting network for contract period

4.1 Scope of Work

4.1.1 Special Conditions of Tender for Task 1: Replacement of existing luminaires with LED luminaires (including LED, Driver and Luminaire) and installation of CCMS

4.1.1.1 **Implementation timeline:** The Successful Bidder has to supply, install, test and commission LED luminaires and three-phase CCMS panels within 5 months from the date of award of work failing which a penalty of INR 100,000/ week will be applicable for a maximum period of 4 weeks after which M&V of energy savings will be stopped resulting in no payments towards energy saving till the complete installation.

4.1.1.2 **Wattages of LEDs to be installed:** The intent of MCB is to replace existing luminaires with LED luminaires to get lighting levels equal or better than the lighting levels being given by existing luminaires. To ensure this the successful bidder will have to give demonstration of the performance of the LED luminaires (bidder is planning to install in the project) on roads which have street lighting infrastructure (pole height and gap between poles) as per NLC code and prove that their luminaires are meeting NLC standards. Bidder will have to install following minimum wattages of LED luminaires after replacement of existing luminaires:

Sr.No	Type of luminaire (existing)	Wattage(W)	Ballast losses (W)	Numbers (approximately)	Wattage of LED proposed
1	FTL	36	5	527	15
2	LED	40	0	218	40
3	LED	60	0	300	60
4	LED	90	0	286	90
5	LED	120	0	26	120
6	CFL	45	7	236	15
7	CFL Park	20	4	232	8
8	T-5 (4 *14W)	56	7	324	18
9	FTL	40	8	13068	18
10	HPSV	70	15	2957	30
11	HPSV	150	20	3681	60
12	HPSV	250	25	1142	100
13	Lamp	100	10	257	40
			Total	23254	

Note:

± Contract Period would be 08 years including installation period of 5 months (extendable by 1 Month with defined penalty clause) and remaining for O&M and energy savings payment. End date of contract period would be exactly 08 years irrespective of installation period whether it is less than or more than 5 months. For Example: Contract signed date is 01/July/2017, then end date of contract date would be 30/June/2025. The Concessionaire will not be eligible for any payment, for the period, after the contract end date.

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- The total number of luminaires to be replaced under the project may vary by ±15% before the completion of implementation.
 - The Wattages and Ballast losses mentioned in the table above would be binding to establish baseline for entire duration of the contract period.
 - All existing 250 W HPSV will be replaced with warm LED's having CCT around 3,500 K with ± 500 K.
 - The LEDs should not flicker during its normal operating duration at the specified parameters/ ranges.

4.1.1.3 **Guaranteed savings:** The minimum guaranteed energy savings, with the installation of LED street lights, should be around 60%.

4.1.1.4 **Operating hours and dimming:** The Successful Bidder has to maintain average operating hours per day for street lights after the completion of the project, across the year, equivalent to existing levels of 10 hours per day. If MCB want to increase operating hours, for newly installed LED lights, then baseline will also be changed correspondingly to estimate energy savings. Although the bidder is required to provide dimming option in the new system (minimum upto 50%) but he will not be allowed to use it for additional energy saving, unless explicitly advised by MCB through written communication. Also the additional saving on account of dimming will not be shared with the bidder and all the energy saving benefit will remain with MCB.

4.1.1.5 The Successful Bidder has to ensure that all the available street lighting feeder panels (existing or new) in the city are connected to the CCMS system.

4.1.1.6 **Baseline:** The baseline defined in Annexure VI is for existing condition of street lighting

system in Bathinda. However, actual baseline during the installation period (i.e. from the start of project to complete installation) may vary by ±15% in terms of number of light points as well as electricity consumption. The CONCESSIONAIRE may be asked by MCB to install/ uninstall light points during the time of implementation and subsequently, the baseline will be modified on the completion of installation of LED lights. This modified baseline will be considered for assessment of energy savings throughout the concession period for verifying the actual saving.

4.1.1.7 The Successful Bidder has to adhere to the technical specifications as specified in Technical Specifications section for different type of street lighting equipment.

4.1.1.8 The Successful Bidder has to arrange all the equipment, machineries and instruments required for the implementation of the project at its own expense. Also the Successful Bidder shall procure at his sole expenses all permits and licenses and pay all charges and fees for lawful execution of the work.

4.1.1.9 Before starting the installations, it is the responsibility of the Successful Bidder to ensure that ONLY relevant poles or lamps are taken up for installations which belong to MCB. Poles outside such jurisdiction are not supposed to be taken up.

- 4.1.1.10 The CONCESSIONAIRE shall undertake marking of poles (pole numbering) for each LED luminaire installed in service area of MCB and switching point details. However, this should be done without damaging the infrastructure of MCB/DISCOM.
- 4.1.1.11 The Concessionaire has to prepare switching point based inventory post replacement and the concessionaire shall conduct GIS/ GPS mapping of street lighting switching points/feeder panels and rationalize the coverage area under the switching points.
- 4.1.1.12 **Service Wire:** The CONCESSIONAIRE has to install cable/wires (each for phase and neutral) of required length for connection of luminaire to overhead conductor/ power supply cable. The Cables/ Wires should be of 10 sqmm, PVC insulated, 4-core Aluminum wire. **No extra charge** will be payable to the concessionaire for this work.
- 4.1.1.13 The Project area comprises of poles that are under jurisdiction of MCB's eight administrative zones (Zone I-VIII). There are a total of 23,254 luminaires in place being operated by 358 switching points/ feeder panels.
- 4.1.1.14 ~~**Bracket/Arm/Clamps:** In case these items are not available at existing locations or existing Bracket/Arm/Clamps are defective, then the same are to be supplied and installed by the CONCESSIONAIRE and for this **no extra charges** will be payable.~~
- 4.1.1.15 The Successful Bidder must take adequate care, by using black cotton tape or better quality tape for connection of wires, to avoid short circuiting of connections especially during monsoon season between luminaire wire and overhead network of DISCOM. **No extra charge** will be payable to the concessionaire for this work.
- 4.1.1.16 **Surge protection:** The CONCESSIONAIRE will provide surge protection arrangement to protect the luminaire from switching surges which are expected/prevalent in Street Light supply networks. **No extra charge** will be payable to the concessionaire for this work. **No claim for failure** of Luminaires, on account of **voltage surges other than Lightning surges**, will be considered.
- 4.1.1.17 In case of voltage surges due to **lightning**, it is expected that lights, in the affected circuit, will fail in a group and not in an isolated manner. Hence, any such failure of lights in a group on account of Lightning surges, may be reported to the MCB, along with circumstantial evidence preferably within 48 hours of such occurrence, for the purpose of damage claim. The responsibility for submission of supporting documentation rests with the successful Bidder.
- 4.1.1.18 **Earthing:** The provisions of IS-3043, may be referred to in general and to Clause no. 21.3, 21.4 and 32.5 of the said IS Specifications in particular. Successful Bidder may carry out, **at his own cost**, earth resistance measurement of neutral conductor of supply network during the initial commissioning phase and subsequently on yearly basis or as may be felt necessary for reliable operation of the Light Luminaires. Wherever, in CCMS provision of additional earth electrode is felt necessary to meet the provision of IS: 3043, the same shall be taken up with MCB for mutual agreement. **No claim for failure** of Luminaires will be entertained on account of earthing issues.
- 4.1.1.19 The Concessionaire shall be responsible for identifying existing asset deficiency like power cables (overhead/ underground cables from feeder panels to various poles) for street lighting or conductors, required JB's/MCBs on poles and existing damaged poles in street light infrastructure maintained by MCB. In such instances, the Concessionaire will provide the asset deficiency report and related anticipated expenditure for replacement. The replacement of such infrastructure will be done by the successful bidder after getting approval of MCB. The Concessionaire will be paid, for this infrastructure improvement @ 15% discount, on approved Common Schedule of Rates (CSR) as approved by State of Punjab for replacing/ installing the poles, power cables, JB's/MCBs on poles for street lighting. In addition to this, MCB may ask for painting of some poles across the city. After approval on the number of poles and locations for painting from MCB, the Concessionaire can start the painting work and payment will be made, considering 15%

discount, on approved Common Schedule of Rates (CSR) as approved by State of Punjab. If rate is not available in CSR, then MCB will discover the market price through minimum three bids. In such situation the Concessionaire will be paid on discovered market price.

~~4.1.1.20~~ In view of the continuous development of the city expected during the contract tenure and after the commissioning date, MCB might need to install more street lights in the new or existing areas. In those cases, the CONCESSIONAIRE may be asked to install additional street lights and CCMS panels and connect the same to overall CCMS system. In case of such additions after commissioning of the project, MCB will reimburse the Concessionaire, the cost of the luminaire, at the fixed rate of INR 80/watt for each of the luminaire, at one time throughout the concession period. No payment towards energy savings would be made by MCB to the Concessionaire for all such additional street lights but the CONCESSIONAIRE will be paid O&M for those luminaires at the rate, which is being paid for other luminaires, till the contract end date.

4.1.1.21 Also, in such cases as defined in clause 4.1.1.19, the CONCESSIONAIRE has to carry out the O&M of these additional luminaires and CCMS panels. The CONCESSIONAIRE will be paid as per their quoted rates, of that respective year, in the price bid document of this tender. The Operation and Maintenance Fee associated with these addition/deletion will be done starting following month of addition/deletion.

4.1.1.22 The Successful Bidder might be required to:

Change existing CCMS panels to higher capacity in view of inclusion of additional street lights resulting in insufficient rating of CCMS panels at its own cost.

Shift the CCMS panels from one place to other place due to obstacle in traffic, line shifting or for the purpose of load distribution at its own cost.

4.1.1.23 The Successful Bidder has to intimate MCB about any cases of power theft or unauthorized connection of load during festivals from the street lighting network on priority basis. MCB will be responsible for taking all the corrective measures required and not penalize the Successful Bidder for such theft.

4.1.1.24 The Successful Bidder shall ensure proper recording of the dismantled conventional luminaires and report that to MCB on weekly basis.

4.1.1.25 The Successful Bidder will buy-back the dismantled lamps from MCB as per the rate quoted in price bid. The buy-back price will be same irrespective of condition of dismantled lamps.

4.1.1.26 With regard to asset ownership, following need to be adhered to:

- MCB shall at all times during the contract period remain the owner of the land and the existing lighting infrastructure under its jurisdiction.
- The Successful Bidder will not be held liable for lighting infrastructure existing prior to the date of commissioning of LED luminaires and CCMS panels or arising from any event or circumstance that occurred prior to the date of commissioning.
- The Successful Bidder shall remain the owner of the LED luminaires and CCMS panels installed by it during the contract period. The Successful Bidder shall undertake all the procurement of equipment and services necessary for the Project. This LED luminaires and CCMS panels shall be free of any lien.
- At the expiry of the contract period, all rights and titles to, and interests in, all improvements and equipment constructed or systems installed are vested in MCB, free and clear of all and any liens and encumbrances created or caused by the Successful Bidder. The Successful Bidder shall surrender possession of the LED luminaires and

- CCMS panels, along with CCMS bill of material, to MCB with 98% of them in working condition.

4.1.1.27 MCB will conduct monthly or annual reconciliation of readings provided by CCMS and DISCOM energy meters. If deviation between CCMS energy meter readings and DISCOM energy meter is more than 2%, then MCB or a third party appointed by MCB, will carry out on site measurement for verification. This deviation of 2% is allowed only if the overall committed energy savings for the system is achieved.

4.1.2 Special Conditions of Tender for Task 2: Undertake comprehensive operation and maintenance of street lighting network

During the contract period, following operation & maintenance activities will be required to be carried out by the Successful Bidder:

- 4.1.2.1 The Authority shall remain the principal employer of the municipal employees working for the street lighting department. Such employees may or may not, at the Successful Bidder's sole discretion, be seconded to the Successful Bidder for a specific duration and under terms and conditions to be agreed upon between the Parties. The Successful Bidder has no obligation to employ directly or indirectly any municipal employees.
- 4.1.2.2 The Successful Bidder has to store inventory (minimum 1% of total light points in the city) of LED luminaires for maintenance requirements.
- 4.1.2.3 The CONCESSIONAIRE will open an office in MCB office with basic infrastructure where the CONCESSIONAIRE will make available a person with amenities like computer, printer, phone, complaint register, etc. during working shift timings. This complaint handling center will be connected to MCB's existing Complaint Management System and such centers should become fully operational within 30 days of allocation of such space by MCB.
- 4.1.2.4 The CONCESSIONAIRE has to be proactive in monitoring street lighting system regularly and performing preventive maintenance and not relying solely on Complaint Management System.
- 4.1.2.5 In case of theft of the material or electricity, the CONCESSIONAIRE will inform the MCB and MCB will file the FIR. Further, after FIR, the Concessionaire will address the theft by replacement of material or removing illegal electricity connection as the case may be, in presence of MCB officials. The Concessionaire will have to bear the cost for the losses in material. In case of theft of electricity, the feeder panel specific consumption would be adjusted for the theft.
- 4.1.2.6 The Successful Bidder will manage the operation of all the control panels installed by him and also provide maintenance, web-based portal & communication services etc. of these control panels during the contract period.
- 4.1.2.7 All complaints lodged in the system have to be resolved within 48 hours of lodging of complaint. For example, if the complaint is lodged on 16th May at 10 PM then the complaint has to be resolved by 18th May 10 PM. In certain cases, CONCESSIONAIRE has to resolve the complaints immediately as per the instruction of EIC.
- 4.1.2.8 The Successful Bidder shall ensure the availability of sufficient ladder vehicle, Hydraulic Vehicle (suitable to reach upto 10m height) and other relevant vehicle & equipment for O&M. The vehicle used for O&M should have valid registration documents.
MCB can lease out certain maintenance equipment and vehicles to the Concessionaire based on mutually agreed terms & conditions and defined fixed monthly/yearly payment.

- 4.1.2.9 The Successful Bidder to ensure that no work is held up due to non-availability of ladders, etc., otherwise the Successful Bidder will be held responsible for such delays.
- 4.1.2.10 In case normal vehicle is unable to access the light point, the CONCESSIONAIRE will be required to make necessary arrangements for facilitating street lighting installation and maintenance at such locations.
- 4.1.2.11 The CONCESSIONAIRE has to ensure that drivers of ladder vehicles must possess valid driving license, vehicle registration documents, insurance, etc. at all times during the contract period.

4.1.2.12 The CONCESSIONAIRE has to carry out O&M of street lighting network including following specific conditions:

Conditions	Responsibility of CONCESSIONAIRE
Maintenance of central lighting	Apart from regular O&M activities; the CONCESSIONAIRE will be responsible for maintenance/replacement of junction box, related switchgears and related connecting wires/ cables.
Some poles, street light span or street light control may be shifted due to obstacle to traffic, line shifting or for the purpose of load distribution	In such a situation, the CONCESSIONAIRE has to bring in labor for dismantling Luminaire and again putting up Luminaire after shifting has been completed by MCB.
Due to overhead mix network, snapping of conductors, phase-to-phase phenomenon is very frequent and leading to damages of street light luminaire and its components	The CONCESSIONAIRE, under such a condition, will register a complaint with the DISCOM and also undertake required O&M. The Authority will coordinate with DISCOM, if required.
All street lights are installed on bracket suitable to its entry diameter; however, it may be possible to change some of the brackets at site for LED installation.	All the associated cost would be borne by the Concessionaire.

4.1.2.13 The Successful Bidder will be penalized for non-achievement of following O&M performance parameters:

Performance parameter	Particulars	Penalty for non-achievement
Complaint resolution	The complaints need to be solved within 48 hours of lodging of complaint	Rs. 100 /lamp/day
Addressing phase failure issue	The phase failure should be resolved within same day	Rs. 500 / phase/ day Rs. 500/visit If MCB staff is engaged for resolving phase issue
Hour of operation of street lights	As per normal operating hours	Increased bill amount + 100% as a penalty on this increased bill if average hours of operation per annum are more than 10 hours/day without the approval of MCB.
Guaranteed savings of 60%	CONCESSIONAIRE has to maintain the minimum guaranteed savings of 60%	Rs. 110,000 per month for every 1% reduction in minimum guaranteed energy saving. For example: if 2% reduction in minimum guaranteed energy saving, then penalty would be 220,000 per month in addition to the lower payment to CONCESSIONAIRE on energy saving bill In case the savings fall below 50%, CONCESSIONAIRE will not be made any payments towards energy savings and only O&M cost will be paid.

4.1.2.14 The CONCESSIONAIRE will organize half-day training program at MCB office wherein the CONCESSIONAIRE will train the employees of MCB on any day within one month of the date of commissioning and on any day within last quarter of end of contract period on the operation, maintenance and repair of the equipment and systems installed by the CONCESSIONAIRE

4.1.2.15 Successful Bidder should address the queries or issues raised by employees of MCB on

O&M practices from time to time

- 4.1.2.16 The Concessionaire shall assign an overall in charge for coordination and monitoring of day to day activities of entire city network. Additionally CONCESSIONAIRE should deploy the team as proposed, in their technical bid, from their organization who are regular employees and provide the contact details of the same, who shall be accountable for delivering on the said commitments during the Contract Period, coordinate for daily O&M exercise and update MCB as per agreed format. In case, the assigned personnel leaves the organization or is reassigned, the CONCESSIONAIRE has to intimate the same in writing to MCB and advice names of the new officers assigned for the role.
- 4.1.2.17 **Insurance:** The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage, delivery, completion of installation and commissioning as brought out at Clause "Special Conditions of Tender mentioned in 4.1.1 and 4.1.2". For delivery of goods at site, the insurance shall be obtained by the Successful Bidder, for an amount not less than the Price of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War risks and strikes.
- 4.1.2.18 **Safety:** During the period of installation and O&M, the Successful Bidder should ensure implementation of measures to ensure SAFETY of working personnel, as per all applicable laws in general and with special focus in the following.
- a. Working at heights
 - b. Working on/in the vicinity of power supply lines.

Suitable work instructions/procedures shall be prepared for each type of work location (Height or type of pole / supply network configuration) and the working personnel shall be trained at regular intervals by a competent person possessing valid certificate w.r.t SAFETY issues.

All the working personnel shall be provided with appropriate Personnel Protection Equipment such as Safety harness for working at heights, safety helmets, Earthing rods, etc. The Successful Bidder shall arrange to carryout safety Audit at regular intervals by a competent person possessing valid certificate w.r.t SAFETY issues and suitable remedial measures shall be taken based on the findings/recommendation of the Safety Audit.

4.1.3 Assessment of lighting load

It is acknowledged that PSPCL charges MCB for electricity consumption in street lighting based on the connected load with any feeder / energy meter. For every feeder/ energy meter, a separate bill is raised on monthly basis. Therefore, in order to realize the benefit of reduced energy consumption after the installation of LED lights, MCB will have to get reduce the sanctioned load of each of the street lighting feeder proportionately. MCB will take-up this with PSPCL so that sanctioned load of each of the feeder is reduced based on the new load on the feeder after the installation of LED lights.

During implementation stage, the Concessionaire must first install control panels with each of the feeders/ switch points before the installation of LED lights so that these panel can measure the existing lighting load also on each of the energy meters for a specified period of time (1-2 days). After recording these measurements the Concessionaire will replace the old lights with LED lights and will again record the changed load. Other parameters such as no. of lights and their corresponding wattage shall also be recorded for any switching point before and after replacement with LED lights. MCB will also provide Concessionaire, the previous year bills for each switching point. At the **end of every month**, from the start of installation phase, the concessionaire shall

for the completed switch points³, must prepare and submit a consolidated report to MCB in the format as provided below:

Zone (I- VIII)	Switch Point Description	Existing load as per utility bill (kW)	Existing load as per new meter installed in CCMS panel (kW)	New load after replacement of all lights connected to switching point (kW)

Note: The 3-phase meter installed at the feeder panel shall be as per the specifications of PSPCL which are provided at Annexure VIII (PSPCL 3-phase meter specifications).

The Concessionaire shall also submit a consolidated report in the above format to MCB separately for each zone, immediately after the work is completed for that zone.

4.1.4 Assessment of energy savings through M&V

The energy savings by virtue of its nature is to be calculated through difference of baseline energy consumption and actual energy consumption. The replacement of existing street light with energy efficiency LED street light is expected to give minimum 60% of energy saving. So the successful bidder will have to ensure minimum energy saving of 60% from all the measures taken in this project.

The M&V of energy savings will be started after replacement work of Four zones has been completed. The Concessionaire will be eligible to raise the invoice for the energy savings realized after complete installation in Four zones. For illustration, if total installation is completed in Four zones on 1st August 2018, than Concessionaire is eligible to raise invoice on 1st September 2018 for energy savings realized in the period from 2nd August 2018 to 31st August 2018. No payment will be made to the Concessionaire for the energy savings generated prior to 2nd August 2018.

For subsequent zones (i.e. 5th to 8th Zone), payment of energy saving would start only after total completion of remaining Four zones. No payment will be made to the Concessionaire for the energy savings generated during the installation period and for any period before the commissioning date.

O&M period shall commence from the date of issue of satisfactory Installation, Testing and Commissioning certificate of all LED Street lights from Engineer-in-charge (i.e. only after complete installation in four zones & thereafter complete installation in remaining four zones). The payment for O&M will begin after date of issue of satisfactory Installation, Testing and Commissioning certificate of all LED Street lights. The payment, on account of O&M, for the period between the completion date of any zone and the first day of the second year will be made @ of O&M quoted by the bidder for the first year.

The CONCESSIONAIRE will be required to submit, at start of every month, detailed CCMS report capturing energy consumption at each CCMS panel, hours of operation, details of events like phase

³ Completed switch points: Means the switch points for which all the connected lights have been replaced and CCMS panels installed.

failure, non-operational light points, etc. to MCB. MCB will direct the ESCROW bank to process the payment to concessionaire after adjusting for penalties, if any.

MCB or the third party consultant hired by MCB will conduct reconciliation of CCMS report and DISCOM bills semiannually and any discrepancies observed in the savings of CCMS report would be adjusted in the subsequent invoice of the Concessionaire.

4.2 System Documents, User Documents

The CONCESSIONAIRE will provide all project related documents. This documentation should be submitted as the Project undergoes at various stages of implementation. Indicative list of documents include:

- Project Commencement Documentation: Project Plan in giving out micro level activities with milestones & deadlines.
- Equipment Manuals: Original Manuals from OEMs.
- Installation Manual: For all the application systems.
- Training Material: Training Material will include the presentations used for trainings and also the required relevant documents for the topics being covered. Training registers should be submitted for same.
- User Manuals: For all the application software modules, required for operationalization of the system.
- System Manual: For all the application software modules, covering detail information required for its administration.
- Standard Operational Procedure (SOP) Manual: The Bidder shall be responsible for preparing SOP Manual relating to operation and maintenance of each and every service as mentioned in the RFP. The draft process (SOP) document shall be formally signed off by MCB before completion of Final Acceptance Test. This SOP manual will be finalized by the Concessionaire within 2 months of operationalization, in consultation with the MCB and formally signed off by the MCB.

Note: The CONCESSIONAIRE will ensure upkeep & update all documentation and manuals during the concession period. The ownership of all documents, supplied by the Concessionaire, will be with MCB. Documents shall be submitted in two copies each in printed (duly hard bound) & in softcopy formats.

4.3 Helpdesk Setup

- The CONCESSIONAIRE will set up a 24X7 centralized helpdesk for the project for entire concession period;
- The help desk will handle user queries and issues relating to implemented solution
- The helpdesk is required to ensure that users can log calls and complaints for any technical issues they face while accessing the system. The following is included in the scope of work of the Concessionaire:
 - The helpdesk to have Interactive Voice Response (IVR) system for first level of call segregation;

- Accordingly Standard Operating Procedures (SOPs) shall be created by the Concessionaire;
- In addition to the telephone call, the Concessionaire shall also provide other channels for call logging like email and web interface;
- Following is also part of scope of work of Concessionaire: (a) Development of training material for MCB employees (b) training to be imparted to MCB (c) provision of Call center application (d) Development of standard operating procedures with call prioritization guidelines, problem security codes and escalation procedures etc. in consultation with MCB (e) Helpdesk related infrastructure;
- Language Capabilities : Hindi and English;
- The service window for Help Desk is 365X24X7 (Monday to Sunday);
- The call statistics will be analyzed every quarter after Go-Live and the number of Customer Care Executives may be ramped up or down accordingly on a week's notice;
- The Concessionaire shall deploy helpdesk application accessible to all users through the Smart City portal for logging issues; and The Concessionaire to provision for inbound calls.

4.4 Capacity Building

The Concessionaire need to provide training and capacity building to MCB employees and other stakeholders as directed by MCB/ MCB. The following is a broad level scope;

- The Concessionaire will prepare all the requisite audio/visual training aids that are required for successful completion of the training for all stakeholders. These include the following for all the stakeholders:
 - Training manuals for MCB employees / stakeholder departments;
 - Computer based training modules;
 - Presentations;
 - User manuals;
 - Operational and maintenance manuals for Smart Components implemented; and
 - Regular updates to the training aids prepared under this project.
- The Concessionaire will maintain a copy of all the training material on the portal and access will be provided to relevant stakeholders depending on their need and role. The access to training on the portal would be finalized with MCB. Concessionaire has to ensure the following points:
 - For each training session, the Concessionaire has to provide the relevant training material copies to all the attendees.
 - The contents developed shall be the property of MCB with all rights.
- The Concessionaire has to ensure that the training sessions held are effective and that the attendees would be able to carry on with their work efficiently. For this purpose, it is necessary that the effectiveness of training sessions is measured. The Concessionaire will prepare a comprehensive feedback form that will capture necessary parameters on measuring effectiveness of the training sessions. This form will be discussed and finalized with MCB.

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- After each training session, feedback will be sought from each of the attendees on either printed feedback forms or through a link available on the web portal. One member of the stakeholder group would be involved in the feedback process and he/she has to vet the feedback process. The feedback received would be reported to MCB/ MCB for each training session.

4.5 Hand-over of the system at the end of contractual period

The Concessionaire will supply to the MCB the following before the expiry of the contract:

- Information relating to the current services rendered and data relating to the performance of the services; Entire documentation relating to various components of the Project, any other data and confidential information related to the Project;
- All other information (including but not limited to documents, records and agreements) relating to the products & services related to the project to enable MCB and its nominated agencies, or its replacing Concessionaire to carry out due diligence in order to transition the provision of the Project Services to MCB or its nominated agencies, or its replacing Concessionaire (as the case may be).

5 Technical Specification

The scope includes design, development, manufacturing, testing and supply of energy efficient luminaire complete with all accessories, LED lamps with suitable current control driver circuit including mounting bracket for street light and High mast light. The luminaire shall be suitable for rugged service under the operational and environmental conditions encountered during service. The detailed technical specification for each component of the project i.e. LED Luminaire and CCMS is provided in subsequent section,

5.1 LED technical specification

S. No.	Typical specifications of LED street lights	Supporting document
1.	High bright white power LEDs shall be used in the luminaries and the wattage of these LEDs shall be < 3W	LED Technical Data sheet
2.	Life span of LEDs used in the Luminaire shall be more than 50,000 hours at 70% light output	LM-80/IS16105,L70 & TM 21 Test Report including technical data sheet of LED Chip
3.	Colour rendering index (CRI) of the LEDs used in the luminaire shall be greater than 70	
4.	LED chip make – Nichia, Philips, Osram, CREE	
5.	LED chip efficacy shall be more than 135 Lumens/watt at Tj 25° C	LED Technical Data Sheet
6.	Junction Temperature (Tj) should be <105C	Manufacturer self-certify Photo
7.	Photo Biological Safety Report for the LEDs as per IEC 62471 and assessment of blue light as per IEC/TR 62778 – Ed. 1.0	Biological Safety Report
8.	Colour temperature of the luminaire shall be in the range of nominal 3,000 K to 3,500 K for replacement of 250 W HPSV at main roads and 5000 K to 6000 K for balance LED's (CCT as per BIS only)	LM-79 report for both type of LED's to be submitted by the bidder
9.	Power factor > 0.95	LM-79 report
10.	System Efficacy (lumen/watt) Shall be > 100 lumen/watt	LM-79 report
11.	CRI of Luminaries > 70	LM-79 report
12.	Lumen depreciation for rated life <10%	LM 80 Report to be submitted and Manufacturer has to self-certify LM-79 report
13.	The luminaire light output (lumen) shall be constant. The voltage variations / fluctuations in the specified voltage range shall not impinge upon the lumen it produces. Maximum +/- 2% is allowed throughout in the input operating voltage range	NABL accredited lab report
14.	Operating voltage: 140 V to 270V universal electronic driver with internal surge protection of 4 KV (Applicability IS 15885, Driver Safety 16104-1/2)	NABL accredited lab report
15.	Overvoltage cutoff limit > 295 V	NABL accredited lab report
16.	Total Harmonic Distortion: < 10% THD - Test Method IEC:610003-2	LM-79 report
17.	LED Drive current >= 350 mA < 1200 mA	LM-79 report
18.	LED driver efficiency > 85%	NABL accredited lab report
19.	Heat dissipation / heat sink: Well-designed thermal management system with defined heat sink	NABL accredited lab report
20.	The luminaire housing shall be made up of corrosion free High Pressure Aluminium die cast thus conforming the luminaire to minimum IP-66 for all wattages and safety as per IEC 60598/IS 10322. (Only single housing Luminaire	

S. No.	Typical specifications of LED street lights		Supporting document
	allowed).		
21.	The luminaire shall be equipped with distortion free, clear, heat resistant, toughened, UV stabilized glass / Poly-carbonate cover in the front fixed to the die cast Aluminum frame which shall be fixed to the housing by means of Corrosion resistant or Brass screws for areas not inside IP66 rated chamber. Zinc plated steel or equivalent screws can be applied inside sealed chambers.		NABL accredited lab report
22.	The luminaire shall be built in such a way that it can withstand wind speed of 150 kmph. (Impact resistance >= IK05)		NABL accredited lab report
23.	Frequency	50 Hz + /- 3%	
24.	Operating temperature	Range: -10C to +50C	NABL accredited lab report
25.	Protections	IP66 for all type of lamps to be installed Surge protection 4 kV, IEC61000-4-	NABL accredited lab report
26.	Working humidity	510% to 90% RH	
27.	Conformation standards of luminaire reports (Test of luminaire)	The luminaire should conform to IEC 60598/ IS:10322 The luminaire should be tested as per IEC 60598-2-3:2002/ IS:10322 Part 5 Sec-3 standards and following test reports should be submitted: Thermal Test, Ingress Protection Test, Electrical / Insulation Resistance Test, Endurance Test, Humidity Test, Photometry Test (LM79 report), Vibration Test	From NABL Certified TPL Test report TEST REPORT as per IS:10322 part 5 Sec-3 /IEC:60598-2-3
28.	Finish Luminaire	Aesthetically designed housing with corrosion resistant polyester powder coating	Self-Declaration
29.	configuration / technical requirement	Side entry type. Shall consist of separate optical and control gear compartments. It should be easily replaceable in the field condition.	Self-Declaration
30.	Compliance	RoHS/CE/ERTL/ERDI	Confirmation
31.	Surge Protection	External Surge protection of minimum 10 kV/ 10 kA to be separately installed with the each Luminaire, if required.	As per ANSIC 136.2-2014

NOTE:

- All Tests have to be confirmed and appropriate TEST REPORT has to be submitted at the time of bid submission.
- MCB is free to draw samples⁴ after start of supplies from the supplied quantity and subject the same to test in a NABL Accredited Lab. MCB will bear the cost of testing of such sample. The decision of MCB on the same shall be binding on the Concessionaire. Failure of the sample will invite strict penalty and disqualify the Bidder from future tenders also.

⁴ The sample size shall not be more than 0.5% (zero point five percent) per lot.

5.2 CCMS

CCMS having following features needs to be installed by the CONCESSIONAIRE.

S. No	Features	Description
1	Operational Features	<ul style="list-style-type: none"> • The CCMS unit should be capable of switching ON and OFF the lights of a particular switching point and/or networked switching points from Central Control Station instantaneously or automatically throughout the year on basis of Sunrise and sunset time depending on the geographical location of the switching point. • The CCMS unit should be a GPRS and/or GSM (with IMEI number) proven technology based remote streetlight monitoring system with capacity for self-protection from short-circuit, over voltage and anti-theft alert. • The CCMS unit should have a battery backup of at least 12 hours. • The CCMS shall have optically isolated communication port to fetch data (this is required for safe data transfer and to protect unauthorized access) • The rating of the CCMS units should be at least twice that of the lighting load
2	Energy measurement and communication features	<ul style="list-style-type: none"> • The control panel at each of the switch point/ feeder should have a 3-phase energy meter. The detailed specifications of these meters are: ISI Marked, LT AC 3-Phase, 4-Wire CT operated, Static, DLMS Compliant, Energy Meters (Category-C1) of ratio 100/5A & 200/5A of Accuracy Class-0.5S (for both active and reactive energy) with 'Optical port' & 'RS-232 port' along with Compatible Software, to be installed in CCMS panels. More details are available in Annexure VIII of this RFP, titled as "PSPCL 3-phase meter specifications". • The control panel at each of switch point/feeder should have following but not limited to : <ul style="list-style-type: none"> ○ MCB, Con factor, transformer, controller, relays etc. • The CCMS unit Should be able to capture (record) and provide following parameters at variable time-intervals (Individual switching point wise and/or networked switching points) : <ul style="list-style-type: none"> ➤ Voltages ➤ Current ➤ Power Factor ➤ Active Power (kW) ➤ Apparent Power (kVA) ➤ Metering kWh cumulative ➤ Metering kVAh cumulative • Number of hours of a group of LED luminaires connected with each switch controller was glowing • Number of hours the power supply was unavailable • Special emergency on/off facility with wireless control. • Benchmarking capacity so as to generate alert SMS for: <ul style="list-style-type: none"> ➤ Phase-wise currents on crossing threshold values* ➤ Phase-wise voltages on crossing threshold values* ➤ MCB trips ➤ Theft alerts ➤ Group failure of lights ➤ No output supply • Alert SMS shall be forwarded to five (5) phone numbers. • CCMS should have provision for incorporating monitoring and control of smart solutions like environmental meters, wifi hotspots, etc. • Class 1.0 accuracy Energy Meter with ISI marking/IS-13779 is to be used for power measurement. Type testing report from NABL Accredited Lab to be provided. It is to be calibrated annually. <p>* Please refer the technical specifications for designing the threshold values for voltage and current</p>
3	Web based	<p>Central Control and Monitoring System functionalities</p> <ul style="list-style-type: none"> • CCMS shall have a web-server to receive and record all data with time

	<p>Application</p>	<p>stamping from the streetlight controllers.</p> <ul style="list-style-type: none"> • It should be able to communicate with any individual switching points or collectively amongst networked switching points for control and monitoring. • It should be able to record LED luminaires glowing and non-glowing hours of a particular switching point. • It should be able to display the power failure details of a particular switching point and the relevant luminaires. • It should register all fault conditions like excess voltage/current drawn, no-power supply, etc. through the instantaneous alert messages sent by the CCMS unit. • Reports such as energy saving report, lamp failure report, actual hours of operation, uptime (%), etc. should be generated on a daily basis from the data/readings received from the CCMS units. • Different user authorization levels should be settable and the central server should be capable of handling heavy traffic, i.e. the number of LED street lights installed in wards under this program. • GIS Mapping should be done covering all switching points and the details of each switch point shall be viewable in the web application software through a Google-map interface or web based digital map. • All the CCMS units should be remotely configured from the Central Control Unit: <ul style="list-style-type: none"> • Setting new ON/OFF timings • Setting the Response Time Count (RTC) time of Automation unit • Knowing the current status of any particular switching point. <ul style="list-style-type: none"> • Reset the unit. • The minimum interval for the update of data should be 15 minute but programmable up to 1 minute. • Auto synchronization of controller with server timing to be further synchronized with standard GPS clock timing. • The system monitors all the following from the CCMS unit <ul style="list-style-type: none"> • Voltages each phase • Current each phase • PF each phase • Metering kWh cumulative • Metering kVAh • Further system is able to indicate various faults <ul style="list-style-type: none"> • Failure of contactor • Status of the incoming supply (power failure) <ul style="list-style-type: none"> • High /low voltage • Overload on the phases • The central CCMS unit is capable of handling minimum 2500 number switching point units. • CCMS shall have server preferably dedicated server set-up or cloud based arrangement to ensure 100% guarantee of the data transmission and real time data storage for last 2 years (25 months) and archived data for the contract period. • Data authenticity and validation has to be ensured. Reports to be submitted in a common CVS format. • Cyber security, safe database management, data retrieval and trouble free operation of software and allied systems (24*7) to be ensured. • CCMS system should have a self-healing mechanism and in case of failure, Bidder to ensure resumption of service within 24 hours. Till resumption of full services, the default settings of the CCMS should ensure timely ON/OFF operation of the street lights. • System to report Jamming/hacking attempts and maintain status-quo in case of Jamming/hacking attempts i.e. if lights are ON, they should remain ON till the default OFF time recorded in the system. In case lights are OFF at the time of Jamming/hacking, lights should remain OFF till default ON time recorded in the system.
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Note:

1. **Bidder will manage (warranty, operation, maintenance, web-based portal, communication charges) the installed CCMS units for the contract period.**
2. The main control room and main system of CCMS should have adequate features (open APIs, Ports, etc.).
3. The feature proposed for CCMS is indicative. However, Bidders are free to offer their lighting control technology which should encompass all key features as above.
4. The Bidder will have to submit Bill of Material and technical specifications for CCMS along with tender.
5. The Bidder will have to transfer the rights of usage of web-based application & necessary software used for CCMS operation on completion of contract period.

6 Evaluation of Bids

6.1 Opening and Evaluation of Bids

MCB shall ensure that the rules for the bidding proceedings for the Project are applied in a non-discriminatory, transparent and objective manner. MCB shall not provide to any Bidder information with regard to the Project or the bidding proceedings, which may have the effect of restricting competition.

Information relating to the examination, clarification, evaluation, and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process. MCB will treat all information, submitted as part of Bid, in confidence and will require all those who have access to such material to treat the same in confidence.

- 6.1.1 The Authority-1 shall open the Bids on the Bid Due Date, at the place specified in Clause 1.3 and in the presence of the Bidders who choose to attend.
- 6.1.2 The Authority-1 will subsequently examine and evaluate the Bids in accordance with the provisions set out in this Section 3. Such clarification(s) shall be provided within the time specified by MCB for this purpose. Any request for clarification(s) and all clarification(s) in response thereto shall be in writing. If a Bidder does not provide clarifications sought as mentioned above within the prescribed time, its Bid shall be liable to be rejected. In case the Bid is not rejected, the MCB may proceed to evaluate the Bid by construing the particulars requiring clarification to the best of its understanding, and the Bidder shall be barred from subsequently questioning such interpretation of MCB.

6.2 Tests of responsiveness

- 6.2.1 Prior to evaluation of Bids, the Authority-1 shall determine whether each Bid is responsive to the requirements of this RFP. A Bid shall be considered responsive only if:
 - a) it is received as per the formats as mentioned in this RFP and as per Clause 2.8;
 - b) it is received by the Bid Due Date including any extension thereof pursuant to Clause 2.10.2;
 - c) it is accompanied by the Bid Security as specified in Clause 2.17;
 - d) The purchaser of the RFP document must be the Bidder itself or a Member of the Consortium submitting the Bid. The Bidder should submit a Power of Attorney as per

the format enclosed as Form 2A, authorizing the signatory of the Bid to commit the Bid.

- e) In case the Bidder is a Consortium, the members of the Consortium shall furnish a Power of Attorney in the format prescribed at Form 2B designating one of the Members, as per the Memorandum of Understanding (MoU), as their Lead Member and authorizing such lead member to do all acts on their behalf in relation to the bid.
- f) Any entity, which has been barred, by Authority-1 and the bar subsists as on the Bid Due Date would not be eligible to submit the Bid, either individually or as Member of a Consortium. An undertaking as per the format in Annexure V should be submitted along with the Bid.
- g) Members of the Consortium shall submit a Memorandum of Understanding (MoU), specific to this Project, for the purpose of submitting the Bid as per format provided in Annexure V. The MoU shall be furnished on a non-judicial stamp paper of Rs. 100/-, duly attested by notary public.
- h) it contains all the information (complete in all respects) as requested in this RFP and/or Bidding Documents (in formats same as those specified);
- i) it does not contain any condition or qualification; and
- j) it is not non-responsive in terms hereof.

6.2.2 The Authority-1 reserves the right to reject any Bid which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by the Authority-1 in respect of such Bid. At the same time, the Authority-1 would notify the other Bidders that they have not been qualified. MCB will not entertain any query or clarification from Bidders who fail to qualify.

6.3 Selection of Bidder

6.3.1 The technical and financial capability of the Bidders would be assessed based on the evaluation process and minimum requirements as set by Authority-1 as per Section 3, to be submitted by the Bidders in formats in Annexure I.

6.3.2 Subject to the provisions of Clause 2.12, the Bidder whose Bid is adjudged as responsive in terms of Clause 3.1. A Bid that is substantially responsive is one that conforms to the preceding requirements without material deviation or reservation. A material deviation or reservation is one

- i. Which affects in any substantial way the scope, quality, performance of the Project, or
- ii. Which limits in any substantial way or is, inconsistent with the RFP,
- iii. rights of Authority or the obligations of the Bidder under the Concession Agreement, or
- iv. Which would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

6.3.3 Authority-1 reserves the right to reject any Bid which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained in respect of such Bids.

6.3.4 Bidders whose Qualification Bids meet the minimum technical and financial capability requirements as set out in Section 3 shall be considered eligible for opening for Financial Bid.

6.4 Evaluation of Financial Bids (Stage II)

6.4.1 Authority-1 will open 'FINANCIAL BID' of the Bidders, who pass the Technical Qualification stage as stated, in the presence of the Bidder's authorized representatives who choose to attend.

6.4.2 The Price Bids opened would be evaluated on the basis of "Financial Bid Parameter" (monetized benefit for MCB).

6.4.3 The assessment of Financial Bid Parameter comprises of evaluation of following quoted parameters by the Bidders:

6.4.3.1 *Sharing of monetized energy savings for MCB ("A")* – calculated on the basis of quoted percentage of energy savings sharing with MCB, guaranteed energy savings, baseline energy consumption and tariff. Energy saving sharing with MCB has to be minimum 10%. The calculation is as follows:

$A = \text{Quoted percentage sharing of energy savings for MCB} \times \text{Guaranteed energy savings} \times \text{annual baseline energy consumption (kWh)} \times \text{tariff (INR/kWh)}$

$A = \text{Quoted percentage sharing of energy savings for MCB} \times 60\% \times 71,61,804 \times [\text{Fixed Charges@ INR 90/- per KW Per Month} + \text{Variable Charges@ INR 7.35/- Per KWh}]$

6.4.3.2 *Sharing of monetized energy savings for the Concessionaire ("A1")* – calculated on the basis of quoted percentage of energy savings sharing for Bidder, guaranteed energy savings, baseline energy consumption and tariff. The calculation is as follows:

$A1 = \text{Quoted percentage sharing of energy savings for Bidder} \times \text{Guaranteed energy savings} \times \text{annual baseline energy consumption (kWh)} \times \text{tariff (INR/kWh)}$

$A1 = \text{Quoted percentage sharing of energy savings for Bidder} \times 60\% \times 71,61,804 \times [\text{Fixed Charges@ INR 90/- per KW per Month} + \text{Variable Charges@ INR 7.35/- Per KWh}]$

Note: This (A1) would be the revenue stream for the Bidder due to energy saving during the concession period. During the first year of concession period for energy saving payment, tariff rate would be considered Rs. [Fixed Charges@ INR 90/- per KW per Month+ Variable Charges@ INR 7.35/- Per KWh] and a hike of 3% every year will be considered for energy savings payments during the remaining concession period. Guaranteed energy saving i.e. 60% would remain same throughout the concession period.

6.4.3.3 *Annual operation & maintenance of LEDs and CCMS panels ("B")* – Bidder will quote year-wise O&M costs for 8 years.

6.4.3.4 *Buy-back of dismantled luminaires ("C")* – Bidder will quote Buy-back price for dismantled luminaires. The calculation will be made considering buy-back price for each lamp type and number of lamps in each lamp type. The calculation is as follows:

$C = (\text{Buy-back price of lamp type}) \times (\text{Number of lamps in each lamp type})$

Financial Bid Parameter shall be calculated as follows:

Financial Bid Parameter = NPV of value A for 08 years – NPV of value of B for 08 years + C (Buy-back value of first year)

Note: The Net Present Value (NPV) will be calculated assuming a discount factor of 10%.

6.5 Successful Bidder

- 6.5.1 The Financial Bids would be ranked in descending order of the validated Financial Bid Parameter, with the Bidder quoting the highest monetized benefit (on Basis(A-B+C) with highest monetized benefit for Bathinda Smart City Limited) for MCB as ranked “First” and the Bidder quoting the second highest Financial Bid Parameter shall be ranked “Second” and so on
- 6.5.2 The Bidder ranked First in accordance with the above procedure would be declared as the “Successful Bidder” and shall be invited for live technical demonstration by issuing a letter of intent in writing or by fax or email.
- 6.5.3 In the event that the bidder ranked “First” withdraws or is not selected for any reason in the first instance (the “first round of bidding”), the Authority-1 may invite the “Second ranked” Bidder for consideration as Successful Bidder and so on till the selection of the concessionaire or may annul the bidding process and may recall the bids;

6.6 Live Technical Demonstration

- 6.6.1 The Successful Bidder will be asked for Live Demonstration of LED lamps (6-8 LED luminaires of each type of luminaire) & proposed CCMS system which are to be installed during project execution. This demonstration will be monitored and verified jointly by MCB/ MCB and its consultants. The Successful Bidder will not be paid any charges for Live Demonstration. The bidder will be told to demonstrate the results on different category of roads which have infrastructure (pole height and gap between the poles) as per NLC. Demonstration will be done for each type of lamp which are to be installed during the project. The results of demonstration will be made part of the contract and luminaire installed by the bidder will be tested for performance against the demonstration results throughout the contract period. The detailed method proposed to be adopted for technical demonstration is provided in Annexure VII.
- 6.6.2 In case, Live Demonstration does not meet the criteria as specified in Technical Specification, then the Successful Bidder will be disqualified and EMD will be forfeited. Thereafter, Qualified Bidder who was “Second” will be invited and so on.

6.7 Signing of Energy Saving Performance Contract

- 6.7.1 After successful technical demonstration meets the criteria specified in Technical Specifications, the Authority will sign the Concession agreement (Energy Saving Performance Contract) with the successful Bidder and will give go ahead on the implementation of the project and issue the Work Order to the Successful Bidder.
- 6.7.2 The ESPC should be signed within thirty (30) days of the issue of LOA. The Successful Bidder shall not be entitled to seek any deviation, modification or amendment in the Concession Agreement.
- 6.7.3 In case, the ESPC does not get executed within the period mentioned in Clause 6.7.2., Authority-1 reserves the right to take any such measure as it may deem fit including to annul the bidding process and may invite fresh Bid for the Project. In such a case the entire Bid Security submitted by the Successful Bidder shall be forfeited. However, Authority-1 on receiving request from the Successful Bidder may at its discretion, permit extension of time for execution of the Concession Agreement.
- 6.7.4 Authority-1 will notify other Bidders that their Bids have been unsuccessful. Bid Security of other bidders will be returned within 15 days of signing of the agreement or expiry of

⁵ For A -B+C , refer clause 6.4.3.4

validity period of Bids whichever is earlier.

6.8 Contacts during Bid Evaluation

- 6.8.1 Bids shall be deemed to be under consideration immediately after they are opened and until such time the Authority-1 makes official intimation of award/ rejection to the Bidders. While the Bids are under consideration, Bidders and/ or their representatives or other interested parties are advised to refrain, save and except as required under the Bidding Documents, from contacting by any means, the Authority-1 and/ or their employees/representatives and their consultants on matters related to the Bids under consideration.

7 Fraud and Corrupt Practices

- 7.1.1 The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process and subsequent to the issue of the LOA and during the subsistence of the ESPC. Notwithstanding anything to the contrary contained herein, or in the LOA or the ESPC, the Authority-1 may reject a Bid, or the Authority may withdraw the LOA, or terminate the ESPC, as the case may be, without being liable in any manner whatsoever to the Bidder or Concessionaire, as the case may be, if it determines that the Bidder or Concessionaire, as the case may be, has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process. In such an event, the Authority-1 shall be entitled to forfeit and appropriate the Bid Security or the Performance Security, as the case may be, as Damages, without prejudice to any other right or remedy that may be available to the Authority-1 under the Bidding Documents and/ or the Concession Agreement, or otherwise.
- 7.1.2 Without prejudice to the rights of the Authority-1 or Authority under Clause 7.1.1 hereinabove and the rights and remedies which the Authority may have under the LOA or the Concession Agreement, or otherwise if a Bidder or Concessionaire, as the case may be, is found by the Authority-1 or Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, or after the issue of the LOA or the execution of the Concession Agreement, such Bidder or Concessionaire shall not be eligible to participate in any tender or RFP issued by the Authority-1/Authority during a period of 2 (two) years from the date such Bidder or Concessionaire, as the case may be, is found by the Authority-1 or Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be.
- 7.1.3 For the purposes of this Clause 7, the following terms shall have the meaning hereinafter respectively assigned to them:
- a) “corrupt practice” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the Authority-1/Authority who is or has been associated in any manner, directly or indirectly, with the Bidding Process or the LOA or has dealt with matters concerning the Concession Agreement or arising therefrom, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority-1/Authority, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process), engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LOA or after the execution of the Concession Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Concession Agreement, who at any time has been or is a legal, financial or technical adviser of the Authority-1/Authority in relation to any matter concerning the Project;
 - b) “fraudulent practice” means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process;

-
- c) “coercive practice” means impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person’s participation or action in the Bidding Process;
 - d) “undesirable practice” means (i) establishing contact with any person connected with or employed or engaged by the Authority-1/Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and
 - e) “restrictive practice” means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Bidding Process.

8 Pre-Bid Conference

- 8.1.1 Pre-Bid conferences of the Bidders shall be convened at the designated date, time and place. A maximum of two representatives of each Bidder shall be allowed to participate on production of authority letter from the Bidder.
- 8.1.2 The Bidders need to submit the pre-bid queries at least 2 working days before the scheduled Pre-bid meeting, in the following format as per the deadline mentioned in Clause 1.3 of the RFP.

#	RFP Document Reference (Section No., Clause No. Page No.)	Content of the RFP requiring clarification	Clarification Sought	Reason for Clarification/ Change

Note: Queries without proper reasoning will not be entertained. Reasons like 'company policy' and 'industry standard' will not be considered as proper reasons.

- 8.1.3 During the course of Pre-Bid conference(s), the Bidders will be not seek any clarifications apart from those raised as per clause 8.1.2. The Authority-1 shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Bidding Process.

9 Payment terms

9.1 Energy Savings and O&M payment

MCB will pay monthly share of quoted energy savings (monetary value) and monthly O&M as derived from quoted annual O&M to the Successful Bidder. The energy savings will assume to be same (60% of the baseline) for the energy saving payment throughout the duration of the concession period as deemed saving approach will be used to estimate the energy savings under this project.

For providing payment security and making payment to CONCESSIONAIRE, following options may be used based on the mutual agreement between the Authority and CONCESSIONAIRE;

- The payment can be routed through ESCROW account where funds are held until it receives the appropriate written instruction from MCB.
- The payment can be made based on the invoices raised by the CONCESSIONAIRE.

The Successful Bidder shall raise invoices for each part of each zone invoices and submit three copies of same (one each to ESCROW bank, one for Authority & MCB). Authority will review the invoice and approve the same after adjusting for applicable penalties, if any to MCB. The payment will be processed as per MCB's standard operation procedure. The ESCROW bank upon receipt of written approval of the invoice by MCB shall undertake use of the money deposited in the ESCROW account to pay against the Energy Savings Fee and O&M Fee. However, if written approval/clarifications of invoice is not received within 30 days of invoice submission then invoice will be assumed to be deemed approved and payment will be made to the Successful Bidder.

MCB shall deposit in the ESCROW account; an amount equal to three (3) month of electricity savings and three (3) month of O&M Fee as per year-wise amount quoted in this Bid, within 1 month of the signing of Energy Savings and Performance Contract (ESPC).

The Concessionaire shall also submit a consolidated report to Authority and MCB for each zone, immediately after the work is completed in that zone in a format as specified under clause 4.1.3 of this RFP. As mentioned in the clause 4.1.4 of this RFP, the Concessionaire will also be eligible to raise the invoice for the energy savings after complete installation in Four zones and for subsequent zones (i.e. 5th to 8th Zone), payment of energy saving would start only after total completion of remaining zones.

Authority will be responsible to take required actions to reduce the sanctioned load on each of the feeders after the LED lights installation. The payment to the Concessionaire shall not be affected due to any delay in reduction in the sanctioned load for various feeders by PSPCL.

The ESCROW account (held by ESCROW bank, MCB and Successful Bidder) will be opened in a reputable bank having branch in Bathinda which is acceptable to both MCB and the Successful Bidder. The Concessionaire shall borne the cost associated with opening and maintenance of ESCROW account.

⁶ ESCROW Bank means where ESCROW will be opened.

9.2 Infrastructure improvement payment

The Successful Bidder can raise the bill of the work done under the Infrastructure Improvement as per the Clause 4.1.1.19 after every 30 days for the work completed till that date. For the invoice submitted for Infrastructure Development, Nodal Officer will review the work and recommend for the payment to concessionaire Authority against the receipt of the bill.

10 Miscellaneous

- 10.1.1 The Bidding Process shall be governed by, and construed in accordance with, the laws of India and the Courts in Bathinda shall have exclusive jurisdiction over all disputes arising under, pursuant to and/ or in connection with the Bidding Process.
- 10.1.2 The Authority-1, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to;
- a) suspend and/ or cancel the Bidding Process and/ or amend and/ or supplement the Bidding Process or modify the dates or other terms and conditions relating thereto;
 - b) consult with any Bidder in order to receive clarification or further information;
 - c) retain any information and/ or evidence submitted to the Authority-1 by, on behalf of, and/ or in relation to any Bidder; and/ or
 - d) Independently verify, disqualify, reject and/ or accept any and all submissions or other information and/ or evidence submitted by or on behalf of any Bidder.

10.2 Performance Security

- 10.2.1 The accepted successful bidder shall pay 10% of Security Deposit in form of Contract Performance Bank Guarantee of the estimated project value within 15 days from the date of receipt of the order valid for a period of 08 years and 6 months of lodgment period.
- 10.2.2 Till such time the Concessionaire provides the Performance Security, the Bid Security shall remain in full force and effect.
- 10.2.3 In case the Successful Bidder fails to submit Performance Security within the time stipulated, the Authority-1 at its discretion may cancel the LOA placed on the Successful Bidder without giving any notice. Authority-1 shall invoke Performance Security in case the Successful Bidder fails to discharge their contractual obligations during the period or Authority incurs any loss due to Bidder's negligence in carrying out the project implementation as per the agreed terms & conditions.
- 10.2.4 The Performance Security should be issued by any scheduled bank as per the format provided in the Annexure III.

11 Exit Management

11.1 Purpose

- i. This clause sets out the provisions which shall apply on expiry or termination of the “Contract Agreement” on account of material breach by Concessionaire. In the case of termination of the Contract Agreement due to any illegal activity performed by the selected Concessionaire during/ as part of the activities related to the project, or due to material breach by the Concessionaire of Contract, Client shall have the right to, at its sole discretion, apply this clause.
- ii. The Parties shall ensure that their respective associated entities, in case of the Client or its nominated agencies and any nominated agencies in case of the selected Concessionaire, carry out their respective obligations set out in this Exit Management Clause.

11.2 Transfer of Assets

This clause is valid till the date of expiry or notice of termination of the Agreement after which the assets have to be transferred to Client.

- During this period, the Successful Concessionaire will transfer all the assets in normal working condition and as per the specifications of the bidding document including the ones being upgraded to the Client.
- The Concessionaire, if not already done, shall transfer all the right to use software licenses under the name of Client during the Exit Management Period. The Concessionaire shall also transfer all the relevant Software Passwords, User Names and Keys. If such a transfer of Assets happens before the expiry of Work Contract Period, Parties shall mutually discuss and agree on the transfer value of the Assets together with the termination and transfer assistance fee.
- The Successful Concessionaire shall be entitled to use the Assets for the duration of the exit management period which shall be three months from the date of expiry or notice of termination of the Agreement.
- For any material breach on the part of Concessionaire during the Project Implementation Phase and Operation & Management Phase, Client is entitled to provide notice in writing on the selected Concessionaire at any time during the exit management period as detailed here in above requiring the selected Concessionaire to provide the department or its nominated agencies with a complete and up to date list of the Assets within 30 days of such notice.

Upon service of a notice as mentioned in point above, the following provisions shall apply:

- All risk in and title to the Assets to be transferred to Client on the last day of the exit management period. All expenses incurred during transfer of assets shall be borne by the Successful Concessionaire.
- That on the expiry of this clause, the Successful Concessionaire and any individual assigned for the performance of the services under this clause must hand over all Confidential Information and all other related materials in its possession, including all the software and hardware supplied by selected Concessionaire under this clause to the department.

- As Concessionaire is supposed to provide comprehensive maintenance of all the hardware/Software as detailed in RFP during the concession period, Concessionaire must ensure that all the items are in working condition with support of OEM related to repair/replacement/availability of spare parts for at least 03 years at the time of exit.
- From the first day of last month of the concession period, testing phase of overall system installed by the Concessionaire will be started in phases and in agreement with MCB so that all the equipment are proved to be in working conditions and handed over to MCB on the last date of the concession period and before issuing completion certificate and PBG.

11.3 Cooperation and Provision of Information

During the exit management period:

- a) The Concessionaire shall permit Client or its nominated agencies access to information reasonably required to classify the current mode of operation related with the provision of the services to enable it to Client assess the existing services being delivered.
- b) In the event of there being a termination owing to material breach by Concessionaire, on quick request by Client or its nominated agencies, the selected Concessionaire shall provide access to and copies of all information held or controlled by it which it has prepared or maintained in accordance with the Concession Agreement. The Project Implementation, the Operation and Management SLA and SoW (Scope of Work) relating to any material aspect of the services (whether provided by the selected Concessionaire). Client or its nominated agencies shall be entitled to copy all such information. Such information shall include details pertaining to the services rendered and other performance data. The selected Concessionaire shall permit Client or its nominated agencies and/or any entity nominated by Client to have reasonable access to it employees and facilities as reasonably required to understand the methods of delivery of the services employed by the selected Concessionaire and to support appropriate knowledge transfer.

11.4 Confidential Information, Security and Data

- The selected Concessionaire shall be quick on the commencement of the exit management period and supply to Client the following:
 - Information relating to the present services provided and customer satisfaction surveys.
 - Documentation pertaining to Project related data and confidential information.
 - All current and updated data as is needed for purposes of the Client or its nominated agencies for transitioning the services either to Client or the entity nominated by Client.
 - All other information (including but not limited to documents, records and agreements) relating to the services reasonably compulsory to enable Client or its nominated agencies, or to the entity nominated by Client to carry out due diligence in order to transition the provision of the Services to the Client or its nominated agencies, or to any entity nominated by Client (as the case may be).
- Before the exit management period expire, the selected Concessionaire shall deliver to Client or its nominated agencies all new or up-dated materials from the categories set out in

point (i) above and shall not keep any copies thereof, except that the selected Concessionaire shall be permitted to keep one copy of such materials for archival purposes only.

- Before the exit management period expires, unless otherwise provided under the Concessionaire Agreement, Client or its nominated agencies shall deliver to the selected Concessionaire all forms of selected Concessionaire confidential Data which is in the possession or control of Client or its nominated agencies or during the exit management period. In any time, the selected Concessionaire shall, subject to applicable laws, restraints and regulations (including in particular those relating to privacy) provide to Client or its nominated agencies a list of all employees (with job titles) of the selected Concessionaire dedicated to providing the services at the beginning of the exit management period; its users.

11.5 Employees

- Where any national, regional law or regulation relating to the mandatory or automatic transfer of the contracts of employment from the selected Concessionaire to the department or its nominees, or an entity nominated by Client applies to any or all of the employees of the selected Concessionaire, then the Parties shall comply with their respective obligations under such Transfer Regulations.
- To the extent that any Transfer Regulation does not apply to any employee of the selected Concessionaire or its nominated agencies or its entity nominated by Client may make an offer of employment or contract for services to such employee of the selected Concessionaire and the selected Concessionaire shall not enforce or impose any contractual provision that would prevent any such employee from being hired by the Client or its nominated agencies or any Replacement Concessionaire.

11.6 Transfer of Certain Agreements

On request by the Client or its nominated agencies, the selected Concessionaire shall effect such assignments, transfers, novation, licenses and sub-licenses in favor of Client or its nominated agencies, or its entity nominated by Client in relation to any equipment lease, maintenance or service provision agreement between selected Concessionaire and third party lessors, Concessionaires or Concessionaire, and which are related to the services and reasonably necessary for the carrying out of replacement Concessionaire.

11.7 Right of Access to Premises

- At any time during the exit management period, where Assets are located at the selected Concessionaire's premises, the selected Concessionaire shall be obliged to give full rights of access to (or, in the case of Assets located on a third party's premises, procure reasonable rights of access to Client or its nominated agencies, and/or any entity nominated by Client in order to inventory the assets or Assets).
- The selected Concessionaire shall also give the Client or its nominated agencies, or any entity nominated by Client right of reasonable access to the selected Concessionaire's premises and shall procure the department or its nominated agencies and any entity nominated by Client rights of access to relevant third party premises during the exit management period and for such period of time following termination or expiry of the

Concession Agreement as is reasonably necessary to migrate the services to Client or its nominated agencies, or a Replacement Concessionaire.

11.8 General Obligations of the Selected Concessionaire

- The selected Concessionaire shall provide all such information as may reasonably be necessary to effect as seamless a handover as practicable in the circumstances to Client or its nominated agencies or any entity nominated by the Client and which the selected Concessionaire has in its possession or control at any time during the exit management period.
- For the purposes of this Clause, anything in the possession or control of any selected Concessionaire or associated entity is deemed to be in the possession or control of the selected Concessionaire.
- The selected Concessionaire shall commit adequate resources to comply with its obligations under this Exit Management Clause.

11.9 Exit Management Plan

The Successful Concessionaire shall provide the Client or its nominated agencies with recommended exit management plan ("Exit Management Plan") which shall deal with Concession Agreement as a whole and in relation to the Project Implementation, the Operation and Management SLA and SOWs.

11.10 End of Support

While handling over the completely working and functional network and systems, Concessionaire must ensure that OEM of all hardware/software/ equipment are contractually bound to provide support for repair/replacement/availability of its spare parts for further five years. It shall be part of exit plan to submit letter from OEMs in this regard.

12 Annexures

12.1 Annexure I: Technical Bid Templates

- a) The Concessionaire is expected to respond to the RFP using the forms given in this section and all documents supporting Technical Evaluation Criteria.
- b) Technical Proposal shall comprise following forms:
 - i. Form 1: Technical Proposal Covering Letter
 - ii. Form 2: Power of Attorney
 - iii. Form 3: Undertaking on Total Responsibility
 - iv. Form 4: Particulars of the Concessionaire
 - v. Form 5: Bank Guarantee for Earnest Money Deposit
 - vi. Form 6: Project Citation Format
 - vii. Form 7: Proposed Implementation Work plan
 - viii. Form 8: Team Structure
 - ix. Form 9: Manufacturers/Producers' Authorization Form
 - x. Form 10: Undertaking on Service Level Compliance
 - xi. Form 11: Undertaking on Exit Management and Transition
 - xii. Form 12: Declaration for opening of office in Bathinda
 - xiii. Form 13: Declaration that the Concessionaire has not been blacklisted
 - xiv. Form 14: Format of Agreement between Bidder and their parent company / subsidiary company (As the case may be)
 - xv. Form 15: Parent company / subsidiary company Guarantee (Delete whichever not applicable)

Form 1: Technical Proposal Covering Letter

Place:

Date:

To,
Corporation Engineer
Municipal Corporation, Bathinda

Ref: "Selection of Concessionaire for Implementing Smart LED Street Lights and Centralized Control & Monitoring System for Bathinda on ESCO (pay from savings) model".

Bid Reference No:

Sub: Technical Proposal covering Letter

Dear Sir,

We, the undersigned, offer to provide the services for [Insert Title of the Assignment] in accordance with your Request for Proposal dated [Insert Date]. Our attached Technical Proposal is based on our full understanding of scope of work, requirements, terms & Conditions and we unequivocally accept the same and shall be binding as mentioned in the RFP.

To undertake the project for a period including implementation phase of 12 months and 10 years of O&M.

Yours sincerely,

Signature:

Name:

Designation:

Address:

Date:

Company Seal:

Form 2: Power of Attorney

Form 2A: Power of Attorney for signing of bid

It is clarified that the Bidder may submit the Power of Attorney in their own format clearly stating that the person is authorized to sign on behalf of the bidder. It is also clarified that the "Letter of Authorization" is to be read as "Power of Attorney".

[To be executed on stamp paper of appropriate value]

Power of Attorney

Know all men by these presents, We, [Insert full legal name of the bidding entity], having registered office at [Insert registered office address] (hereinafter referred to as the "Principal") do hereby constitute, nominate, appoint and authorize [Insert full name of authorized signatory] son of [Insert father's name] presently residing at [Insert address of authorized signatory] who is presently employed with us and holding the position of [Insert position / designation of the authorized signatory] as our true and lawful attorney (hereinafter referred to as the "Authorized Attorney") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to the submission of our proposal in response to the RFP bearing number _____ for Selection of Concessionaire for Implementing Smart LED Street Lights and Centralized Control & Monitoring System for Bathinda on ESCO (pay from savings) model (the "Project"), on as is and where is basis, and for implementing necessary augmentations in the Infrastructure while ensuring uninterrupted IT operations' dated _____, including but not limited to signing and submission of all applications, proposals and other documents and writings, participating in pre-Bid and other conferences and providing information/ responses to the CEO of Bathinda Smart City Limited, representing us in all matters before the MCB, signing and execution of all contracts and undertakings/declarations consequent to acceptance of our Proposal and generally dealing with the MCB in all matters in connection with or relating to or arising out of our Proposal for the said assignment and/or upon award thereof to us till the execution of appropriate Agreement/s with the MCB.

AND, we do hereby agree to ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Authorized Attorney pursuant to and in exercise of the powers conferred by this deed of Power of Attorney and that all acts, deeds and things done by our said Authorized Attorney in exercise of the powers hereby conferred shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, _____ THE ABOVE
NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS DAY OF
....., 2018

For _____
(Signature, name, designation and address)
[Please put company seal if required]

[Notarize the signatures]

Witnesses:

1.
(Signature, name, designation and address)
2.
(Signature, name, designation and address)

Accepted by:

(Signature, name, designation and address of the Authorized Attorney)

[Notarize the signatures]

Form 2B: Power of Attorney for Lead Member of the Consortium

(On Non – judicial stamp paper of Rs 100 duly attested by notary public)

POWER OF ATTORNEY

Whereas the Authority-1 has invited applications from interested parties for Selection of Concessionaire for Implementing Smart LED Street Lights and Centralized Control & Monitoring System for Bathinda on ESCO (pay from savings) model called the “Project” for a specified Concession period (the “Concession Period”).

Whereas, M/s _____ M/s _____, and M/s _____ (the respective names of the Members along with address of their registered offices) have formed a Consortium and are interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of the Request for Proposal (RFP), Concession Agreement and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP for the members of the Consortium to designate one of them as the Lead Member and its said employees, as with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium’s bid for the Project and to appoint one of them as the Lead Member who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection with the Consortium’s bid for the Project. The Lead Member is hereby authorized to delegate the said powers to any of its employees duly approved by the Board of Directors of the Lead Member.

NOW THIS POWER OF ATTORNEY WITNESSETH THAT:

We, M/s _____ M/s _____, and M/s _____ (the respective names of the Members along with address of their registered offices) do hereby designate M/s (name along with address of the registered office) being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deed or things necessary or incidental to the Consortium’s bid for the Project, including submission of Bid, participating in conference, responding to queries, submission of information / documents and generally to represent the Consortium in all its dealings with , any other Government Agency or any person, in connection with Project until culmination of the process of bidding and thereafter till the Concession Agreement is entered into with _____.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead Member our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney, shall be deemed to have been done by us

Dated this _____ day of 200__.

[Executant(s)]

(To be executed by all the members in the Consortium)

- The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law.
- Also wherever required, the executant(s) should submit for verification the certified documents such as resolution/ Power of attorney in favour of the person executing this Power of attorney for the designation of power hereunder on behalf of the Bidder.

Form 3: Undertaking on Total Responsibility

No.

Date

To:

Dear Sir,

Sub: Self certificate regarding Total Responsibility

This is to certify that we undertake total responsibility for the successful and defect free operation of the proposed Project solution, as per the requirements of the RFP for Bathinda Smart City Ltd Project.

Thanking you,

Yours faithfully

(Signature of the Authorized signatory of the Bidding Organisation)

Name :

Designation :

Date :

Time :

Seal :

Business Address :

Form 4: Particulars of the Concessionaire

[In case of Consortium, all members of the Consortium need to fill this form]

#	Information Sought	Details to be Furnished
1.	Name and address of the bidding	
2.	Incorporation status of the firm (public limited/private limited, etc.)	
3.	Year of Establishment	
4.	Date of registration	
5.	ROC Reference No.	
6.	Details of company registration	
7.	Details of registration with appropriate authorities for service tax	
8.	Turnover in the last 3 years	<ul style="list-style-type: none">• 2017-18• 2016-17• 2015-16
9.	Name, Address, email, Phone nos. and Mobile Number of 3 Contact Persons	

Form 5: Bank Guarantee for Earnest Money Deposit

To,

Corporation Engineer
Municipal Corporation, Bathinda

Whereas <Name of the Concessionaire> (hereinafter called 'the Concessionaire') has submitted the bid for Submission of RFP # <RFP Number> dated <Date> for Selection of Concessionaire for Implementing Smart LED Street Lights and Centralized Control & Monitoring System for Bathinda on ESCO (pay from savings) model (hereinafter called "the Bid") to Bathinda Smart City Ltd

Know all Men by these presents that we <bank name > having our office at <Address> (hereinafter called "the Bank") are bound unto the Bathinda Smart City Ltd (hereinafter called "the Purchaser") in the sum of INR <Amount in figures> (Rupees <Amount in words> only) for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this <Date>

The conditions of this obligation are:

1. If the Concessionaire having its bid withdrawn during the period of bid validity specified by the Concessionaire on the Bid Form; or
2. If the Concessionaire, having been notified of the acceptance of its bid by the Purchaser during the period of validity of bid
 - a) Withdraws his participation from the bid during the period of validity of bid document; or
 - b) Fails or refuses to participate in the subsequent Tender process after having been short listed;

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to <insert date> and including <extra time over and above mandated in the RFP> from the last date of submission and any demand in respect thereof should reach the Bank not later than the above date.

NOTWITHSTANDING ANYTHING CONTAINED HEREIN:

- I. Our liability under this Bank Guarantee shall not exceed INR <Amount in figures> (Rupees <Amount in words> only)
- II. This Bank Guarantee shall be valid up to <insert date>)
- III. It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this Bank Guarantee that we receive a valid written claim or demand for

payment under this Bank Guarantee on or before <insert date>) failing which our liability under the guarantee will automatically cease.

(Authorized Signatory of the Bank)

Seal:

Date:

Form 6: Project Citation Format

General Information	
Name of the project	
Client for which the project was executed	
Name and contact details of the client	
Project Details	
Description of the project	
Scope of services	
Number of Street lights	
Status of the project	
Other Details	
Total cost of the project	
Total cost of the services provided by the Concessionaire	
Duration of the project (no. of months, start date, completion date, current status)	
Other Relevant Information	
Letter from the client to indicate the successful completion/status of the projects	

Form 8: Team Structure

Organizational layout of the team proposed to execute this assignment

Form 9: Manufacturers/Producers' Authorization Form

(This form has to be provided by the OEMs of the products proposed)

No.:

Date:

To:

OEM Authorization Letter

Dear Sir:

Ref: Your RFP Ref: dated

We who are established and reputable manufacturers/producers of having factories/development facilities at (address of factory/facility) do hereby authorize M/s (Name and address of Agent) to submit a Bid, and sign the contract with you against the above Bid Invitation.

We hereby extend our full guarantee and warranty for the Solution, Products and services offered by the above firm against this Bid Invitation.

We hereby declare that we are not insolvent, in receivership, bankrupt or being wound up, our affairs are not being administered by a court or a judicial officer, our business activities have not been suspended and we are not the subject of legal proceedings for any of the foregoing.

We also undertake to provide any or all of the following materials, notifications, and information pertaining to the Products manufactured or distributed by the Supplier:

- a) Such Products as the Bank may opt to purchase from the Supplier, provided, that this option shall not relieve the Supplier of any warranty obligations under the Contract; and in the event of termination of production of such Products:
 - i. advance notification to the Bank of the pending termination, in sufficient time to permit the Bank to procure needed requirements; and
 - ii. Following such termination, furnishing at no cost to the Bank, the blueprints, design documents, operations manuals, standards, source codes and specifications of the Products, if requested.

We duly authorize the said firm to act on our behalf in fulfilling all installations, Technical support and maintenance obligations required by the contract.

Yours faithfully,

(Name)

(Name of Producers)

Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. The Concessionaire in its Bid should include it.

Form 10 : Undertaking on Service Level Compliance

No.

Date:

To,

Corporation Engineer
Municipal Corporation, Bathinda

Dear Sir,

Subject: Undertaking on Service Level Compliance

1. I/We as Concessionaire do hereby undertake that we shall monitor, maintain, and comply with the service levels stated in the RFP to provide quality service to MCB.

Yours faithfully,

(Signature of the Authorized signatory of the Bidding Organisation)

Name :

Designation :

Date :

Time :

Seal :

Business Address :

Form 11: Undertaking on Exit Management and Transition

No.

Date:

To,

Corporation Engineer
Municipal Corporation, Bathinda

Dear Sir,

Subject: Undertaking on Exit Management and Transition

1. I/We hereby undertake that at the time of completion of our engagement with the Department, either at the End of Contract or termination of Contract before planned Contract Period for any reason, we shall successfully carry out the exit management and transition of this Project to the MCB or to an agency identified by MCB to the satisfaction of the Department. I/We further undertake to complete the following as part of the Exit management and transition:
 - a) We undertake to complete the updation of all Project documents and other artifacts and handover the same to MCB before transition.
 - b) We undertake to design standard operating procedures to manage system (including application and IT systems), document the same and train MCB personnel on the same.
 - c) If Department decides to take over the operations and maintenance of the Project on its own or identifies or selects any other agency for providing operations & maintenance services on this Project, then we shall provide necessary handholding and transition support, which shall include but not be limited to, conducting detailed walkthrough and demonstrations for the IT Infrastructure, handing over all relevant documentation, addressing the queries/clarifications of the new agency with respect to the working/performance levels of the infrastructure, conducting Training sessions etc.
2. I/We also understand that the Exit management and transition will be considered complete on the basis of approval from MCB.

Yours faithfully,

(Signature of the Authorized signatory of the Bidding Organisation)

Name :

Designation :

Date :

Time :

Seal :

Business Address :

Form 12: Declaration for opening of office in Bathinda

Place:

Date:

To,

Corporation Engineer
Municipal Corporation, Bathinda

Ref: "Selection of Concessionaire for Implementing Smart LED Street Lights and Centralized Control & Monitoring Centre for Bathinda on ESCO (pay from savings) model".

Bid Reference No:

Sub: Undertaking to Open an Office in Bathinda

Dear Sir,

We here by undertake that:

We shall open an office in Bathinda within 1 month in case we are declared successful in the bidding Process.

We have carefully read and understood the entire tender document. We do agree to all the terms and conditions mentioned in the RFP.

Yours faithfully,

Signature:

Name:

Designation:

Address:

Date:

Company Seal

Form 14: Format of Agreement between Bidder and their parent company / subsidiary company (As the case may be)

(TO BE EXECUTED ON STAMP PAPER OF REQUISITE VALUE AND NOTORISED)

This agreement made this _____ day of _____ month _____ year by and between M/s. _____ (Fill in the Bidder's full name, constitution and registered office address) hereinafter referred to as bidder on the first part and M/s. _____ (Fill in full name, constitution and registered office address of Parent Company/Subsidiary Company, as the case may be) hereinafter referred to as "Parent Company/ Subsidiary Company (Delete whichever not applicable)" of the other part:

WHEREAS

Municipal Corporation, Bathinda (hereinafter referred to as MCB) has invited offers vide their tender No. _____ for _____ and

M/s. _____ (Bidder) intends to bid against the said tender and desires to have technical support of M/s. _____ [Parent Company/ Subsidiary Company (Delete whichever not applicable)] and whereas Parent Company/ Subsidiary Company (Delete whichever not applicable) represents that they have gone through and understood the requirements of subject tender and are capable and committed to provide the services as required by the bidder for successful execution of the contract, if awarded to the bidder.

Now, it is hereby agreed to by and between the parties as follows:

1. M/s. _____ (Bidder) will submit an offer to MCB for the full scope of work as envisaged in the tender document as a main bidder and liaise with MCB directly for any clarifications etc. in this context.

2. M/s. _____ (Parent Company/ Subsidiary Company (Delete whichever not applicable) undertakes to provide technical support and expertise, expert manpower and procurement assistance and project management to support the bidder to discharge its obligations as per the Scope of work of the tender / Contract for which offer has been made by the Parent Company/Subsidiary Company (Delete whichever not applicable) and accepted by the bidder.

3. This agreement will remain valid till validity of bidder's offer to MCB including extension if any and till satisfactory performance of the contract in the event the contract is awarded by MCB to the bidder.

4. It is further agreed that for the performance of work during contract period bidder and Parent Company/Subsidiary Company (Delete whichever not applicable) shall be jointly and severally responsible to MCB for satisfactory execution of the contract.

5. However, the bidder shall have the overall responsibility of satisfactory execution of the contract awarded by MCB.

In witness whereof the parties hereto have executed this agreement on the date mentioned above.

For and on behalf of _____ (Bidder)	For and on behalf of _____ (Parent/subsidiary company)
Signature: Name: Designation:	Signature: Name: Designation:
Witness 1:	Witness 1:
Signature: Full name: Address:	Signature: Full name: Address:
Witness 2:	Witness 2:
Signature: Full name: Address:	Signature: Full name: Address:

Form 15: Parent company / subsidiary company Guarantee (Delete whichever not applicable)

(TO BE EXECUTED ON STAMP PAPER OF REQUISITE VALUE AND NOTORISED)

DEED OF GUARANTEE

THIS DEED OF GUARANTEE executed at this day of by M/s (mention complete name) a company duly organized and existing under the laws of (insert jurisdiction/country), having its Registered Office at hereinafter called "the Guarantor" which expression shall, unless excluded by or repugnant to the subject or context thereof, be deemed to include its successors and permitted assigns.

WHEREAS

Municipal Corporation, Bathinda, a statutory body under _____, having its Registered Office at _____, hereinafter called "MCB" which expression shall unless excluded by or repugnant to the context thereof, be deemed to include its successor and assigns, invited tender number for on

M/s (mention complete name), a company duly organized and existing under the laws of (insert jurisdiction/country), having its Registered Office at (give complete address) hereinafter called "the Company" which expression shall, unless excluded by or repugnant to the subject or context thereof, be deemed to include its successor and permitted assigns, have, in response to the above mentioned tender invited by MCB, submitted their bid number to MCB with one of the condition that the Company shall arrange a guarantee from its parent company guaranteeing due and satisfactory performance of the work covered under the said tender including any change therein as may be deemed appropriate by MCB at any stage.

The Guarantor represents that they have gone through and understood the requirement of the above said tender and are capable of and committed to provide technical and such other supports as may be required by the Company for successful execution of the same.

The Company and the Guarantor have entered into an agreement dated as per which the Guarantor shall be providing technical and such other supports as may be necessary for performance of the work relating to the said tender.

Accordingly, at the request of the Company and in consideration of and as a requirement for MCB to enter into agreement(s) with the Company, the Guarantor hereby agrees to give this guarantee and undertakes as follows:

1. The Guarantor (Parent Company / 100% Subsidiary Company (Delete whichever not applicable) unconditionally agrees that in case of non-performance by the Company of any of its obligations in any respect, the Guarantor shall, immediately on receipt of notice of demand by MCB, take up the job without any demur or objection, in continuation and without loss of time and without any cost to MCB and duly perform the obligations of the Company to the satisfaction of MCB.

2. The Guarantor agrees that the Guarantee herein contained shall remain valid and enforceable till the satisfactory execution and completion of the work (including discharge of the warranty obligations) awarded to the Company.

3. The Guarantor shall be jointly with the Company and also severally responsible for satisfactory performance of the contract entered between the Company and MCB.

4. The liability of the Guarantor, under the Guarantee, is limited to the 50% of the annualized contract price entered between the Company and MCB. This will, however, be in addition to the forfeiture of the Performance Bank Guarantee furnished by the Company.

5. The Guarantor represents that this Guarantee has been issued after due observance of the appropriate laws in force in India. The Guarantor hereby undertakes that the Guarantor shall obtain and maintain in full force and effect all the governmental and other approvals and consents that are necessary and do all other acts and things necessary or desirable in connection therewith or for the due performance of the Guarantor's obligations hereunder.

6. The Guarantor also agrees that this Guarantee shall be governed and construed in accordance with the laws in force in India and subject to the exclusive jurisdiction of the courts of, India.

7. The Guarantor hereby declares and represents that this Guarantee has been given without any undue influence or coercion, and that the Guarantor has fully understood the implications of the same.

8. The Guarantor hereby agrees that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made

between MCB and the Bidder Company shall in any way release Guarantor from any liability under this guarantee and Guarantor hereby waive notice of any such change, addition or modification.

9. The Guarantor represents and confirms that the Guarantor has the legal capacity, power and authority to issue this Guarantee and that giving of this Guarantee and the performance and observations of the obligations hereunder do not contravene any existing laws.

For and on behalf of _____ (name of the Parent Company/Subsidiary company)

Signature: _____

Name: _____

Designation: _____

Common seal of the guarantor company :

Witness 1:

Signature: _____

Full Name: _____

Address: _____

Witness 2:

Signature: _____

Full Name: _____

Address: _____

INSTRUCTIONS FOR FURNISHING PARENT /SUBSIDIARY COMPANY GUARANTEE

1. Guarantee should be executed on stamp paper of requisite value and notarised.
2. The official(s) executing the guarantee should affix full signature (s) on each page.
3. Resolution passed by Board of Directors of the guarantor company authorizing the signatory (ies) to execute the guarantee, duly certified by the Company Secretary should be furnished along with the Guarantee.
4. Following certificate issued by Company Secretary of the guarantor company should also be enclosed along with the Guarantee.

“Obligation contained in the deed of guarantee No. _____ furnished against tender No. _____ are enforceable against the guarantor company and the same do not, in any way, contravene any law of the country of which the guarantor company is the subject”

12.2 Annexure II: Financial Proposal Template

Form 1: Covering Letter

To,

Corporation Engineer
Municipal Corporation, Bathinda

Subject:

Dear Sir,

We, the undersigned, offer to provide the Implementation services for Implementing Smart LED Street Lights and Centralized Control & Monitoring Centre for Bathinda on ESCO (pay from savings) model in accordance with your Request for Proposal dated <Date> and our Proposal (Technical and Financial Proposals). Our attached Financial Proposal is for the sum of <Amount in words and figures>. This amount is inclusive of the local taxes.

1. Price & Validity

- All the prices mentioned in our Tender are in accordance with the terms as specified in the RFP documents. All the prices and other terms and conditions of this Bid are valid for a period of 180 days from the date of submission of Bid.
- We hereby confirm that our prices include all taxes. However, all the taxes are quoted separately under relevant sections.
- We understand that the actual payment would be made as per the existing indirect tax rates during the time of payment.

2. Unit Rates

We have indicated in the relevant forms enclosed, the unit rates for the purpose of on account of payment as well as for price adjustment in case of any increase to/decrease from the scope of work under the contract.

3. Deviations

We declare that all the services shall be performed strictly in accordance with the Tender documents except for the variations and deviations, all of which have been detailed out exhaustively in the following statement, irrespective of whatever has been stated to the contrary anywhere else in our bid.

Further we agree that additional conditions, if any, found in the Tender documents, other than those stated in deviation schedule, shall not be given effect to.

4. Tender Pricing

We further confirm that the prices stated in our bid are in accordance with your Instruction to Concessionaire included in Tender documents.

5. Qualifying Data

We confirm having submitted the information as required by you in your Instruction to Concessionaire. In case you require any other further information/documentary proof in this regard before evaluation of our Tender, we agree to furnish the same in time to your satisfaction.

6. Bid Price

We declare that our Bid Price is for the entire scope of the work as specified in the RFP. These prices are indicated Commercial Bid attached with our Tender as part of the Tender.

7. Bank Guarantee

We hereby declare that in case the contract is awarded to us, we shall submit the Bank Guarantee as per Annexure III of the RFP document.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e., [Date].

We understand you are not bound to accept any Proposal you receive.

We hereby declare that our Tender is made in good faith, without collusion or fraud and the information contained in the Tender is true and correct to the best of our knowledge and belief.

We understand that our Tender is binding on us and that you are not bound to accept a Tender you receive.

Thanking you,

We remain,

Yours sincerely,

Authorized Signature :

Name and Title of Signatory :

Name of Firm :

Address :

Form 2 Financial Bid Format

As detailed out in tender evaluation criteria, MCB invites Bidders to provide quotes for following three parameters:

- Sharing of monetized energy savings
- Annual O&M expenses
- Buy-back of dismantled luminaires
- Service tax (Presently@15%) will be paid extra wherever applicable

Kindly provide quote on-line as per following format:

1. Quote for sharing of monetized energy savings between MCB and Bidder as per Task -1 of scope of work:

Sharing of monetized energy savings	
MCB Share in %	Bidder's Share in %

Note: Minimum sharing of MCB should be 10%.
(the sum of above two columns will necessarily be 100%)

2. Quote for annual operation and maintenance of LED luminaires (Including LED, Driver and Luminaire) & CCMS expenses as per Section 4.

Quote for O&M expenses/LED luminaire/year		
Year	Amount (in figures)	Amount (in words)
1		
2		
3		
4		
5		
6		
7		
8		

Note: 1. The Net Present Value (NPV) of annual O&M costs will be calculated assuming a discount factor of 10%.

2. The quote for O&M for contract period should be same or in increasing trend basis [from 1st (starting year of the concession period for O&M) to the last year of the concession period]. If any bidder loads the cost of O&M in the initial year(s) which is neither same for all years nor in increasing order, the bidder shall be disqualified.

3. Quote for buy-back of dismantled Luminaires

Sr.No.	Type of luminaire (existing)	Wattage (W)	Numbers (Approx)	Buy-Back amount/luminaire (In Figures)	Buy-Back amount/luminaire (In words)
1	FTL	36	527		
2	LED	40	218		
3	LED	60	300		
4	LED	90	286		
5	LED	120	26		
6	CFL	45	236		
7	CFL Park	20	232		
8	T-5 (4 *14W)	56	324		
9	FTL	40	13068		
10	HPSV	70	2957		
11	HPSV	150	3681		
12	HPSV	250	1142		
13	Lamp	100	257		
			23254		

Note:

1. The quoted rates online in the Price Bid shall be inclusive of all taxes, duties, etc except service tax and no claim in this context shall be entertained. Bidders shall not be paid any extra amount due to increase in any type of Government Taxes including excise duty during implementation of contract. Any variations in taxes etc. shall be borne by the Bidder.
2. The bidder should quote in a way that the total payout (reduced energy bill on street lighting + energy saving and O&M payment to Concessionaire) of MCB in the first complete year after the completion of the project should not exceed Rs. 7.98 crores. The total payout can increase if there is an increase in number of light points (23,254) mentioned in this RFP or there is increase in tariff above Rs. (Fixed Charges@ INR 90/- per KW per Month+ Variable Charges@ INR 7.35/- Per KWH) for street lighting or there is increase in number of operating hours (above 10 hours).

12.3 Annexure III: Template for Bank Guarantee

To,

Commissioner,
Municipal Corporation, Bathinda

Whereas, <name of the supplier and address> (hereinafter called “the Concessionaire”) has undertaken, in pursuance of contract no. <Insert Contract No.> dated. <Date> to provide Implementation services for ‘Selection of Concessionaire for Implementing Smart LED Street Lights and Centralized Control & Monitoring Centre for Bathinda on ESCO (pay from savings) model’ to Bathinda Smart City Ltd (hereinafter called “the beneficiary”)

And whereas it has been stipulated by in the said contract that the Concessionaire shall furnish you with a bank guarantee by a recognized bank for the sum specified therein as security for compliance with its obligations in accordance with the contract;

And whereas we, <Name of Bank> a banking company incorporated and having its head /registered office at <Address of Registered Office> and having one of its office at <Address of Local Office> have agreed to give the supplier such a bank guarantee.

Now, therefore, we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of INR <Insert Value> (Rupees <Insert Value in Words> only) and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of INR <Insert Value> (Rupees <Insert Value in Words> only) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Concessionaire before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the Concessionaire shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This Guarantee shall be valid until <Insert Date>)

Notwithstanding anything contained herein:

- I. Our liability under this bank guarantee shall not exceed INR. <Insert Value> (Rupees <Insert Value in Words> only).
- II. This bank guarantee shall be valid up to <Insert Expiry Date>)
- III. It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this bank guarantee that we receive a valid written claim or demand for payment under this bank guarantee on or before <Insert Expiry Date>) failing which our liability under the guarantee will automatically cease.

(Authorized Signatory of the Bank)

Seal:

Date :

12.4 Annexure IV: Checklist

Following is the check list for Concessionaire's reference;

#	Particulars	Included in the Proposal Yes/No
Annexure 1		
1.	Form 1: Technical Proposal Covering Letter	
2.	Form 2: Power of Attorney	
3.	Form 3: Undertaking on Total Responsibility	
4.	Form 4: Particulars of the Concessionaire	
5.	Form 5: Bank Guarantee for Earnest Money Deposit	
6.	Form 6: Project Citation Format	
7.	Form 7: Proposed Implementation Work Plan	
8.	Form 8: Team Structure	
9.	Form 9: Manufacturers Authorisation Form	
10.	Form 10: Undertaking on Service Level Compliance	
11.	Form 11: Undertaking on Exit Management & Transition	
12.	Form 12: Declaration of opening office in Bathinda	
13.	Form 13: Declaration that concessionaire has not been blacklisted	
14.	Form 14: Format of Agreement Between Bidder and their parent company / subsidiary company (As the case may be)	
15.	Form 15: Parent company / subsidiary company Guarantee (Delete whichever not applicable)	
Annexure II		
16.	Form 1: Covering Letter	
17.	Form 2: Financial Bid Format	
Annexure III		
18.	Form 1: Bank Guarantee	

12.5 Annexure V: Format of MoU for JV/Consortium arrangement

Format of MoU for JV/Consortium Arrangement

MEMORANDUM OF UNDERSTANDING

Between

[First Member]

And

[Second Member]

(For Implementing Street Lighting Project in Bathinda)

THIS MEMORANDUM OF UNDERSTANDING (hereinafter called "MOU") made and entered into this ----- day of the month of -----2018, by and among:

[Name & complete address of First/Leading Member] (hereinafter called "*[short name/acronym]*"), which expression shall include its successors, legal representatives and permitted assigns;

[Name and complete address of Second Member+] (hereinafter called the "*[short name/acronym]*"), which expression shall include its successors, legal representatives and permitted assigns;

(Both of the above for the purpose of this MOU shall hereinafter individually called the "Member" and collectively called the "Members")

WHEREAS,

(a) ***[Name of the Client]*** represented by ***[Name of the person/officer]*** (hereinafter called the "Client") has invited through ***[Mention the title of invitation]*** published in daily ***[Insert name of newspaper]*** dated ***[Insert date]*** to submit proposal for implementing street lighting project in Bathinda (hereinafter called the "Services") for ***[Name of the project]*** (hereinafter called the "Project");

(b) the Members hereby intend to join hands to form an unincorporated association for the sole purpose of, preparation and submission of joint proposal as required to be submitted to the Client for carrying out the Services for the Project. In case of acceptance of proposal by the Client, the members shall perform the Services as shall be agreed through Joint Venture/ Consortium [Use which is appropriate] and the contract to be entered between the Joint Venture/Consortium.

NOW, T HEREFOR E, the Members confirm their understanding (hereinafter called the “Association”) as follows:

1. DEFINITIONS AND INTERPRETATION

1.2 Definitions

The following words and expressions shall have the meanings assigned to them, except where the context otherwise requires:

1.1.1 “Association” means the understanding formed between the Members in accordance with this MOU;

1.1.2 “Client” means the person, firm, company or body named as client in the Joint Venture/ Consortium Agreement and none other, except its legal successors and permitted assigns;

1.1.3 “Contract” means the Contract between the Client and the Consortium for the provisions of professional services for the Project;

1.1.4 "Country" means *State the name of the “Country”+ where the Project is located;

1.1.5 “Consortium” means the consortium to be formed between the Members for the Project;

1.1.6 "Consortium Agreement” means the formal agreement to be entered between the Consortium Members, upon acceptance of proposal for the Project;

1.1.7 "Proposal" means the proposal to be prepared and submitted by the Members in response to the Invitation, by the Client;

1.1.8 "Services" means all the services to be performed by the Members in accordance with the Proposal or Contract, as the case may be;

1.1.9 “Representative” means the person nominated by the Members(s) of the Consortium through Power of Attorney to sign the Proposal and the Contract on behalf of and in the name of that Member. The signature of Representative shall bind each Member in respect of all obligations and liabilities it assumes under the Joint Venture /Consortium Agreement.

1.1.10 “Leading Member” means the Member which will take the lead in the management of the Association’s affairs under this MOU and which will provide the Association’s Representative for liaison with the Client and, unless otherwise agreed by the Members, the Services Manager for direction of the conduct of the Services;

1.1.11 “Day” means the period between any one midnight and the next, and “month” means a period of one month according to the Gregorian calendar commencing with any day in the month; and

1.1.12 “Document” means written, drawn, typed, printed, magnetized or photographic material which is capable of being copied.

1.2 Interpretation

1.2.1 Words importing the singular also include the plural and the masculine includes the feminine and vice-versa where the context requires.

1.2.2 The headings in this MOU shall not be taken into consideration in its interpretation.

1.2.3 Unless otherwise stated, all references to clauses/sub-clauses are references to clauses/sub-clauses numbered in the Conditions and Terms of this MOU and not to those in any other document attached or incorporated by them.

2. ASSOCIATION/UNDERSTANDING

2.1 The Members hereby intend to join hands to form an unincorporated association for the purpose of:

- preparing and submitting the Proposal to the Client;
- providing any further information, the Client may require or negotiating with the Client on any matters requiring negotiation in connection with the Proposal;
- entering into a formal Joint Venture /Consortium Agreement, stipulating in detail the relations between the Members on the basis of this MOU and in accordance with the Services Agreement with the Client, if the Proposal is accepted; the Services shall be rendered jointly by the Members in accordance with a Joint Venture /Consortium Agreement to be signed by the Members.

The Joint Venture /Consortium Agreement shall be signed prior to commencing the Services and shall be based upon the terms of the Contract signed between the Joint Venture /Consortium and the Client; and

- performing all the Services to be undertaken for the project by the Joint Venture /Consortium under the Services Agreement.

2.2 The Members hereby appoint the Leading Member and, pursuant to Clause 3.6, the representative of the Association.

2.3 Unless otherwise agreed in writing by the Members, this MOU shall not terminate if a Member changes its name or is taken over by, or merged with, another company or partnership provided that such successor name, company or partnership is an independent professional firm acceptable to the Client.

3. PROPOSAL SUBMISSION

3.1 The Members shall make all reasonable endeavours to obtain from the Client the award of the Services Agreement in accordance with the conditions of the Invitation.

3.2 The preparation and submission of the Proposal shall be undertaken jointly by the Members. The Members shall be required to provide their respective information and document on the required format to the Leading Member. The Leading Member shall co-ordinate and finalize the preparation of the Proposal and its submission to the Client. The

Members shall cooperate with the Leading Member. The Members shall perform with all reasonable skill, care and diligence their respective functions, as agreed between the

Members, allotted by the Policy Committee until the award of the Services Agreement to the Consortium or until the provisions of Sub-Clause 16.1 have been satisfied.

3.3 Once the Proposal has been submitted to the Client, no changes may be made or additional information or explanations given without the consent of all the Members until the Service Agreement is signed and have become effective.

3.4 The Members shall enter into a formal Joint Venture /Consortium Agreement, stipulating in detail the relations between the Members on the basis of this MOU and enter into the Contract, if it is awarded in accordance with the Proposal, or the Proposal as amended, subsequent to its submission, by agreement between the Client and the Consortium.

3.5 Upon the execution of this MOU, each of the Members shall grant a Power of Attorney in favour of a person nominated by it as its Representative. Under the Power of Attorney granted to him, the Representative of a Member shall thereby have authority to sign the Proposal and the Services Agreement on behalf of and in the name of that Member. The signature of its Representative shall bind each Member in respect of all obligations and liabilities it assumes under this MOU.

3.6 The Representative of the Leading Member shall be the representative of the Association for the purpose of correspondence and discussion with the Client on matters involving the interpretation of the Proposal and alterations to it and to the Services to be performed.

4. PERFORMANCE OF THE SERVICES

4.1 The Services shall be carried out by each Member in accordance with the terms and conditions as set out in the MOU and the Service Agreement. In the event of any inconsistency between the terms of this agreement and the Service Agreement regarding performance of the Services, the terms of Service Agreement shall prevail.

4.2 Each Member shall be responsible for fulfilling the obligations in accordance with the terms of Service Agreement.

4.3 The apportionment between the Members of MOU shall be recorded and amended in the Joint Venture /Consortium Agreement.

4.4 Any alterations or additions to be carried out under the Service Agreement shall be made only with the instruction or consent of the Client. Responsibilities for carrying out additional obligations shall be agreed between the Members, subject to the consent of the Client, if required by the Service Agreement.

5. LANGUAGE AND LAW

5.1 This MOU shall be written and interpreted in English Language and the law which is to be applied to this MOU shall be the law of India.

6. EXCLUSIVITY

6.1 Unless otherwise agreed by the Members, no Member shall engage in any activity related to the Services, unless otherwise agreed by the Members, other than as a Member of this Understanding and in accordance with the terms and conditions of this MOU. Each Member warrants that its subsidiaries and other firms or individuals over which it has control will comply with this requirement.

7. EXECUTIVE AUTHORITY

7.1 No Member shall have authority to bind or to make any commitment on behalf of any other Member unless such authority is expressed in writing by the Members jointly, or by a Member individually in regard to the (other) Member.

7.2 From the date of this MOU until the award of the Services Agreement or until this MOU shall terminate in accordance with its terms, whichever is the earlier, the following matters shall require the unanimous consent of the Members:

(d) for the purpose of submitting the Proposal, the respective responsibilities and obligations to be undertaken by the Members, subject to the conditions of the Invitation or TOR;

(e) for the purpose of submitting the Proposal, the prices and terms and conditions of payment comprised in the Proposal as applicable to the Members, subject to the conditions of the Invitation; and

(f) any communication to, or response to communication from, the Client either written or oral and any commitment of any kind to the Client or any other party in connection with the Proposal.

8. DOCUMENTS

8.1 All documents and/or information forwarded by either Member to the other for the preparation of Proposal shall remain sole and exclusive property of the Member which provided the same including the intellectual property rights.

8.2 Upon expiration/termination of MOU, each Member shall:

(a) return to the other, all such documents and/or materials including computer diskettes and all copies thereof that are jointly prepared by the MOU Members; and

(b) certify that all such documents and information and all copies have been returned to such receiving Member.

9. PERSONNEL

9.1 Each Member shall be obliged to depute as much of their personnel as are needed in timely accomplishment of the proposal for a specific project and subsequently carrying out of the project. Unless specifically agreed otherwise, under the arrangement of MOU, no employee shall be considered on its strength.

10. ASSIGNMENT AND THIRD PARTY

10.1 No Member shall assign, sell, transfer or in any way encumber its interest under this MOU, or its interests in any sums payable by the Client, without first obtaining the consent in writing of other Member.

11. SEVERABILITY

11.1 If any part of the provisions of this MOU is found in any way to be void or not applicable, such part of the provisions shall be deemed to be deleted and remainder provisions of MOU shall continue in force and effect.

12. MEMBER IN DEFAULT

12.1 In the event of insolvency of a Member, the other Member hereby irrevocably constituted and appointed attorney-in-fact for such insolvent Member to act for it in all matters affecting performance of the Service Agreement to be entered with the Client.

13. DURATION OF THE UNDERSTANDING

13.1 This MOU shall come into force and effect on the date of signing of this MOU by the Members.

13.2 Unless otherwise terminated earlier, this MOU shall expire on the date when;

- (a) the Proposal is not accepted by the Client; or
- (b) the Members entered into Joint Venture / Consortium Agreement, following acceptance of Proposal by the Client.

14. LIABILITY

14.1 Each of the Members warrants that it will indemnify and keep indemnified the other Member against all legal liabilities arising out of or in connection with the performance, or otherwise, of its obligations under this MOU.

14.2 In the event of it being alleged by one Member in writing that any legal liability is attributable to the other Member or to the Members, the Members shall use reasonable endeavors to reach agreement on the liabilities to be borne by each of the Members, and in the event of the Members failing to so agree, a proper apportionment shall be determined by resolution in accordance with Clause 19.

15. PROMOTIONAL AND PROJECT COSTS, PROFITS/ LOSSES AND REMUNERATION

15.1 Each Member shall bear and pay all of its costs and expenses incurred in connection with this MOU and all other activities concerning job acquirement prior to the signing of Joint Venture / Consortium Agreement except as otherwise agreed upon in writing.

16. FINANCIAL ADMINISTRATION AND ACCOUNTING

16.1 Each Member shall be responsible for keeping its own account in respect of payments due to it and for its own financial affairs generally. Each Member shall be responsible for dealing with its own

income tax affairs, and its own social security affair: where relevant, and for accounting accordingly to the relevant authorities.

17. DISPUTE RESOLUTION

17.1 Any dispute arising in connection with this MOU which cannot be resolved by the Parties in accordance with the terms of this MOU shall be settled amicably through negotiations, failing which the matter shall be referred to MCB, Bathinda for seeking their advice.

18. NOTICES

18.1 Notices under the MOU shall be in writing and will take effect from receipt at the address stated of the each of Member. Delivery can be by hand or facsimile message against a written confirmation of receipt or by registered letter or courier.

19. SOLE AGREEMENT AND VARIATION

19.1 This MOU is the sole understanding between the Members and supersedes any previous understandings between them relating to the matters referred to herein. Variations and addenda may be made to this MOU, including the admission of new Member (s) to the Association, by written instrument which shall be effective upon being signed by all Members (or on their behalf by their Representatives), provided that if a Member is considered by the other Member to be in default pursuant to Clause 12 of this agreement and signature is not required.

IN WITNESS WHEREOF the Members hereto have executed this MOU in [*State name of place*] on the day, month and year first above written.

1. Signed for and on behalf of

[Name of the Leading Member]

Signature _____

Name: _____

Designation: _____

Date: _____

Seal

2. Signed for and on behalf of

[Name of the Member]

Signature _____

Name: _____

Designation: _____

Date: _____

12.6 Annexure VI: Baseline energy consumption

The baseline energy consumption has been estimated from the total power consumption of the existing street lighting luminaires including the ballast losses. There were 2 options of estimating the baseline energy consumption i.e.

1. Based on the actual energy bills switch controllers wise for the last year
2. Based on the rated power consumption and ballast losses of the total population of street lighting luminaires (23,254)

The merits and demerits of both the options were explored. One way to estimate the baseline energy consumption is going by the aggregation of the annual energy consumption of all the switch controllers. In this scenario, the annual baseline energy consumption for the year 2016 comes out to be **71,61,804 kWh/year or 5,88,642 kWh/Month**.

In order to make a realistic assessment of the actual energy consumption for street lighting, the theoretical baseline energy consumption has been estimated from the total power consumption of the existing street lighting luminaires including the ballast losses.

As the Bidder will ensure the performance standards mentioned in this tender after implementation of this street lighting project, the baseline has been estimated for those particular performance standards and it comes out to be **71,61,804 kWh/year**. This baseline is more than the actual energy bills of street lighting (because here 100% glowing of lamps have been considered) in last year but more relevant as the last year bills might be lower on account of some of the non-running electric meters, lighting luminaires and addition of new light points in later months of the last year. The baseline for replacement of conventional street lights with energy efficient LEDs thus arrived at is **71,61,804 kWh/year** for the mentioned number of lamps (**23,254**). The baseline will be adjusted for any increase or decrease in actual number of lamps corresponding to their rating and number after the implementation of the project.

Energy Tariff:

Based on the last 12 months electricity bills provided by MCB officials, the average energy tariff applicable for street lighting comes out to be **Rs. [Fixed Charges@ INR 90/- per KW per month+ Variable Charges@ INR 7.35/- Per KWH]**.(as applicable according to PSPCL circular No 23/2018)

Tariff hike:

During the first year of concession period for energy saving payment, tariff rate would be considered **Rs. [Fixed Charges@ INR 90/- per KW per month+ Variable Charges@ INR 7.35/- Per KWH]** and tariff hike of **3% every year** will be considered in the remaining years of contract period for energy saving payments to Concessionaire.

12.7 Annexure VII: Technical Demonstration

The successful bidder (basis with highest monetized benefit for Municipal Corporation, Bathinda) shall be asked for Live Demonstration of LED lamps which are to be used during replacement in mixed load condition & under existing field condition along with CCMS. These trials will be monitored and verified jointly by MCB/ MCB and its consultants. The detail process to be adopted for live demonstration is as under:

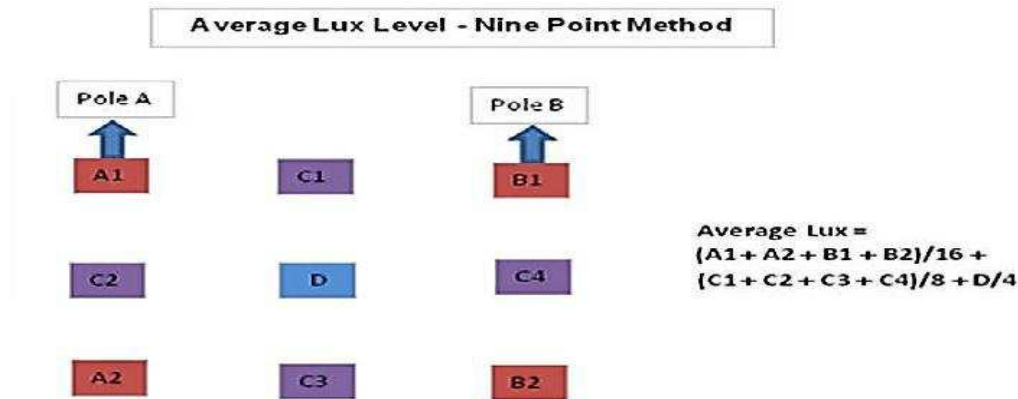
1. MCB/ MCB will select a site from existing street light network or develop a test site for conducting live demonstration and performance assessment of the proposed LED luminaires.
2. Successful bidder will have to install the 6-8 numbers of proposed LED luminaries along with CCMS panel and make all the necessary infrastructure ready for lux level and power consumption measurement.
3. Subsequently the lux level will be measured as per nine point method for both the existing system and the LED replacement proposed by the bidder. The details for recording the lux measurement is provided below,

Live Demonstration Measurement Sheet											
Site Location :											
Luminaire Details,			Pole Details		Identification Number		Mounting Height (m)	Pole Spacing (m)	Mounting Angle (Deg)	Boom Length	
Wattage of Existing Luminaire:			Pole A								
Wattage of Proposed LED Luminaire:			Pole B								
Illuminance by 9 point method (Lux)											
	A1	A2	B1	B2	C1	C2	C3	C4	D	Average Lux Level	Uniformity Ratio (Minimum Lux level/ Average Level)
Existing Luminaire											
LED Luminaire											

In addition to lux level measurement, bidder will have demonstrate the savings potential and power measurement for the same will be done for each of the LED luminaire. The power consumption will be recorded for a period of 15 to 30 mins to evaluate the savings percentage achieved.

The Pole details will be kept similar for conventional as well as new LED luminaires during measurement of the lux level. Average lux level and uniformity ratio of LED luminaire should be more than the lux level and uniformity ratio of Existing Street light luminaires.

The working of nine point method is shown in the figure below:



The average lux level and uniformity ratio measured, for the existing street light luminaire, during the live demonstration will be binding throughout the project tenure. The bidder will have to maintain this minimum lux level and uniformity ratio measured for existing luminaire throughout the project tenure.

At random during project operation, MCB official shall ask Concessionaire to demonstrate the lux level of operating LED luminaire is complying with the data recorded during live demonstration. Under such case, Concessionaire will have to install the LED luminaire at the site of live demonstration and verify the lux level. If, during such test it is found that lux level has fallen below the minimum required average lux level and uniformity ratio, Concessionaire at its own cost will have to replace all the LED luminaires with similar wattage as per the direction of Engineer In charge.

12.8 Annexure VIII: PSPCL 3-phase meter specifications

Technical Specification for ISI Marked DLMS Compliant as per Indian Companion Specification ETD 13(6211)/IS: 15959 & other relevant Standards (with latest amendments), for LT CT operated 3 Phase, 4 Wire Static Energy Meter (Category-C1) of ratio 100/5A & 200/5A of Accuracy Class-0.5S for both active energy and reactive energy with 'Optical port' & 'RS-232 port' along with

Compatible Software.

This specification covers requirements for the design, manufacture inspection, testing, supply and delivery of 'ISI' marked LT 3 Phase 4 Wire 50 c/s 415 V (3X240V) CT operated DLMS Compliant Static Energy Meters (Category-C1) of accuracy class 0.5S for both active energy and reactive energy with 'Optical Port' & 'RS-232 port' along with software for data transfer to base computer, through CMRI/direct downloading of data to lap-top computer/direct transmission through data transmission media & converting the same into data base in the base computer.

The CT operated LT meter (Tariff & load survey type) with initial and sustained Accuracy of class 0.5S (for both active and reactive energy) shall be suitable for 3 phase, 4 wire solidly earthed system connection which will also be suitable for Three phase four wire application with balanced and un-balanced load for a power factor range of zero to unity (lagging & leading).

1. STANDARD

The meters to be supplied shall conform to the latest edition of Indian standards/CBIP report. While drafting this specification, reference has been made to the following Indian Standard Specifications. In case, certain details are not covered in this specification, the relevant Indian Standard shall be applicable.

a)	IS : 14697-99 (with latest amendments up to 31.01.2017)	Specification for AC Static Transformer operated Watt Hour & VAR-Hour meters (class 0.5S).
b)	IS:15959-2011 (with latest amendments up to 31.01.2017)	Data Exchange for Electricity Meter Reading, Tariff and Load Control- Companion Specification
c)	CBIP Publication No. 325 (with latest amendments up to 31.01.2017)	Static Energy Meter - Specifications & Testing
d)	IS/IEC 60529:2001 (with latest amendments up to 31.01.2017)	Degree of protection IP-51 (for enclosure protection against ingress of dust, moisture &
e)	CBIP Tech. Report No. 111 (with latest amendments up to 31.01.2017)	Common Meter Reading Instruments and Optical Ports & RS-232 in use.
f)	IS : 9000 (with latest amendments up to 31.01.2017)	Environment Testing.
g)	IS-11731 (FH-1 Category) (with latest amendments up to 31.01.2017)	For Engineering Plastic Poly carbonate cover
h)	IS-11731(Part-2) 1986 (with latest amendments up to 31.01.2017)	-do-

For conflict related with parts of the specification and relevant standards, the order of priority shall be - i) This technical specification ii) relevant standards.

2 . CLIMATIC CONDITIONS

The meters shall be suitable to work satisfactorily under the following climatic conditions:-

- i) Minimum ambient temperature = (-) 5° C
- ii) Maximum ambient temperature = 55° C
- iii) Minimum relative humidity = 26%
- iv) Maximum relative humidity = 95%
- v) Altitude = upto 1000 meter above mean sea level

The other values shall be as specified in Clause-8 i.e. "Climatic Conditions" of IS: 14697 with latest amendments up to 31.01.2017.

The meter shall withstand and operate satisfactory without loss of accuracy under the most hazardous climatic condition specified above. Parts and surfaces, which are subject to corrosion, shall be provided with protective coating.

3 . SUPPLY SYSTEM

The meter shall be suitable for working satisfactory with following supply system with variations:-

Line voltage	415V +20% to -40%
Frequency	50 ±5% HZ
Power factor	Zero to unity (both lagging and leading)

4 . RATING

4.1 Voltage rating: The rated voltage will be 415 V between phases and 240V between phase & neutral.

4.2 Voltage variation: (+) 20% to (-) 40%.

4.3 Current rating: -/5Amp (Through current transformer).

4.4 Three phase four wire

4.5 Frequency: 50Hz (±) 5%.

4.6 Accuracy Class: 0.5S (for both active and reactive energy)

4.7 Power Factor 0.0 lag-unity-0.0 lead

4.8 Rated Max. Current 10A

4.9 Starting Current 0.1% of I_b (for both active and reactive).

5 . DISPLAY

The meter shall have 7 digits (6 Whole digits and one decimal digit) high contrast display with parameter identifier, backlit Liquid Crystal Display (LCD) of minimum 10 mm height (except decimal digit) and Min. 5mm width, wide viewing angle. LCD shall be suitable for temperature withstand of 70°C. Display should be uniformly illuminated. Backlit display shall be preferred. In day light it should be clearly visible. Display shall be of high contrast for ease of manual reading even from a distance under outside ambient conditions. This shall specifically be checked during sample testing/pre-dispatch inspection. In case a single display is being used to display multiple values, it shall be possible to display the contents of relevant memories. While displaying the various parameters from its memories the identification of each value shall be possible. Display must be electronic and it should not be affected by electrical & magnetic disturbances. Auto display cycle shall be with persistence time of 15 Seconds for each parameter. The meter should have facility to come in auto scroll mode if push button is not pressed for one minute

The data stored in the meters shall not be lost in the event of power failure. The meter shall have Non Volatile Memory (NVM), which does not need any battery backup. The NVM shall have a minimum retention period of 10 years. Meter should have the facility for data downloading during power OFF position.

In case of failure of power supply, the meter shall be capable to display the measured quantities through push-button with the help of an internal rechargeable! Non-rechargeable battery inbuilt in meter. Internal Battery provided shall have life of not less than 10 years and shall not damage the meter even during prolonged idle storage of the meter for 2 years. In power OFF position, when push button is released, the display with the battery shall stop immediately.

The internal rechargeable/ non- rechargeable battery shall be of any make out of PANASONIC / VARTA / TADIRAN / TEKCELL / EVE Energy / SANYO / NATIONAL / ELEGANCE / VITZROCELL / MAXELL, HITACHI

Note: - If Non-rechargeable battery used then the battery shall be locked after 3-operations during one OFF power cycle.

6 . QUANTITIES TO BE MEASURED/ MONITORED

The meters shall be capable of measuring and displaying the following electrical quantities within accuracy requirement as stipulated in relevant standards:-

6.1 DISPLAY PARAMETERS

The Meter shall have 3 modes of display as mentioned below:

A. Mode 1 or Auto Scroll Mode: Following parameters shall Auto Scroll in this mode with persistence time of 15 seconds:

- a) Meter Sr. No.
- b) R.T.C. (Date & Time)
- c) Cumulative Active Energy (Import) KWH
- d) Cumulative Apparent Energy (Import) KVAH
- e) Instantaneous load KW & KVA
- f) Instantaneous Power factor PF (Lag/Lead)
- g) Present M.D. (KW & KVA) with date and time (i.e. current billing cycle)

- h) Previous month M.D. (KW & KVA) with date and time (i.e. previous billing cycle)
- i) Instantaneous Red phase potential Volts
- j) Instantaneous Yellow phase potential Volts
- k) Instantaneous Blue phase potential Volts
- l) Phase sequence - Voltage.
- m) Phase sequence- Current.
- n) Cumulative Active Energy (KWH) & Cumulative Apparent Energy (KVAH) for the following time zones:-
 - i. 00:00 -06:00
 - ii. 06:00 - 18:00
 - iii. 18:00 - 22:00
 - iv. 22:00 - 24.00

Display shall automatically come back to the auto-scroll mode, if the push button is not pressed for one minute. No other parameter shall be displayed in the auto-scroll mode. Maximum Demand integration period shall be 30 Minutes. Auto resetting of MDI should be done at 24:00 hours of last day of each calendar month, for which manufacturer will program the calendar for minimum 30 years. However meter shall also have provision of maximum demand resetting through sealable push button.

- B. **Mode 2:** Mode 2 shall include all the display parameters as mentioned above under Mode 1 as well as all other parameters as per standard IS 15959:2011 with latest amendments.
- C. **Mode 3:** Display mode-3 shall be for displaying Energy consumption and maximum demand recorded during TOD slots indicated in this specification.
 - i. High resolution display in KWH, KVAH & KVARH (lag/lead) with 2+5 (or higher no. of decimal digits) energy format (for dial test)
 - ii. Cumulative Energy in KWH (T.O.D. wise) (for current month)
 - iii. Cumulative Energy in KVAH (T.O.D. wise) (for current month)
 - iv. Maximum Demand in KW (T.O.D. wise) (for current month)
 - v. Maximum Demand in KVA (T.O.D. wise) (for current month)

Mode-2 & 3 may be selectable through same push button.

Display parameters shall be as per Standard on data exchange for electricity meter reading, tariff and load control (IS: 15959 with latest amendments).

7 . MAXIMUM DEMAND INTEGRATION

Meter shall monitor demand in KVA and KW during the integration period set and record & display the maximum registered values. Max. Demand History data shall be available for last 12 billing periods. The rising demand under the current integration period shall also be displayed along with the elapsed time. The integration period shall be 30 minutes. This maximum demand shall correspond to any consecutive 30 minutes for block interval.

Integration logic should be such that integration time remains consistent with the real time clock and are set every 30 minutes and should not be linked with the Power ON/OFF. Meters shall be provided with real time clock (Accuracy ± 3 Minutes/Year).

It should be possible to reset MD by the following options:

- a) Local push button.
- b) Auto reset at 24:00 hrs at the last day of every month. Auto reset date should be remotely programmable from central data station for change in billing date (on any day of month).

In all the above listed MD resets, No. of counts shall increase on every reset.

Push button for MDI reset, mode and function shall be with/without spring and screw arrangement.

8 . LOAD SURVEY CAPABILITIES

Meter shall be capable of storing the following 5 parameters for minimum last 70 "**Power ON**" days with 30 minutes integration period:

- i) RTC (RealTime Clock - Date and Time).
- ii) KVA r h l a g
- iii) KVA r h l e a d
- iv) KVA h
- v) KWH

The meter shall also store power 'ON' time.

9 . COMMUNICATION CAPABILITY

a) Communication Port:

Meter shall be provided with two ports for communication of the measured/ collected data as per IS: 15959-2011 with latest amendments, if any i.e. a hardware port compatible with RS-232 for Category-C1 specifications which shall be used for remote access through suitable Modem (GPRS/GSM/EDGE/CDMA/PSTN/LPR) and shall have galvanically isolated optical communication Port as per CBIP technical report -111 of universal type complying with hardware specifications detailed in IEC-62056-21. This shall be used for local data downloading through CMRI.

RS-232 port shall be used to transfer and export data to the remote end server through suitable communication mediums (GPRS/GSM/EDGE/CDMA/ PSTN/LPR). Both ports shall support the default and minimum baud rate of 9600bps. Both the ports will support communication on DLMS and should be accessible through CMRI. All necessary software (BCS & for CMRI) required for downloading the data shall be provided by the supplier without any additional cost to the purchaser. There should be passwords for data retrieval. DATA shall not be re-programmable through ports.

- b) Meter should be AMR compliant with external modem through RS-232 Port, so that it can be connected to Automated Remote Meter Reading System. The bidders shall have to demonstrate the readings of meter data at the Base Computer Station Patiala in the existing AMR network of PSPCL for ascertaining the compatibility as per IS: 15959:2011 (with latest amendments).

10 . SELF DIAGNOSTIC FEATURES

Indications to show the satisfactory performance of the meter shall be provided in the meter. The meter shall have capability to check its circuits for any malfunctioning. If some

malfunctioning occurs, the meters should record such malfunctioning. The details of the self-diagnostic feature shall be furnished by the manufacturer/supplier. It should be possible to check correctness of CT connection to meter and polarity for proper functioning.

11. TIME OF DAY (TOD) TARIFF

The meter shall have eight different zones for storing TOD consumption and maximum demand. The registration of energy consumption shall be in 'KWH' & 'KVAH' and demand in 'KW' & 'KVA'. The timing of TOD zones, in hours, shall be as under:-

Zone no.	Timing
1	00:00 - 06:00
2	06:00 - 18:00
3	18:00 - 22:00
4	22:00 - 24:00

The time period of TOD recordings may be programmable as per DLMS standard with proper security.

12. CONSTRUCTION OF THE METER

12.1. GENERAL:

Complete meter housing material i.e. base/cover/terminal cover shall be made out of high quality reinforced polycarbonate material to ensure high reliability and long life. Meter base shall be non-transparent material. Meter cover & terminal cover shall be of transparent material. The thickness of meters case, base & terminal cover shall be minimum 2mm.

The meter shall be compact in design. Meter shall be immune to vibration and shocks during transportation and handling as per clause 12.3 of IS: 14697 (with latest amendments). It should also be immune to external magnetic / electric fields as per clause 12.8 of IS: 14697 (with latest amendments).

Polycarbonate plastic conforming to requirement of FH-1 of IS: 11731 shall be used. However, test requirements shall be met as per IS-14772:2000 and following standards (with latest amendments):

UV ageing as per ASTM: G53, Ball pressure as per IEC -60695-10-2, Flammability Test as per UL-94/IS-11731, Glow wire test as per IS-11000/IEC PUB, 60695-2-12, Heat deflection temperature as per ISO-75/Ae and Boiling water test (10 Minutes).

The electronic components used in the meter shall be of high quality from world-renowned manufacturers and there shall be no drift in accuracy of the meter over a long period of time. The make of ASICs to be used should be ANALOG DEVICES/ SEMS/ ATMEL/ SIEMENS/ TOSHIBA/ PHILIPS/ FUJITSU/ NATIONAL/ TDK/ AMS/ ZILOG/ ST Micro Electronics/ CIRRUS LOGIC/ MOTOROLA (now freescale)/ TEXAS INSTRUMENTS/ MICROCHIP/ RENESAS. It shall be convenient to transport and immune to vibration and shocks during transportation and handling. It should also be immune to external magnetic /electric fields.

Meter shall have a device such as blinking LED, which blinks giving indication analogous to the rotation of the disc in an electromechanical meter. The meter shall be state of the

art using surface mounted components and shall be housed in a safe enclosure of Projection mounting type. The meter shall be fixed up with the help of screws and should have a handle to facilitate carrying around. The meter shall conform to degree of protection as per IP51 of IS/IEC 60529:2001 (with latest amendments), for protection against penetration of dust and water.

All the terminals for CTs connections shall be arranged in a row along the meter in the lower side. The terminals shall be moulded/tight fit constructions with barriers and covers to provide secure & safe connections of CTs through the stranded copper conductors of 2.5mm size. The terminal cover design shall be pilfer proof and extended type and shall be of transparent polycarbonate.

Meter shall generally comply with the mechanical requirements of IS 14697 (with latest amendments).

12.2. METER CASE (COVER & BASE)

Meter cover shall be in single piece and fully transparent. Otherwise for easy reading of all displayed values/parameters, name plate details and observations of operation indicators the window portion of molded cover shall be fully transparent whereas rest of the cover shall be semi-transparent. The entire design and construction shall be capable of withstanding the severest stress likely to occur in actual service. Meter case shall ensure adequate insulation properties maximum strength against distortion and injury to the working parts during normal use and rough handling during transportation. The casing should be dust & moisture proof to the degree of IP-51 as per IS/IEC 60529:2001 (with latest amendments). Bidder must submit the test certificate to this effect. The meter cover and base when closed should be designed in such a way that entry of any film of thin foreign object shall not be possible. The meter cover shall be continuously ultrasonic welded with meter base from all side.

Construction of the meter shall be such so as to permit the sealing of the meter cover, terminal cover etc. independently to ensure that the internal parts are not accessible for tampering etc, without breaking the seals and ultrasonic welding.

Overall dimensions of offered meter shall be suitable for mounting in the meter cup boards being used by PSPCL failing which the meter of the firm is liable to be rejected. Bidders are requested to check the fixing arrangement provided in the meter Boxes in the office of CE/Metering.

12.3. TERMINAL BLOCK:

Terminal block shall be made of flame retardant type VO grade polycarbonate /Bakelite material having sufficient thickness, insulating properties and mechanical strength. Minimum centre to centre distance between adjacent terminals in terminal block shall be as per latest IS-14697 with latest amendments.

Terminals shall be grouped in a terminal block having adequate insulating properties and mechanical strength. Holes in the insulating material shall be of sufficient size so as to accommodate a small length of insulation of the conductors also.

Method of fixing conductors to the terminal shall ensure adequate and durable contact so that there is no risk of loosening or undue heating. The terminal block shall ensure reasonable safety against the spread of fire and should not get ignited by the heat

generated on account of overload of live parts in contact with them. All parts of every terminal shall be such that the risk of corrosion resulting from the contact with any other metal part is minimized. Internal diameter of terminal inserts shall be minimum 5.5mm with minimum two screws (without pointed ends i.e. flat ends so as not pierce in the external conductor.) in order to tighten the terminals effectively. Terminal inserts, screws and washer shall be of tin/Nickel plated brass.

12.4. TERMINAL COVER

Meter terminal blocks shall be provided with an extended terminal transparent cover of material mentioned at Sr. no. 13.1, which will enclose the terminals, their fixing screws, a suitable length of external insulated conductor and its insulation. There shall be provision of sealing the terminal cover with two independent seals. When the meter is mounted on a meter board, no access to the terminals shall be possible without breaking the seals of the terminal cover. Terminal cover shall be fixed with terminal block meter housing with hinge.

The terminal cover shall be fixed with terminal block hinged either at the top so that it opens from bottom to top or hinged at right side so that it opens from left to right of meter or vice-versa. The pin used in the hinge shall be riveted at one end and crimped at the other end or the snap fit type hinged arrangement with top cover be provided. The terminal cover shall have a C-cut of suitable size at the bottom for entry of cable leads.

13. SEALING OF THE METER

Proper sealing arrangements shall be provided on the meter to make it tamper-proof as under:

- i. At-least two (2) seals on the meter body.
- ii. Two (2) seals on the terminals block.
- iii. One (1) seal on maximum demand resetting device.
- iv. One (1) seal on optical port.
- v. RS-232 port shall be sealable either through one no. separate seal or sealable through terminal block sealing arrangement.

14. METER POWER SUPPLY:

Meter shall be self-powered and thus shall draw its power from all three phases and neutral. Potential and neutral links, if any, should be inside the meter case and meter should be able to be tested on 'Fully Automatic Meter Test Bench' under sealed cover condition. No external link shall be accepted. Further, the meter shall not get damaged if line voltage is applied to neutral for 30 minutes.

15. ACCURACY

The accuracy of measurement by meter shall be tested in accordance IS 14697 (with latest amendments). Provision may be made that once the accuracy is brought within limits, the adjustments should be ceased and it shall not be possible to change the calibration of meters at site.

16. TAMPER AND FRAUD DETECTION

The meter shall have the following special features to prevent/detect common ways of tamper and fraud:-

- i) **Phase sequence Reversal:** The offered meter will keep working accurately irrespective of the phase sequence of supply.
- ii) **CTs Polarity Reversal:** Meter shall detect and record the tamper of Phase wise CT reversal with date & time of occurrence and restoration or duration of tamper. Further, under this tamper, the energy recorded by the affected phase/phases should be added to the import energy register.
- iii) **CT Open/Missing:** Meter shall detect and record the tamper of CT open /missing of CT secondary terminals with date & time of occurrence and restoration or duration of tamper along with proper indication on display for tamper identification.
- iv) **Missing Potential:** The offered meter will be capable of recording occurrence of missing One/two Potentials, which can happen due to intentional/ accidental disconnection of potential leads, with suitable indication on display. All such Occurrences and restorations or duration will be recorded with date and time.
- v) **Over Voltage& Low Voltage:** Meter shall detect & record the incidence of Over voltage in any phase (120% of Vref & above.) & Low voltage in any Phase (80% of Vref & below) with date & time of occurrence and restoration/Duration.
- vi) **Over Current:** : Meter shall record the incidence of Over Current in any Phase (more than 1.3 times of I_b) with date & time of occurrence and restoration/Duration.
- vii) **Meter Cover Open:** In case meter top cover is opened, the same should be recorded as tamper event with date & time stamping and the meter reading should get blocked and only the words "C-Open" with date & time should appear permanently, on auto display (Mode-1). The other two modes of display i.e. mode-2 & mode-3 shall not get blocked. Under this condition meter shall, however, keep recording the consumption, which can be checked from its memory. Cover open tamper should not be re-settable, i.e. once the cover open tamper occurs, the above display should always be there.

Cover open tamper should not be activated during the manufacturing process. "Meter Cover Open" tamper must also get logged even when the power supply is 'OFF'.
- viii) Power OFF will be recorded as an event if it persists for more than 30 minutes. Print out with total number of events occurred can also be taken out by base computer system.
- ix) **Current unbalance:** Meter should record tamper when there is load difference of 25% I_b or above between any two phases (the tamper should be recorded on the phases which has lower value of load) provided minimum 10% of I_b load is flowing.
- x) Meter shall log actual date and time of occurrence/restoration of tamper. Meter will also log the snap shots i.e. instantaneous values of individual voltages, currents, power factors, Active & Apparent Energy etc., at the instant of confirmation of tamper. The time of at least one of the occurrence and restoration/duration will be indicated in the printout.
- xi) All tampers except "Cover Open", "Abnormal magnetic Induction" & "Power Off" will be recorded if the tamper persists for three minutes and the restoration time after 3 minutes.
- xii) In case more than one tamper exists simultaneously then meter will record all the tamper with date and time of occurrence.

- xiii) The offered meter will record accurately under tamper conditions of neutral disturbance when DC voltage is fed to neutral by installing a diode.
- xiv) At least 350 Nos. tampering events (175 no. occurrence and 175 no. restorations) shall be recorded with date & time.
- xv) Meter should work properly in the event of removal of neutral according to electrical conditions and connection in case of 3-phase 4-wire connection. Meter shall measure & record energy/parameters according to electrical conditions and connections.
- xvi) **Invalid Voltage** : The meter should record tamper if same phase voltage is given to any two phase terminals of the meter and actual current is fed through CT secondary terminals (i.e. CT connections are OK but one phase voltage for LT meter only is disconnected and not for bad and is looped/shorted with any one of the other / remaining two phases) e.g. V_R, V_R, V_B & V_N and $I_{r1}-I_{r2}, I_{y1}-I_{y2}$ & $1_{b1}-1_{b2}$ instead of V_R, V_Y, V_B & V_N and $I_{r1}-I_{r2}, I_{y1}-I_{y2}$ & $1_{b1}-1_{b2}$. Meter should also record energy accurately under these conditions assuming voltage of all the three phases as V_{ref} , UPF, and actual current flowing through individual phases.

Further, CT reversal phenomenon shall be appearing due to phase shift of 120° under these conditions / Tamper. However, in order to avoid any confusion, CT reversal tamper shall not be indicated / logged (i.e. should be blocked) in DDL print outs by the firms for this tamper only (i.e. Invalid Voltage). However, snap shot shall indicate actual values of current.

Snap shot shall be logged as per clause 17(x) & (xi) of Tender Enquiry (i.e. if tamper persists for 3 minutes). The accuracy tests/ dial test shall be performed after logging of this event is confirmed (i.e. after 3 minutes) at the time of testing of sample meters/ meters.

NOTE:

1. Tamper information and readings logged by energy meter should not be changeable by either Common Meter Reading Instrument or P.C.
2. All tamper events shall be recorded with date and time.
3. Event wise allocation of 350 tampers in the meters shall be as under: -

Event Category description	Tamper
Voltage related events including overvoltage & low voltage	132
Current related events including over current and current unbalance.	134
Power failure related events	50
Transaction related events	10
Other events	20
Non-rollover events	04
Total	

17. ABNORMAL VOLTAGE/ FREQUENCY DEVICE TEST:

The accuracy of the meter should not be affected with the application of abnormal voltage/frequency generating device available in ME Labs of PSPCL having spark discharge of approximately 35KV. Meter shall be tested by feeding the output of abnormal voltage/frequency generating device to the meter in any of the following manners for a total period of 10 minutes:

- i) On any of phase or neutral terminals.
- ii) On any connecting wires of meter.
- iii) Spark on meter body (including optical port)
- iv) At any place in load circuit.

} Voltage discharge with
0-10 mm spark gap.

However, spark on meter body test shall not be conducted on the RS-232 port.

Accuracy of the meter shall be checked before and after the application of the above device.

During this test i.e. during the application of abnormal voltage/ frequency generating device, display as well as pulse of meters should not be affected.

The Abnormal Voltage/ Frequency devices are available at ME Lab, Patiala. Meter will be tested with any of the five devices to be selected randomly out of total devices available with ME Lab, Patiala. Firms are at liberty to get their meters tested from ME Lab, Patiala with high voltage, high frequency device before submission of sample meters to this office. In case of successful bidders, the meters shall be tested at the works during inspection with any of devices available with PSPCL.

18. EFFECT OF ABNORMAL MAGNETIC INDUCTION:

In the event of logging of abnormal magnetic induction with date & time, the meter should record energy in import register only equivalent to the product of rated voltage, rated maximum current and unity power factor if tamper persists for three minutes or more. Restoration time for magnetic tamper shall be 30 Seconds minutes after removal of tamper. Date and time of occurrence of tamper and total duration of the tamper will be recorded by the meter. Sensor used for detecting this tamper should be of electronic type.

This test shall be performed using 0.5 Tesla permanent magnet and meter should record energy in import register only equivalent to the product of rated voltage, rated maximum current and unity power factor at least at one location / place on the meter.

However, at all other points where meter does not record at I_{max} , it should record energy correctly as per IS-14697:1999 (with latest amendments). Also before logging the tamper, meter should record energy correctly as per IS- 14697:1999 (with latest amendments up to 31.01.2017).

19. Meter shall record the energy accurately, within the permissible limits of error, under the effect of radiation emitted by mobile phone.

The test shall be carried out by bringing any mobile phone in close proximity of the meter for 10 minutes when there is an incoming call and shall be checked under the following conditions-

- 1 10 % I_b at UPF
- 2 50 % I_b at UPF
- 3 100 % I_b at UPF
- 4 120 % I_b at UPF

20. The registration of reactive and apparent energy at leading power factor shall be as follows:-

Reactive energy shall be stored in a separate register.

21. POWER CONSUMPTION:

- i) The active and apparent power consumption in each voltage circuit at reference voltage, reference temperature and reference frequency shall not exceed 1.0W and 10 VA.
- ii) The apparent power taken by each current circuit, at basic current, reference frequency and reference temperature shall not exceed 1.0VA.

Note: The testing shall be carried out strictly under test conditions as per clause-12.9 of IS-14697 (with latest amendments).

22. WORKING ENVIRONMENT

As per IS 14697-1999 (with latest amendments) meter to perform satisfactorily under Non Air conditioned environment (with in stipulations of IS). Meter body will conform to IP51 degree of protection.

The meter shall be suitable designed for satisfactory operation under the hot and hazardous tropical climate conditions and shall be dust and vermin proof. All the parts and surface, which are subject to corrosion, shall either be made of such material or shall be provided with such protective finish, which provided suitable protection to them from any injurious effect of excessive humidity.

23. PERFORMANCE UNDER INFLUENCE QUANTITIES

The meters performance under influence quantities shall be governed by IS: 14697- 1999 (with latest amendments). The accuracy of meter shall not exceed the permissible limits of accuracy as per standard IS 14697 (with latest amendments).

24. OUTPUT DEVICE

Energy meter shall have test output, accessible from the front, and be capable of being monitored with suitable testing equipment while in operation at site. The operation indicator must be visible from the front and test output device shall be provided in the form of LED output device for kWh and kVAh measurement. Resolution of the test output device shall be sufficient to conduct satisfactorily accuracy test at the lowest load in less than 5 minutes and the starting current test in less than 10 minutes as per Clause 6.11 of IS: 14697 with latest amendments.

25. CALIBRATION AT SITE

It shall not be possible to change calibration of meters at site.

26. OPERATION MANUALS

The supplier shall supply free of cost detailed operating and maintenance manuals of meters and software to the purchaser for use. The number of such manual sets shall be equal to the numbers of meters under purchase.

27. NAME PLATE AND MARKINGS

The letters Punjab State Power Corporation Limited & 'ISI' mark shall be indelibly and clearly marked at the appropriate place of the meters. The meter shall have a name plate clearly visible, effectively secured against removal and indelible & distinctly marked with the particulars mentioned generally as per IS: 14697 with latest amendments. In addition the words 'Property of PSPCL', Purchase Order No & date, Year/Month of manufacture and guaranteed for the duration of contact period or guarantee period provided by the manufacturer, whichever is higher from the date of supply shall be either punched or marked indelibly on the name plate. Purpose of LED indicators shall be clearly printed on the name plate. Month & year of replacement of the meter supplied against guarantee shall be indicated on meter name plate.

28. CONNECTION DIAGRAM:

Every meter shall have a diagram showing the external connections appropriate to its type which shall be embossed / engraved on transparent meter terminal cover and shall be clearly readable. The sequence of connections shall conform to IS: 14697 with latest amendments. Schematic diagram of meter shall also be supplied with tender.

29. PERFORMANCE GUARANTEE:

Meter shall be guaranteed for the duration of contact period or guarantee period provided by the manufacturer, whichever is higher from the date of supply. If any meter fails during this period free replacement shall be carried out by the firm within 2 months of notification of defects. Detailed guarantee clause is given in general terms & conditions.

30. QUALITY AND WORKMANSHIP

Workmanship and material used should be of the best quality. Due weightage will be given to the quality of each assembly/ component. Meter shall be manufactured using latest 'state of the art' technology and methods prevalent electronic industry. The meter shall be made from high accuracy and reliable surface mount technology (SMT) components. All inward flow of major components and sub assembly parts (CT, PT/RTC/Crystal, LCD, LED, power circuit assembly etc.) shall have batch and source identification. Fully tested Multilayer glass epoxy 'PCB' assembly with 'PTH' (plated through Hole) using surface mounted component shall have adequate track clearance for power circuits. Mounting of components on PCB shall be SMT (Surface Mounted Technology) Type and components shall be assembled using automatic 'pick-and-place' machines, reflow soldering oven, for stabilized setting of the components on PCB. For soldered PCBs, cleaning and washing of cards, after wave soldering process is to be carried out as a standards practice. Assembly line of the manufacturing system shall have provision for testing of sub-assembled cards. Manual placing of components and soldering to be minimized to items, which cannot be handled by automatic machines. Handling of 'PCB' with ICs/CMOS components, to be restricted to bare minimum and precautions to prevent 'ESD' failure to be provided.

Latest technology such as hybrid microcircuit or Application Specific Integrating Circuit (ASIC)/ Micro controller shall be used to ensure reliable performance. The electronic

components used in meter shall be of high quality from world-renowned manufacturers and there shall be no drift in accuracy of the meter over a long period of time. Make of ASICs/Microcontroller to be used should be ANALOG DEVICES/ SEMS/ ATMEL/ SIEMENS/ TOSHIBA/ PHILIPS/ FUJITSU/ NATIONAL/ TDK/ AMS/ ZILOG/ ST Micro Electronics/ CIRRUS LOGIC/ MOTOROLA (now Freescale)/ TEXAS INSTRUMENTS/ MICROCHIP/RENESAS. Meter manufacturing firms should have BIS certificates for meters similar to offered meter on date of submission of tenders.

Complete assembled and soldered PCB should undergo functional testing using computerized Automatic Test equipment. Fully assembled and finished meter shall undergo 'burn-in' test process for 12 hours at 55 degree Celsius (Max. temperature not to exceed 60 degree Celsius) under base current (I_b) load condition.

Test points should be provided to check the performance of each block/stage of meter circuitry. RTC shall be synchronised with NPL time at the time of manufacture. Meters testing at intermediate and final stage shall be carried out with testing instruments, duly calibrated with reference standard with tractability of source and date.

31. WIRING

Arrangement of internal wiring of meter shall be neat and held suitably away from live parts. Colours of leads and wires used for different phases shall be of relevant colour i.e. red colour for red phase and so on.

32. INSPECTION AND TESTING

- a) The inspection and testing shall be done as per IS: 14697 / CBIP-325 (with latest amendments). All the meters shall be tested, calibrated and sealed by the supplier at their works before dispatch. While offering the meters for inspection, the record of routine test results for each meter shall be put up to Inspecting Officer for verification. A register shall be maintained in Manufacturer's office for this purpose. The testing of meters shall only be done after verification of the test results by the Inspecting Officer and copy of the routine test certificates of individual meter shall be supplied to consignees along with meters.

The tests as per IS:14697 (latest) and as per CBIP325 report (Latest) for magnetic strength of AC and DC permanent magnet, respectively, shall be carried out during inspection by PSPCL before dispatch.

The PSPCL shall inspect, examine and test the equipment /material through its officer(s) or through an out -side agency nominated by PSPCL at manufacturer's/suppliers works during or after the manufacture of goods or at NABL accredited laboratory (CPRI, ERTL, ETDC & ERDA only), prior to dispatch, on receipt of clear notice of minimum two weeks in advance to be reckoned from the date of receipt by the purchaser. The supplier shall give the list of tests for which testing facilities with the manufacturer are not available and submit the proposal for carrying out the same at reputed test laboratories. Sealing shall be done with hydraulic press and Aluminium seals with steel lash wire, which shall be provided by the supplier. The supplier shall provide to the Inspector/representative of the

purchaser with reasonable facilities, free of charge, to satisfy him that the equipment offered is in accordance with the specification/ISS.

The benefit of permissible displacement of zero line under clause-12.15 of IS: 14697-1999 "Limit of error and Interpretation of Test Results" shall not be allowed during Testing of meters.

The Inspecting agency can carry out any type test which felt necessary as acceptance tests at firm's works. PSPCL Inspecting Officer will open one meter, to check physical parameters.

- b) **Two samples meters shall be sealed during inspection from any two lots of offered material** and shall be got type tested by PSPCL from any external NABL approved laboratory out of CPRI, ERTL, ETDC & ERDA only at the cost of supplier and in case of any failure, the entire lot shall be rejected at the risk and cost of the supplier. Further, PSPCL may get the sample meters type tested from the subsequent lots from any of the above mentioned laboratories, at its own cost.

Note- In case the sealed sample fails in testing then the sample of subsequent lot shall be tested at the cost of the firm.

- c) During inspection of material, it shall be certified in the inspection report that the meter base, meter cover & terminal cover have been made out of high quality reinforced polycarbonate. **The samples of above parts shall be sealed from any two lots during inspection** and got tested from any Govt. approved Laboratory at the cost of supplier, for carrying out following tests:-
- i) UV ageing as per ASTM: G53.
 - ii) Ball pressure as per IEC-60695-10-2.
 - iii) Flammability Test as per UL-94/IS-11731.
 - iv) Glow wire test as per IS-11000/IEC PUB, 60695-2-12.
 - v) Heat deflection temperature as per ISO-75/Ae and Boiling water test (10 Minutes)

Note: - Please also refer clause no. 21 "INSPECTION AND TESTING" of schedule-E of this specification.

33. TYPE TEST AND TEST CERTIFICATES

The Concessionaire shall submit type test certificates of meters along with tender, issued by NABL accredited laboratory for all type tests covered in IS: 14697 with latest amendments including immunity to magnetic field as per CBIP-325 with latest amendments and these test certificates shall pertain to LT AC 3-Phase, 4-Wire CT operated Static Energy Meters of Accuracy Class-0.5S (for both active and reactive energy) only. Concessionaires shall also submit, along with tender, Type Test Certificates of high quality Reinforced Polycarbonate material used for meter housing material i.e. base/cover/terminal cover from any Govt. approved Laboratory. The Concessionaire shall also submit valid DLMS compliant certification (category-C1), as per Indian Standard IS 15959 with latest amendments), of the offered meters along with tender. Further, these tests must not have been conducted earlier than two years from the scheduled date of bid opening. The purchaser reserves the right to

demand repetition of some or all the type tests in the presence of purchaser's representative free of cost.

For any change in the design/type, already type tested and the design/type offered against this specification, the purchaser reserves the right to demand repetition of tests free of cost. In case type test certificate are not submitted as per tender specifications then the tender shall be rejected.

The type test certificates submitted by the Concessionaires should clearly contain the following information that the:

- i) Type of Display is LCD/LED.
- ii) Meter case is of polycarbonate.
- iii) Class of Accuracy of the meter is 0.5S.

In addition to these, the Concessionaires shall obtain a valid ISO 9001:2008 certification from meter manufacturing company, ISO 27001:2005 for information security management system & ISO 14001:2004 for environmental management system and shall submit the same to the MCB along with the technical bid.

NOTE-

1. **All type tests as per IS-14697 with latest amendments should be got carried out on the same sample meter with same Lab identification code of Test House. Similarly all the type tests for magnetic field as per CBIP- 325 may be on single sample meter.**
2. Reports for type tests conducted in manufacturer's own laboratory and certified by testing institute shall not be acceptable.
3. The sample meters submitted (as per clause-38 of the tender specification) shall be examined/tested for various tests / accuracy (as per relevant ISS or other standards mentioned elsewhere) for both active and reactive energy as per accuracy class 0.5S.

34. SUPPORT SERVICES

In addition to the supply of meters and equipment the supplier would be required to extend supports services as under:-

- a) The supplier shall provide meters along with software for data transfer to base computer through CMRI's/Direct down loading of data to lap-top computer/direct transmission media i.e. telephone line, cellular phone, wireless etc. with auto-dialer feature and shall assist in converting the same into data base in the base computer. The software should have feature to give command to reset the MDI through base computer.
- b) Based on the data retrieved from the meters, generate analysis report for the Board so as to reflect on the following parameters for enabling the purchaser to take necessary corrective actions for future:-
 - i) Load profiles.
 - ii) Tamper analysis data and any other such useful information.

- iii) The computer software should have suitable interface to transfer the billing Data to billing software on line through LAN or through some data storage device for processing/printing out the energy bills. The computer software should be able to convert the data received from the meter into database so that further processing of the output is possible.

35. MISCELLANEOUS

- a) The software provided by the meter manufacturer for base computer should have the provision for entering Meter CT ratio, line CT ratio. Also its software shall be capable of multiplying the meter data with whole number or fractional number arising due to non-matching of meter CT ratio and line CT ratio.
- b) The Concessionaire should also submit complete technical write up along with literature of meters.
- c) Blinking LED/high resolution display through CMRI for testing active and reactive energy should be available and meter constant should be invariably printed on the dial plate. The testing pulse should be homogenous and manufacturer should state necessary number of pulse count(s) to ensure measurement and accuracy of atleast 1/10th, of class of meters at different test point.
- d) Power interruptions should be stamped with 50 events but the events occurred for (1/2) hours and above should be logged in the print out with total number of events occurred.
- e) Meter should have the facility for data downloading during power OFF position. When battery push button is kept pressed ON.
- f) Provision should be made for recording cumulative daily energy (in KWH & KVAH) at 00:00 Hours, for the purpose of energy auditing for last 70 (seventy) "Power ON" days.
- g) Maximum Demand History data (KW & KVA) should be available for last 12 calendar months, all the MDI registers should be with date and time stamping. Cumulative energy (kWh & KVAH) at 00.00 Hrs shall also be available in the memory for last 12 calendar months.
- h) The meter must provide summary report for all total nos. of tamper events and total duration (for each type) for the events occurred from the date of manufacturing and it shall not be possible to reset the values to zero through programming or rollover.

36. SAMPLES

Firms are requested to submit four number samples (-/5A) of offered meters (as tabulated below), on or before the opening date & time of tenders and supply software logics to examine acceptability of their products.

Ratio	Accuracy class (for both active and reactive energy)	Welding	No. of samples
-/5Amp	0.5S	Ultrasonically	4

In case order is placed on a firm, the meters shall be supplied as per the sample & the specification. No subsequent changes in design shall be allowed in supplies unless the same is got approved from purchaser with due justification.

37. CERTIFICATES :

Following Certificates will be furnished by the bidders in their offer:

- a) That their meters are capable of recording of 350 tamper events.
- b) That their meters are capable of recording of minimum 70 "Power ON" days load survey.
- c) That RTC Drift shall be within (+/-) 3 minutes for the year.
- d) The time period of TOD recordings are programmable as per DLMS standard with proper security.
- e) Software takes care of 29th Feb of the leap year.
- f) No fake ICs will be used by them in the manufacturing meters to be supplied.
- g) Meter will not be affected by Abnormal Voltage/ Frequency Devise as per clause-18 of specification.
- h) Internal software related with accuracy, tamper recording and accuracy of meters and other parameters of meter shall not be re-programmable through Communication Port. Or 'RS-232 Port'.

This specification is a guideline, for supply the Trivector metering features. However, the Concessionaire should offer the meter as per IS: 14697/companion specification bringing out clearly the all-technical features provided in their Trivector meters.

38. REAL TIME CLOCK AND BATTERY

Maximum Demand integration cycle of 30 minutes shall be on the basis of 'Real Time Clock' of the meter. The maximum drift in real time clock of the meter shall not exceed (\pm) 3 minutes per year. A lithium battery (Non-rechargeable) of adequate capacity shall be used for supplying energy to the real time clock during no voltage or power off condition. The minimum life of the battery should be ten years with a shelf life of 2 years. The lithium battery (non-rechargeable) shall be of any make out of MAXELL, HITACHI/ PANASONIC/VARTA/ EVE/ MITSUBHISHI.

The RTC battery & the battery for display in case of power failure shall be separate. In any case, RTC battery Power shall not be used for display under power off condition.

The Real Time Clock (RTC) provided in the meter shall be pre-programmed for 30 years without any necessity for correction with maximum drift not more than (+/-) 180 seconds per year. The day/date setting and synchronization shall only be possible once in a year subject to maximum of 3 minutes through password/key code command from one of the following:

Remote server through suitable Communication network/ PC/Substation data logger.

12.9 Annexure IX: Format of Authorization Letter from Manufacturers

(On the letter head of manufacturer)

To,

[Write Company Name & Address of the Experienced Contractor/ESCO]

Sub: Letter of confirmation to ***[Write Company Name]*** for supply of LED street lights in accordance with the requirements of RFP No.

Reference:

Dear Sir,

We would like to introduce ourselves as one of the leading manufacturers of LED lights. With respect to the subject mentioned issue, we would like to confirm that:

1. We agree to supply LED lights, to ***[Write Company Name]***, in accordance with the requirements of the RFP No. _____.
2. We agree to provide the backup guarantee for the contract period, with full replacement and repairing support for the supplied LED lights.

We look forward to being your trusted partner for supply of LED lights for this business. If you need any clarification, you may please write to us.

Thanking you

Yours truly,

[Name of the LED manufacturer]

[Signature and details of the Authorized Signatory]