



Solapur Municipal Corporation

REQUEST FOR PROPOSAL

Revision- NIL

Particulars	Details
Client	Solapur Municipal Corporation (SMC), Solapur, INDIA
Project Name	Implementation of projects under Smart City Mission in Solapur City
Assignment Name	Selection of Energy Service Company (ESCO) for Implementing Energy Efficient Street Lights and Centralized Control and Monitoring System for Solapur on PPP Mode. (Third Call)
Document Name	Volume – I Request for Proposal (RFP)
Document Issue Date	26/04/2018
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Solapur Municipal Corporation

Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines, Solapur - 413001

April 2018

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 Solapur Municipal Corporation (SMC) (hereinafter to be referred as “Authority”) 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 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 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, 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 accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

The Authority, 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 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 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 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 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 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

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.

Abbreviations

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

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 Solapur City Development Corporation Limited (SCDCL), a Company incorporated under the Companies Act 2013, (“**SCDCL**”) is formed for implementation of Smart City projects under the Smart City Mission (the “**Mission**”). Wherein the Solapur Municipal Corporation (the “**Corporation**” or “**SMC**” or “**Authority**”) and the Government of Maharashtra are equal equity stakeholders. The Corporation while preparing the Smart City Proposal (the “**SCP**”) for Solapur under the Mission has envisaged implementation of projects in energy efficiency sector. The Authority is now desirous to improve the service levels of public street lighting as per applicable standards through implementing energy efficiency street lighting features.
- 1.1.2 The Authority now intends to appoint an energy service company (“**ESCO**” or “**Concessionaire**”) for implementing energy efficient street lighting project in Solapur on through on a public private partnership (PPP) mode (the “**Project**”) for a specified Concession Period of 10 years for operation and maintenance and energy saving payment post the implementation period of 9 months (extendable by 3 Months).
- 1.1.3 The Successful Bidder or the Concessionaire, shall be responsible for designing, engineering, financing, procurement, installation, operation and maintenance of the Project in accordance with the provisions of a long-term concession agreement (the “**Energy Savings Performance Contract**”, “**ESPC**” or “**Concession Agreement**”) to be entered into between the Concessionaire and Authority/Corporation in the form provided by the Authority as part of this RFP document pursuant hereto.
- 1.1.4 The scope of work includes installation of the Project as set forth in this RFP document together with provision of Project Facilities as specified and in conformity with the Specifications and Standards set forth in APPENDIX IV of this RFP.
- 1.1.5 An ESPC will be drawn up between the Authority and the Successful Bidder on PPP basis. 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**”).
- 1.1.6 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’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.
- 1.1.7 The Authority 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 pursuant to this RFP, as modified, altered, amended and clarified from time to time by the Authority (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 1.8 for submission of Bids (the “**Bid Due Date**”).
- 1.1.8 A Bidder shall be considered as a Successful Bidder for the project of the Authority, where the Letter of

Award (LoA) has been issued to them.

1.2 BRIEF DESCRIPTION OF BIDDING PROCESS

1.2.1 The Authority is adopting a single stage 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, viz.:

- Stage – 1: Qualification Bid - The first stage would involve technical and financial capability for undertaking the Project based on the Qualification Bid. Only those Bids that meet the Qualifying Criteria (the “**Eligible Bidders**”), as set out in Clause 3.4 of this RFP would qualify for the next stage of evaluation
- Stage – 2 of the evaluation i.e. Live Technical Demonstration as per Clause 3.5. Only those Bids that pass the Stage – 2 evaluation (“**Qualified Bidders**”) of this RFP shall qualify for opening of their Commercial proposals.
- Stage – 3 Commercial Proposals – Commercial Proposals of only Qualified Bidders shall be opened and further evaluated as per the evaluation methodology provided in Clause 3.7.

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

1.2.2 The Authority will first prepare the list of qualified Bidders including their successors (the “**Bidders**”, which expression shall, unless repugnant to the context, include the Members of the Consortium). Financial Bids of only the Qualified Bidders shall be opened (the “**Bids**”) in accordance with the terms specified in the Bidding Documents.

1.3 VALIDITY OF THE PROPOSAL

1.3.1 The Bid shall be valid for a period of not less than 180 days from the date specified in Clause 1.8 for submission of bids.

1.4 BID SECURITY OR EARNEST MONEY DEPOSIT

1.4.1 A Bidder is required to deposit, along with its Bid, bid security as mentioned in the Clause 2.19 of the RFP in the form of Bank guarantee/ Demand Draft as specified in Form 5 of this RFP.

1.5 DUE DILIGENCE BY BIDDERS

1.5.1 Bidders are encouraged 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.

1.5.2 Subject to Clause 1.2.1, the Project will be awarded to the Lowest Ranked Bidder based on evaluation of bids on technical and financial criteria as set out in this RFP.

1.6 PRE-BID QUERIES

- 1.6.1 Further and other details of the process to be followed and the terms thereof are spelt out in this RFP. Any queries or request for additional information concerning this Project or RFP shall be submitted by e-mail to the officer designated in Clause 1.7.2 below.

The Bidders may address their queries to the nodal officer specified below on or before the date mentioned in Clause 1.8.

All the queries shall be addressed to the address given here under and also should be sent to the email provided herein in MS Excel format as per the format given below;

Format for submission of queries

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

Address

Municipal Commissioner

Solapur Municipal Corporation

Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines

Solapur 413001

Email: solapurcitydcl@gmail.com with a cc to avadhut.sutar@ext-crisil.com

Contact No. 0217 - 2318800

1.7 AVAILABILITY OF RFP DOCUMENT

- 1.7.1 Interested parties may obtain the RFP document from the www.mahatenders.gov.in or may obtain from the office of Authority.

- 1.7.2 Further, all the parts of the Bid (PART 1: Qualification and, PART 2: Financial Bid) must be submitted online on ww.mahatenders.gov.in. Part1: Qualification Bid will also be submitted in hard copy along with EMD and Tender Fee to:

Municipal Commissioner

Solapur Municipal Corporation

Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines

Solapur 413001

Email: solapurcitydcl@gmail.com,

Contact No. 0217 - 2318800

1.8 SCHEDULE OF BIDDING PROCESS

The Authority shall endeavor to adhere to the following schedule:

#	Information	Details
1.	RFP No. and Date	2018-19/01 26 April 2018
2.	Last date for submission of written queries for clarifications along with email for sending queries (No pre bid queries after this date will be entertained)	02/05/2018 at 4.00 PM solapurcitydcl@gmail.com Avadhut.sutar@ext-crisil.com
3.	Date and venue of pre-bid conference	03.00 PM 03/05/2018 Meeting Hall, Solapur Municipal Corporation, Solapur
4.	Release of response to clarifications	05/05/2018
5.	Last date (deadline) for submission of bids	03.00 PM 17/05/2018
6.	Opening of Qualification bids	04.00 PM 18/05/2018
7.	Technical Presentation by the Concessionaire	To be intimated later
8.	Place, Time and Date of opening of Financial proposals received in response to the RFP notice	To be intimated later
9.	Website for downloading RFP	www.mahatenders.gov.in
10.	Tender Fee	Non-refundable Tender fee of amount INR 23,600/- payment to Municipal Commissioner Solapur Municipal Corporation
11.	Submission of Bid	<p>Technical Bid (PDF Format) (Online + Hard Copy) Soft Copy of the Technical Bid to be submitted by 3:00 PM 17/05/2018. Hard Copy of the Technical Bid to be submitted by 3:00 PM 18/05/2018</p> <p>Financial Bid (Online only)</p> <ol style="list-style-type: none"> 1) Operation and Maintenance Cost (INR/ POLE/ Year) (BOQ in EXCEL Format) 2) Guaranteed Energy Savings (%) and Shared Energy Savings (%) (BOQ in PDF Format) Form 12 3) Unit Rate for Infrastructure Cost (BOQ in PDF Format) Appendix VI
12.	Contact person	Asst. Engineer (Light), Solapur Municipal Corporation Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines Solapur 413001

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 The technical details related to the Project is being provided only as a preliminary reference by way of assistance to the Bidders who are expected to carry out their own surveys, investigations and other detailed examination of the Project before submitting their Bids. Nothing contained in this RFP shall be binding on the Authority nor confer any right on the Bidders, and the Authority shall have no liability whatsoever in relation to or arising out of any or all contents of this RFP.
- 2.1.3 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.
- 2.1.4 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.
- 2.1.5 The Bidder shall provide a Bid Security of Rs. 20, 00,000/- (Rupees Twenty Lakhs only) in accordance with the provisions of this RFP. The Bidder has the option to provide the Bid Security either as a Demand Draft or in the form of a Bank Guarantee acceptable to the Authority, as per format at Form 5.
- 2.1.6 The validity period of the Bank Guarantee or Demand Draft, as the case may be, shall not be less than 180 (one hundred and eighty) days from the Bid Due Date, inclusive of a claim period of 60 (sixty) days, and may be extended as may be mutually agreed between the Authority and the Bidder. The Bid shall be summarily rejected if it is not accompanied by the Bid Security. The Bid Security shall be refundable no later than 60 (sixty) days from the Bid Due Date except in the case of the Selected Bidder whose Bid Security shall be retained till it has provided a Performance Security under the Concession Agreement.
- 2.1.7 The Bidder should submit a Power of Attorney as per the form 6 Hard Copy, authorizing the signatory of the Bid to commit the Bidder.
- 2.1.8 In case the Bidder is a Consortium, the Members thereof should furnish a Power of Attorney in favor of the Lead Member in the format at Form 7.
- 2.1.9 The Bidder may be a sole applicant (the "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 to develop this Project and

who has been issued LOA by the Authority. The Successful Bidder would be liable for the execution of the Project in accordance with the terms of the Concession Agreement.

- 2.1.10 Any condition or qualification or any other stipulation contained in the Bid shall render the Bid liable to rejection as a non-responsive Bid.
- 2.1.11 The Bid and all communications in relation to or concerning the Bidding Documents and the Bid shall be in English language.
- 2.1.12 The documents including this RFP and all attached documents, provided by the Authority are and shall remain or become the property of the Authority 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 2.1.12 shall also apply mutatis mutandis to Bids and all other documents submitted by the Bidders, and the Authority will not return to the Bidders any Bid, document or any information provided along therewith.
- 2.1.13 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 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 for, inter alia, the time, cost and effort of the Authority, including consideration of such Bidder’s Bid, without prejudice to any other right or remedy that may be available to the Authority 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 not more than 24% (twenty four 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 more than 24% (Twenty four 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 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 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 2.1.13, 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.

2.1.14 A Bidder shall be liable for disqualification and forfeiture of Bid Security if any legal, financial or technical adviser of the Authority in relation to the Project is engaged by the Bidder, its Members or any Associate thereof, as the case may be, in any manner for matters related to or incidental to such Project during the Bidding Process or subsequent to the (i) issue of the LOA or (ii) execution of the Concession Agreement. In the event any such adviser is engaged by the Selected Bidder or Concessionaire, as the case may be, after issue of the LOA or execution of the Concession Agreement for matters related or incidental to the Project, then notwithstanding anything to the contrary contained herein or in the LOA or the Concession Agreement and without prejudice to any other right or remedy of the Authority, including the forfeiture and appropriation of the Bid Security or Performance Security, as the case may be, which the Authority may have thereunder or otherwise, the LOA or the Concession Agreement, as the case may be, shall be liable to be terminated without the Authority being liable in any manner whatsoever to the Selected Bidder or Concessionaire for the same. For the avoidance of doubt, this disqualification shall not apply where such adviser was engaged by the Bidder, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of RFP for the Project. Nor will this disqualification apply where such adviser is engaged after a period of 3 (three) years from the date of commercial operation of the Project.

2.1.15 This RFP is not transferable.

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

2.2 CHANGE IN COMPOSITION OF CONSORTIUM

- 2.2.1 Change in the composition of a Consortium will not be permitted after submission of the bids;
- 2.2.2 The Members of Consortium other than the Lead Member whose Financial Capacity and Technical Capacity has been utilized for the purposes of qualification and are going to be considered for calculation of Stage – 2 evaluation, should for a period of 3 (three) years from the date of commercial operation of the Project, hold equity share capital not less than 26% (twenty six percent) of the subscribed and paid up equity of the SPV-as specified in Clause 3.9.2. The total number of Members of the Consortium whose Financial Capacity and Technical Capacity has been utilized for qualification cannot exceed 3(three) including the Lead Member. For the avoidance of doubt, there can be more than 3 (three) consortium members, but only 3 (three) members, including lead member, would be evaluated for qualification;
- 2.2.3 The Lead Member should throughout the Concession Period, hold equity share capital not less than 26% (twenty six percent) of the subscribed and paid up equity of the SPV;
- 2.2.4 The Bidder or the Bidding Consortium should throughout the Concession Period, hold equity share capital not less than 51% (fifty one percent) of the subscribed and paid up equity of the SPV;
- 2.2.5 The Consortium shall submit a Power of Attorney and, a Joint Bidding Agreement substantially in the form at Form 7 and APPENDIX III respectively along with the Bid, prior to the Bid Due Date. The Joint Bidding Agreement, to be submitted along with the Bid, shall, inter alia:
- a) convey the intent to form an SPV with shareholding/ownership equity commitment(s) in accordance with this RFP, which would enter into the Concession Agreement and subsequently carry out all the responsibilities as Concessionaire in terms of the Concession Agreement, in case the right to undertake the Project is awarded to the Consortium;
 - b) clearly outline the proposed roles and responsibilities, if any, of each Member;
 - c) commit the minimum equity stake to be held by each Member;
 - d) commit that each of the members, whose experience will be evaluated for the purposes of this RFP, shall subscribe to the paid up and subscribed equity of the SPV as set out in Clause 2.2.2 and shall further commit that the Lead Member shall hold equity share capital not less than 26% (twenty six percent) of the subscribed and paid up equity share capital of the SPV throughout the Concession Period;
 - e) members of the Consortium undertake that they shall collectively hold at least 51% (fifty one per cent) of the subscribed and paid up equity of the SPV at all times during the Concession Period.
 - f) include a statement to the effect that all Members of the Consortium shall, be liable jointly and severally for all obligations of the Concessionaire in relation to the Project until the financial close of the Project is achieved in accordance with the Concession Agreement.
- 2.2.6 Where the Bidder is a Consortium, change in composition of the Consortium may be permitted by the Authority during the Bid Stage, only where
- a) the Lead Member continues to be the Lead Member of the Consortium;

- b) 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 technical and financial eligibility criteria for Bidders.
- 2.2.7 Approval for change in the composition of a Consortium shall be at the sole discretion of the Authority and must be approved by the Authority in writing. The Bidder must submit its application for change in composition of the Consortium no later than 15 (fifteen) days prior to the Bid Due Date.
- 2.2.8 The modified/ reconstituted Consortium shall submit a revised Joint Bidding Agreement and a Power of Attorney, substantially in the form at Format for Joint bidding arrangement.

2.3 CHANGE IN OWNERSHIP

- 2.3.1 By submitting the Bid, the Bidder acknowledges that it is qualified on the basis of Technical Capacity and Financial Capacity of those of its Consortium Members who shall, until the 2nd (second) anniversary of the date of commercial operation of the Project, hold equity share capital representing not less than: (i) 26% (twenty six per cent) of the subscribed and paid-up equity of the Concessionaire; and (ii) 5% (five per cent) of the Total Project Cost specified in the Concession Agreement. The Bidder further acknowledges and agrees that the aforesaid obligation shall be the minimum, and shall be in addition to such other obligations as may be contained in the Concession Agreement, and a breach hereof shall, notwithstanding anything to the contrary contained in the Concession Agreement, be deemed to be a breach of the Concession Agreement and dealt with as such thereunder. For the avoidance of doubt, the provisions of this Clause 2.3.1 shall apply only when the Bidder is a Consortium.
- 2.3.2 By submitting the Bid, the Bidder shall also be deemed to have acknowledged and agreed that in the event of a change in control of a Member whose Financial or Technical Capacity was taken into consideration for the purposes of evaluation under and in accordance with this RFP, the Bidder shall be deemed to have knowledge of the same and shall be required to inform Authority forthwith along with all relevant particulars about the same and Authority may, in its sole discretion, disqualify the Bidder or withdraw the LoA from the Successful Bidder, as the case may be. In the event such change in control occurs after signing of the Concession Agreement but prior to financial close of the Project, it would, notwithstanding anything to the contrary contained in the Concession Agreement, be deemed to be a breach of the Concession Agreement, and the same shall be liable to be terminated without Authority and its advisors being liable in any manner whatsoever to the Concessionaire. In such an event, notwithstanding anything to the contrary contained in the Concession Agreement, Authority shall be entitled to forfeit and appropriate the Performance Security, as liquidated damages, without prejudice to any other right or remedy that may be available to Authority under the Bidding Documents or otherwise.

2.4 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 will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

2.5 SITE VISIT AND VERIFICATION OF INFORMATION

- 2.5.1 Bidders are encouraged to submit their respective Bids after doing a thorough survey of project site and ascertaining for themselves the site conditions, location, surroundings, climate, availability of power, 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.
- 2.5.2 It shall be deemed that by submitting a Bid, the Bidder has:
- a) made a complete and careful examination of the Bidding Documents;
 - b) received all relevant information requested from the Authority;
 - c) 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 relating to any of the matters;
 - d) 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;
 - e) 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
 - f) acknowledged that it does not have a Conflict of Interest; and
 - g) agreed to be bound by the undertakings provided by it under and in terms hereof.
- 2.5.3 The Authority 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.

2.6 VERIFICATION AND DISQUALIFICATION

- 2.6.1 The Authority 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, 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 shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of the Authority thereunder.
- 2.6.2 The Authority 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, the supplemental information sought by the Authority for evaluation of the Bid.

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 Highest Bidder gets disqualified / rejected, then the Authority reserves the right to:

- i. take any such measure as may be deemed fit in the sole discretion of the Authority, including annulment of the Bidding Process subject to provisions of Section 3 of this RFP.

2.6.3 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, 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 to the Successful Bidder or the Concessionaire, as the case may be, without the Authority being liable in any manner whatsoever to the Successful Bidder or Concessionaire In such an event, the Authority 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 under the Bidding Documents and/ or the Concession Agreement, or otherwise.

2.7 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 2.9.

Section1	Introduction
Section 2	Instructions to Bidders
Section 3	Evaluation of Bids
Section 4	Fraud and Corrupt Practices
Section 5	Pre-Bid Conference
Section 6	Miscellaneous
Appendix – I	Technical Bid Templates
Form – 1	Technical Proposal Covering Letter
Form – 2	Details of the Bidder
Form – 3	Financial Capacity of the Bidder
Form – 4	Statement of Legal Capacity
Form – 5	Form of Bank Guarantee for Bid Security
Form – 6	Power of Attorney for Signing of Bids
Form – 7	Power of Attorney for Lead Member of Consortium

Form – 8	Format of Technical Capacity Evaluation
Form – 9	Undertaking on Total Responsibility
Form – 10	Declaration for opening an office in Solapur
Form – 11	Declaration that the Bidder has not been Blacklisted
Appendix – II	Financial Proposal Template
Form – 12	Financial Bid Format
Appendix – III	Format for Joint Bidding Agreement
Appendix – IV	Scope of Work and Technical Specifications
Appendix – IV	Unit Rates for Infrastructure Development Works

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

2.8 CLARIFICATIONS

2.8.1 Bidders requiring any clarification on the RFP may notify the Authority in writing or e-mail in accordance with Clause 1.6. They should send in their queries on or before the date mentioned in the Clause 1.6. The Authority 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 and will not be mailed individually.

2.8.2 The Authority shall endeavor to respond to the questions raised or clarifications sought by the Bidders. However, the Authority 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 to respond to any question or to provide any clarification.

2.8.3 The Authority may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Bidders. All clarifications and interpretations issued by the Authority shall be deemed to be part of the Bidding Documents. Verbal clarifications and information given by Authority or its employees or representatives shall not in any way or manner be binding on the Authority.

2.9 AMENDMENT OF RFP

2.9.1 At any time prior to the Bid Due Date, the Authority 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.

2.9.2 Any Addendum/ Corrigendum issued hereunder will be in writing and shall be uploaded on the Authority’s website.

2.9.3 In order to afford the Bidders a reasonable time for taking an Addendum/ Corrigendum into account, or for any other reason, the Authority may, in its sole discretion, extend the Bid Due Date.

2.10 FORMAT AND SIGNING OF BID

- 2.10.1 The Bidder would provide all the information as per this RFP. Authority reserves the right to evaluate only those Bids that are received in the required format, complete in all respects and in line with the instructions contained in this RFP.
- 2.10.2 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.

2.11 SEALING AND MARKING OF BIDS

- 2.11.1 The Bidders will submit their Bids online:
- i. The online submission shall be according to e-procurement guidelines issued by Government of Maharashtra 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. Signed and stamped RFP, DCA, Uploaded Responses to Pre Bid Queries (if any) shall be submitted along with the 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 01 (One) hard copy of uploaded Qualification Bid Documents, which shall be marked as "Qualification Bid" in envelope only. In the event of any discrepancy between the uploaded and the hard copy, the hardcopy 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.
- 2.11.2 The Bid shall be typed or printed. The Bid shall be signed 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.
- 2.11.3 The Bid shall contain no alterations or additions, except those to comply with instructions issued by Authority 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.
- 2.11.4 Each of the envelopes shall indicate the complete name, address, telephone number and facsimile number of the Bidder.

2.12 BID DUE DATE AND TIME

2.12.1 Bids should be submitted on or before the Bid Due Date at the address provided in Clause 1.7.2 in the manner and form as detailed in this RFP.

2.12.2 The Authority may, in its sole discretion, extend the Bid Due Date by issuing an Addendum in accordance with Clause 2.9 uniformly for all Bidders.

2.13 MODIFICATIONS / SUBSTITUTION / WITHDRAWAL OF BIDS

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

2.14 LATE BIDS

2.14.1 The e-Procurement website will not accept bid submission post the bid submission date and time.

2.15 REJECTION OF BIDS

2.15.1 Notwithstanding anything contained in this RFP, the Authority 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 rejects or annuls all the bids, it may, in its discretion, invite all eligible Bidders to submit fresh Bids hereunder.

2.15.2 The Authority 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.

2.16 VALIDITY OF BIDS

2.16.1 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.

2.17 CONFIDENTIALITY

2.17.1 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 in relation to, or matters arising out of, or concerning the Bidding Process. The Authority 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 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 or as may be required by law or in connection with any legal process.

2.18 CORRESPONDENCE WITH THE BIDDER

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

2.19 BID SECURITY

2.19.1 The Bidder shall furnish as part of its Bid, a Bid Security referred to in Clause 2.1.5 hereinabove. The Bid Security may be in the form of an irrevocable, unconditional and first demand bank guarantee issued by a Nationalized Bank in India, in favour of “Solapur Municipal Corporation” in the format at Form 5 or in the form of a Demand Draft as mentioned in Clause **Error! Reference source not found..** The Bid Security shall have a validity period of not less than 180 (one hundred and eighty) days from the Bid Due Date, inclusive of a claim period of 60 (sixty) days, and may be extended as may be mutually agreed between Authority and the Bidder from time to time. For the avoidance of doubt, Nationalized Bank shall mean a bank as defined under Section 2(e) of the Reserve Bank of India Act, 1934.

2.19.2 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 Qualification Bid Opening.

2.19.3 Any Bid not accompanied by the Bid Security shall be summarily rejected as non-responsive.

2.19.4 The Bid Security of unsuccessful Bidders will be returned, without any interest, as promptly as possible after execution of the Concession Agreement by the Successful Bidder or when the Bidding Process is cancelled. Where Bid Security has been paid by deposit, the refund thereof shall be in the form of an account payee demand draft in favour of the unsuccessful Bidder(s). Bidders may by specific instructions in writing to Authority give the name and address of the person in whose favour the said demand draft shall be drawn for refund, failing which it shall be drawn in the name of the Bidder and shall be mailed to the address given on the Bid.

2.19.5 The Successful Bidder’s Bid Security will be returned, without any interest, upon the Concessionaire signing the Concession Agreement and furnishing the Performance Security in accordance with the provisions thereof. The Successful Bidder shall extend the validity period of its Bid Security so as for it to be available until the execution of the Concession Agreement.

2.19.6 Authority shall be entitled to forfeit and appropriate the Bid Security as liquidated damages inter alia in any of the events specified in Clause 2.19.7 herein below and pursuant to other provisions of this RFP providing for a forfeiture of Bid Security. The Bidder, by submitting its Bid pursuant to this RFP, shall be deemed to have acknowledged and confirmed that Authority will suffer loss and damage on account of withdrawal of its Bid or for any other default by the Bidder during the period of Bid validity as specified in this RFP. No relaxation of any kind on Bid Security shall be given to any Bidder.

2.19.7 The Bid Security shall be forfeited as Damages without prejudice to any other right or remedy that may be available to the Authority under the Bidding Documents and/ or under the Concession Agreement, or otherwise, under the following conditions:

- i. If the Bidder submits a non-responsive Bid;
- ii. If a Bidder engages in a corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice as specified in Section 4 of this RFP;

- iii. If a Bidder withdraws its Bid during the period of Bid validity as specified in this RFP and as extended by mutual consent of the respective Bidder(s) and the Authority;;
- iv. In case of a successful Bidder, if the Bidder fails:
 - 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 incorporate the SPV or such SPV 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.
- v. In case the Selected Bidder, having signed the Concession Agreement, commits any breach thereof prior to furnishing the Performance Security.

2.20 ARBITRATION

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

2.20.2 The place of arbitration shall be Solapur, Maharashtra.

3 EVALUATION OF BIDS

3.1 OPENING AND EVALUATION OF BIDS

- 3.1.1 The Authority shall open the Qualification Bids at 15:00 hours on the Bid Due Date, at the place specified in Clause 1.8 and in the presence of the Bidders who choose to attend.
- 3.1.2 The Authority will subsequently examine and evaluate the Bids in accordance with the provisions set out in this Section 3.
- 3.1.3 To facilitate evaluation of Bids, the Authority may, at its sole discretion, seek clarifications in writing from any Bidder regarding its Bid.

3.2 TESTS OF RESPONSIVENESS

- 3.2.1 Prior to evaluation of Bids, the Authority 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 2.10;
 - b) it is received by the Bid Due Date including any extension thereof pursuant to Clause 2.12.2;
 - c) it is accompanied by the Bid Security as specified in Clause 2.19;
 - 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 , 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 Power of Attorney for Lead Member of the Consortium designating one of the Members, as per the Joint Bidding Agreement, 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 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 APPENDIX III should be submitted along with the Bid.
 - g) Members of the Consortium shall submit a Joint Bidding Agreement, specific to this Project, for the purpose of submitting the Bid as per format provided in APPENDIX III. The Joint Bidding Agreement 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.

- 3.2.2 The Authority 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 in respect of such Bid. At

the same time, the authority would notify the other Bidders that they have not been qualified. SMC will not entertain any query or clarification from Bidders who fail to qualify.

3.3 SELECTION OF BIDDER

3.3.1 Subject to the provisions of Clause 2.15.1, the Bidder whose Bid is adjudged as responsive in terms of Clause 3.2.1, has qualified under the evaluation of Stage – 1 – Qualification and Stage – 2 Live Technical Demonstration in terms of Clause 3.4 and Clause 3.5 respectively and has quoted the most beneficial proposal to the Authority, shall be declared as successful bidder (the **Successful Bidder**). In the event that Authority rejects or annuls all the Bids, it may, in its discretion, invite fresh Bids.

3.3.2 Evaluation sequence of the Bids received shall be in the following order;

1. **Stage – 1** : Evaluation of Qualification Envelope (the **“Stage – 1”**)
2. **Stage – 2** : Live Technical Demonstration (the **“Stage – 2”**) and
3. **Stage – 3** : Evaluation of Commercial Proposals (the **“Stage – 3”**)

3.4 EVALUATION OF QUALIFICATION ENVELOPE

3.4.1 For the purpose of qualifying under Stage 1, the Bidder shall have to demonstrate the minimum Financial Capacity as stipulated under Clause 3.4.2 and minimum Technical Capacity as stipulated under Clause 3.4.4 of this RFP document.

3.4.2 Financial Eligibility Criteria

3.4.2.1 For the purpose of qualifying under this category, the Bidder shall have to demonstrate the following minimum Net Worth (the **“Financial Capacity”**):

- i. Minimum Net worth of Rs.15 crores (Rupees Fifteen crores only) at the close of the preceding Financial Year.

In case of a Consortium, the combined net worth of those Members, who have and shall continue to have an equity share of at least 26% (twenty six per cent) each in the SPV, should satisfy the above conditions of eligibility; provided that each such Member shall, for a period of 3 (three) years from the date of commercial operation of the Project, hold equity share capital not less than: (i) 26% (twenty six per cent) of the subscribed and paid up equity of the SPV.

3.4.3 Financial Information for purpose of evaluation

- 3.4.3.1 In computing the Financial Capacity of the Bidder/ Bidding Consortium under clause 3.4.2.1 the Net worth of Associates would also be eligible as explained in Clause 2.1.13 (i).
- 3.4.3.2 The Bidder and members of the Consortium shall provide a certificate from its statutory auditor specifying the Net Worth of the Bidder in the immediately preceding Financial Year. The certificate shall also specify the methodology adopted for calculating such Net Worth. However, in the case of publicly listed companies, Audited Financial Statements for the respective years will suffice and a certificate from its statutory auditor is not required.
- 3.4.3.3 The Bid must be accompanied by the audited annual reports of the Bidder (or Members who are to be evaluated in case of a Consortium) for the last 1 (one) Financial Year, preceding the year in which the Bid is made.
- 3.4.3.4 In case the annual accounts for the latest Financial Year are not audited and therefore the Bidder could not make it available, the Bidder shall give an undertaking to this effect and the statutory auditor shall certify the same. In such a case, the Bidder shall provide the audited annual reports for 1 (one) year preceding the year for which the audited annual report is not being provided.
- 3.4.3.5 In case of foreign companies, a certificate from a qualified external auditor who audits the book of accounts of the Bidder in the formats provided in the country of residence where the project has been executed shall be accepted, provided it contains all the information as required in the prescribed format of the RFP.
- 3.4.3.6 The Bidder must establish a minimum Net Worth as specified in Clause 3.4.2.1, and provide details as per format at Form 3.
- 3.4.3.7 Notwithstanding anything to the contrary contained herein, in the event that the Bid Due Date falls within 3 (three) months of the closing of the latest Financial Year of a Bidder, it shall ignore such Financial Year for the purposes of its Bid and furnish all its information and certification with reference to the 1 (one) Financial Year, preceding its latest Financial Year. For the avoidance of doubt, the Financial Year shall, for the purposes of a Bid hereunder, mean accounting year followed by the Bidder in the course of its normal business.
- 3.4.3.8 Bidders not meeting the Financial Capacity as specified in Clause 3.4.2.1 shall be disqualified from further evaluation (Stage – 2 and Stage – 3) and their Bid Security shall be returned as per Clause 2.19.4.
- 3.4.4 Technical Eligibility Criteria**
- 3.4.4.1 In addition to the Financial Capacity, the Technical Capacity of the Bidder shall be assessed under this category. In the case of a Consortium, any of Members, who have and shall continue to have an equity share of at least 26% (twenty six percent) each in the SPV, shall be considered for the purpose of evaluation. Such Members who have been evaluated under this category shall until the 3rd (third) anniversary of the date of commercial operation of the Project, hold equity share capital representing not less than 26% (twenty six per cent) of the subscribed and paid-up equity of the Concessionaire and the Lead Member shall hold equity share capital representing not less than 26% (twenty six per cent) of the subscribed and paid-up equity of the Concessionaire, until the expiry of the Concession.
- 3.4.4.2 For qualifying under this category, the Bidder shall, over the past 5 (five) Financial Years preceding the Bid Due Date, have (“**Technical Capacity**”):
- (a) It shall have work orders for similar projects in energy efficient street lighting having at least 30000 Luminaires and shall have previously executed and commissioned at least 5000 Luminaire through a centralized command and monitoring system (CCMS) in single work order

in any city, nationally or internationally with any government, semi-government organization through an ESCO or PPP mode.

- 3.4.4.3 The projects referred to by the Bidder in order to meet this qualification requirement shall have demonstrated minimum energy savings of 50% and the Project should be in operation.
- 3.4.4.4 The Bidders meeting the eligibility criteria as per Clause 3.4.2 and 3.4.4 (the “**Eligible Bidder**”) shall be qualified for the evaluation of Stage – 2 Live Technical Demonstration.

3.5 LIVE TECHNICAL DEMONSTRATION

- 3.5.1 All the Eligible Bidders will be asked for Live Demonstration of LED lamps (6-8 LED luminaires of each type of luminaire) and proposed CCMS system which are to be installed during project execution. This demonstration will be monitored and verified jointly by SMC and its consultants or a technical evaluation committee set up by the SMC. Bidders will not be paid any charges for Live Demonstration. Bidders 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 and no dimming of the luminaires shall be allowed for demonstration of minimum 60% savings. 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 for the Successful Bidder. The detailed method proposed to be adopted for technical demonstration is provided in APPENDIX V.
- 3.5.2 In case, Live Demonstration does not meets the criteria as specified in Technical Specification, then the respective Bidder will be disqualified and Financial / Commercial Proposals of such Bidders will not be opened. Commercial Proposals of only those Bidders will be opened who have successfully passed the Live Technical Demonstration (“**Qualified Bidders**”).

3.6 FINANCIAL BIDS

- 3.6.1 Only those Bidders qualifying Stage – 1 and Stage – 2 of the evaluation as specified in Clause 3.4 and Clause 3.5 respectively, will qualify for the opening of their Commercial Proposals.
- 3.6.2 The Commercial Proposal of the Bidder shall comprise of three parts;
- (a.) Guaranteed energy savings that the Bidder shall achieve post implementation of the Project (the “**Guaranteed Energy Savings**”) where the quoted Guaranteed Energy Savings shall be minimum 60% and
 - (b.) Shared energy savings that the Bidder shall share with the SMC post implementation of the project during the project operations phase (the “**Shared Energy Savings**”) where the quoted Shared Energy Savings shall be minimum 10% and .
 - (c.) Per pole per annum operations and Maintenance cost that the Bidder will charge to SMC during the Project operations phase (the “**Operation and Maintenance Cost**”)
- 3.6.3 The Guaranteed Energy Savings and Shared Energy Savings shall be provided in % (percentage) terms and the Operation and Maintenance Cost shall be provided in the INR/Pole/Year including all applicable taxes.

- 3.6.4 Bidders shall note that any additional Energy Savings achieved through allowable dimming, over and above the quoted Minimum Guaranteed Energy Savings, shall be shared with the SMC at 50:50 ratio.
- 3.6.5 The Bidders shall note that per pole per year Operation and Maintenance Cost to be quoted shall not exceed Rs. 350 which shall be escalated by 5% every year.

3.7 EVALUATION OF COMMERCIAL PROPOSALS

3.7.1 The Commercial Proposals of Qualified Bidders would be evaluated on the basis of best commercial terms to the Authority (the “**Most Beneficial Offer**”). The information requirements and guidelines for submission of the Commercial Proposal are detailed in APPENDIX II of this RFP document. For avoidance of doubt, the methodology for evaluation of the Commercial Proposals and arriving at the most beneficial proposal is illustrated below;

If the bidder submits the following Bids,

Sr No	Bidder Name	Guaranteed Energy Savings (%)	Shared Energy Savings (%)	Operations and Maintenance Cost (INR/Pole/Year)
1	Bidder – A	61%	10%	250
2	Bidder – B	70%	11%	300
3	Bidder – C	77%	12%	345
4	Bidder – D	80%	10%	349

Then,

Step – 1 – Check whether the Offers are meeting the Minimum requirements regarding the Guaranteed Energy Savings (60%) and Shared Energy Savings (10%).

Sr No	Bidder Name	Guaranteed Energy Savings (%)	Shared Energy Savings (%)
1	Bidder – A	61%	10%
2	Bidder – B	70%	11%
3	Bidder – C	77%	12%
4	Bidder – D	80%	10%
	Minimum Requirements Check	All Commercial Offers are meeting the Minimum requirement of 60%	All Commercial Offers are meeting the Minimum requirement of 10%

Commercial Offers are acceptable for further evaluation.

Step – 2 – Evaluate the Most Beneficial Proposal.

Calculations for evaluating the Most Beneficial Proposal is illustrated as below;

Sr No	Parameter	Unit	Value
A	Baseline Information of SMC		
1	Current annual energy consumption of SMC for street lighting	Mn kwh pa	20.58
2	Tariff rate for calculation of energy savings	Rs./Unit	6.6
3	Total Number of poles	Number	31000

4	Maximum Tenure for the ESCO project	Years	10			
B	Bidders Quotes					
1	Name of the Bidder		Bidder - 1	Bidder - 2	Bidder - 3	Bidder - 4
2	Guaranteed energy savings for duration of ESCO project	%	61%	70%	77%	80%
3	Share of actual savings with SMC	%	10%	11%	12%	10%
4	Per pole per year cost of maintenance in INR	INR/Pole/Year	250	300	345	350
C	Evaluation of Most Beneficial Offer					
1	Guaranteed Energy Savings [A1xB2]	Mn kwh pa	12.55	14.41	15.85	16.46
2	Shared Savings with SMC [B3xC1]	Mn kwh pa	1.26	1.58	1.90	1.65
3	Monetary Value of Shared Savings to SMC [C2xA2]	INR Lakhs pa	82.86	104.59	125.51	108.66
4	Maintenance cost per year paid by SMC to ESCO [A3xB4]	INR Lakhs pa	77.50	93.00	106.95	108.50
5	Net Cost/Benefit to SMC [C3-C4]	INR Lakhs pa	5.36	11.59	18.56	0.16
6	Ranking of Offers		Third	Second	First	Fourth

*Mn Kwh pa – Million kwh per annum

3.8 SUCCESSFUL BIDDER

- 3.8.1 Evaluation of the Commercial Offers shall be done based on the least cost to the Authority as illustrated above and Bidder ranked **First** shall be the “**Lowest Ranked Bidder**” subject to other qualifications requirements as laid out in this RFP. Accordingly other Bidders shall be ranked “Second” and so on.
- 3.8.2 The Bidder ranked First in accordance with the above procedure would be declared as the “**Successful Bidder**”.
- 3.8.3 In the event that two or more Bidders are ranked same, the Bid evaluation (the “**Tie Bidders**”), the Successful Bidder shall be the one whose Net Worth is highest.
- 3.8.4 In the event that the First Rank Bidder withdraws or is not selected for any reason in the first instance (the “first round of bidding”), all the remaining Bidders may be invited to revalidate or extend their respective Bid Security, as necessary, and match the Bid of the aforesaid First Rank Bidder (the “**second round of bidding**”). If in the second round of bidding, only one Bidder matches the First Rank Bidder, it shall be the Selected Bidder. If two or more Bidders match the said First Rank Bidder in the second round of bidding, then the Bidder whose Bid was higher as compared to other Bidder(s) in the first round of bidding shall be the Selected Bidder. For example, if the Third and Fifth ranked Bidders in the first round of bidding offer to match the said First Rank Bidder in the second round of bidding, the said Third ranked Bidder shall be the Selected Bidder.
- 3.8.5 In the event that no Bidder offers to match the First Rank Bidder in the second round of bidding as specified in Clause 3.8.4, Authority may, in its discretion, invite fresh Bids (the “**third round of bidding**”) from all Bidders except the Lowest Bidder of the first round of bidding, or annul the Bidding Process, as the case may be. In case the Bidders are invited in the third round of bidding to revalidate or extend their Bid Security, as necessary, and offer fresh Bids, they shall be eligible for submission of fresh Bids provided, however, that in such third round of bidding only such Bids shall be eligible for consideration which are lower than the Bid of the Second ranked Bidder in the first round of bidding.

3.9 ISSUE OF LOA AND SIGNING OF ENERGY SAVING PERFORMANCE CONTRACT

- 3.9.1 Subsequent to the Selection of the Successful Bidder, a letter of award (“LoA” or “Letter of Award”) would be issued, in duplicate, to the Successful Bidder, by the Authority. Within 7 (seven) days from the date of issue of the LoA, the Successful Bidder shall sign and return the duplicate copy of the LoA in acknowledgement thereof. In the event the duplicate copy of the LOA duly signed by the Successful Bidder is not received by the stipulated date, Authority may, unless it consents to extension of time for submission thereof, appropriate the Bid Security of such Bidder as Damages on account of failure of the Successful Bidder to acknowledge the LOA, and the next eligible Bidder may be considered. After receipt of the acknowledgement from the Successful Bidder, Authority will promptly notify other Bidders that their Commercial Proposals have been unsuccessful and their Bid Security shall be returned within 30 (thirty) days, without interest, of the signing of the Concession Agreement with the Successful Bidder. The Successful Bidder shall have to enter into the Concession Agreement with SMC within 45 (forty five) days from the date of issue of the LoA.
- 3.9.2 Formation of Special Purpose Vehicle (SPV) for Project Implementation
- a. After the issue of the LoA, the Successful Bidder, if a Consortium, shall incorporate a special purpose company specifically formed and incorporated in India only for the purpose of undertaking the Project pursuant to the Concession Agreement (“SPV” or the "Special Purpose Company") as a limited liability company under the Companies Act 2013. The Successful Bidder shall ensure that the Special Purpose Company is incorporated and capitalized within thirty (30) days from the date of issue of the LoA and promptly upon such incorporation and capitalization provide evidence thereof to the Authority.
 - b. Subject to the terms of the Concession Agreement, in the event that the Successful Bidder is a Bidding Company, the shareholding of the Special Purpose Company shall be owned directly by such Bidding Company.
 - c. In the event that the Successful Bidder is a Consortium, the shareholding of the Special Purpose Company shall be owned directly by the Members in accordance with the terms of the Bidding Documents including the Concession Agreement.
 - d. The Special Purpose Company shall execute the Concession Agreement within the period prescribed in Clause 3.9.1 (unless such period is extended by Authority). Upon or prior to such execution by the Special Purpose Company shall submit Authority the Performance Security in accordance with the Bidding Documents.
- 3.9.3 Authority reserves the right to cancel the award in case the Successful Bidder fails to incorporate the Special Purpose Company or the Special Purpose Company fails or refuses to sign the Concession Agreement and/or does not submit the Performance Security and/or the other documents mentioned in the Bidding Documents.
- 3.9.4 The Successful Bidder shall have to enter into the Concession Agreement with Authority within 45 (forty five) days from the date of issue of the LoA. The Successful Bidder on or before the date of signing of the Concession Agreement shall:
1. Furnish the Performance Security by way of an irrevocable Bank Guarantee issued by a Nationalized bank in favour of Solapur Municipal Corporation, as required under the Concession Agreement; and

- 3.9.5 In case, the Concession Agreement does not get executed within the period mentioned in Clause 3.9.3. (unless extended by the Authority in writing), Authority 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 on receiving request from the Successful Bidder may at its discretion, on receipt of a written request from the Successful Bidder, permit extension of time for execution of the Concession Agreement.
- 3.9.6 Authority 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 ESPC or expiry of validity period of Bids whichever is earlier.

3.10 CONTACTS DURING BID EVALUATION

- 3.10.1 Bids shall be deemed to be under consideration immediately after they are opened and until such time the Authority 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 and/ or their employees/representatives and their consultants on matters related to the Bids under consideration.

4 FRAUD AND CORRUPT PRACTICES

- 4.1.1 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 LOI and during the subsistence of the ESPC. Notwithstanding anything to the contrary contained herein, or in the LOI or the ESPC, the Authority may reject a Bid, withdraw the LOI, 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 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 under the Bidding Documents and/ or the Concession Agreement, or otherwise.
- 4.1.2 Without prejudice to the rights of the Authority under Clause 4.1.1 hereinabove and the rights and remedies which the Authority may have under the LOI or the ESPC, or otherwise if a Bidder or Concessionaire, as the case may be, is found by the 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 LOI or the execution of the ESPC, such Bidder or Concessionaire shall not be eligible to participate in any tender or RFP issued by the 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 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.
- 4.1.3 For the purposes of this Clause 4, 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 who is or has been associated in any manner, directly or indirectly, with the Bidding Process or the LOI or has dealt with matters concerning the ESPC 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, 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 LOI or after the execution of the ESPC, as the case may be, any person in respect of any matter relating to the Project or the LOI or the ESPC, who at any time has been or is a legal, financial or technical adviser of the 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 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.

5 PRE-BID CONFERENCE

- 5.1.1 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.
- 5.1.2 The Bidders need to submit the pre-bid queries at least 2 working days before the scheduled Pre-bid meeting, in the following format in editable version in MS Word or MS Excel as per the deadline mentioned in Clause 1.6 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.

- 5.1.3 During the course of Pre-Bid conference(s), the Bidders will be not seek any clarifications apart from those raised as per clause 5.1.2. The Authority shall endeavor 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.

6 MISCELLANEOUS

- 6.1.1 The Bidding Process shall be governed by, and construed in accordance with, the laws of India and the Courts in Solapur/Maharashtra shall have exclusive jurisdiction over all disputes arising under, pursuant to and/ or in connection with the Bidding Process.
- 6.1.2 The Authority, 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 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.
- 6.1.3 It shall be deemed that by submitting the Bid, the Bidder agrees and releases the Authority, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/ or performance of any obligations hereunder and the Bidding Documents, pursuant hereto, and/ or in connection with the Bidding Process, to the fullest extent permitted by applicable law, and waives any and all rights and/ or claims it may have in this respect, whether actual or contingent, whether present or in future.

APPENDIX I. TECHNICAL BID TEMPLATES

FORM 1. TECHNICAL PROPOSAL COVERING LETTER

Place:

Date:

To,
Municipal Commissioner
Solapur Municipal Corporation
Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines
Solapur 413001

Ref: "Selection of Energy Service Company (ESCO) for Implementing Energy Efficient Street Lights and Centralized Control and Monitoring System for Solapur on PPP Mode."

Bid Reference No:

Sub: Technical Proposal covering Letter

Dear Sir,

1. With reference to your RFP dated [*insert the date*], revised after the pre-bid conference dated [*insert the date*], I/we, having examined the RFP and understood its contents, hereby submit my/our Bid for the aforesaid project. The Bid is unconditional and unqualified.
2. I/We acknowledge that Authority will be relying on the information provided in the Bid and the documents accompanying such Bid for selection of the Bidders for the aforesaid Project and I/we certify that all information provided in the Bid and in APPENDIX I to III to this Letter of Bid are true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying such Bid are true copies of their respective originals.
3. The Bid is being submitted and submissions in this letter are being made for the express purpose of our selection as Concessionaire for the aforesaid Project.
4. I/We shall make available to Authority any additional information it may find necessary or require to supplement or authenticate the submissions.
5. I/We acknowledge the right of Authority to reject our Bid without assigning any reason or otherwise and hereby waive my/our right to challenge the same on any account whatsoever.
6. I/We certify that in the last 5 (five) years, I/we/any of the our Consortium Members have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award, nor been expelled from any project or contract by any public authority nor have had any contract terminated by any public authority for breach on our part.
7. I/ We certify that we are not barred by Government of Maharashtra (GoM), any other State Government in India (SG) or Government of India (Gol), or any of the agencies of GoM/SG/Gol from participating in similar projects as on the Bid Due Date.
8. I/We declare that:

- a. I/We have examined and have no reservations to the RFP, including any addendum issued by Authority;
 - b. I/We do not have any Conflict of Interest in accordance with Clauses 2.1.13 of the RFP;
 - c. I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in Section 4 of the RFP, in respect of any tender or request for proposal issued by or any agreement entered into with Authority or any other public sector enterprise or any government, Central or State;
 - d. I/We hereby certify that I/we have taken steps to ensure that in conformity with the provisions of Clause 4.1.1 of the RFP, no person acting for me/ us or on my/our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice; and
9. I/We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any Bid that you may receive, without incurring any liability to the Bidders, in accordance with Clause 2.15 of the RFP.
 10. I/ We understand that Authority or its representatives shall have the right to physically verify project facilities that are part of the project experience claimed by us. I/ We agree to abide by the decision of Authority in this regard and hereby waive my/our right to challenge the same on any account whatsoever.
 11. I/We believe that I/we/our Consortium satisfy(s) and meet(s) all the requirements as specified in the RFP and are/is qualified to submit a Bid.
 12. I/We declare that I/we/any Member, am/are not a member of a/any other Consortium applying for the Project.
 13. I/We certify that in regard to matters other than security and integrity of the country, I/we or any Member have not been convicted by a court of law or indicted or adverse orders passed by a regulatory authority which could cast a doubt on our ability to undertake the Project or which relates to a grave offence that outrages the moral sense of the community.
 14. I/We further certify that in regard to matters relating to security and integrity of the country, I/we have not been charge-sheeted by any Government Instrumentality or convicted by a court of law.
 15. I/We further certify that no investigation by a regulatory authority is pending either against me/us/any Member or against our chief executive officer or any of my/our directors/managers/employees.
 16. I/We undertake that in case due to any change in facts or circumstances during the Bidding Process, I/we am/are attracted by the provisions of disqualification in terms of the provisions of this RFP, I/we shall intimate Authority of the same immediately.
 17. The Statement of Legal Capacity as per format provided in 0, duly signed, is enclosed. The Power of Attorney for signing of Bid and the Power of Attorney for Lead Member of Consortium, as per format provided at Form 5 and Form 7 respectively of the RFP, are also enclosed.

18. I/ We understand that the Selected Bidder shall either be an existing Company incorporated under the Indian Companies Act, 1956/2013, or shall incorporate as such prior to execution of the Concession Agreement.
19. I/We hereby irrevocably waive any right, which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by Authority in connection with the selection of Bidders or in connection with the Bidding Process itself, in respect of the above mentioned Project and the terms and implementation thereof.
20. In the event of my/ our being declared as the Selected Bidder, I/we agree to enter into a Concession Agreement or ESPC in accordance with the draft that has been provided to me/ us prior to the Bid Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.
21. I/ We have studied all the Bidding Documents carefully and also surveyed the Project. We understand that except to the extent as expressly set forth in the Concession Agreement / ESPC, we shall have no claim, right or title arising out of any documents or information provided to us by Authority or in respect of any matter arising out of or relating to the Bidding Process including the award of Concession.
22. I/ We offer a Bid Security of Rs.***** (Rupees ***** only) to Authority in accordance with the RFP Document.
23. The Bid Security in the form of a Demand Draft/ Bank Guarantee (strike out whichever is not applicable) is attached.
24. I/ We agree and understand that the Bid is subject to the provisions of the Bidding Documents. In no case, I/we shall have any claim or right of whatsoever nature if the Project / Concession is not awarded to me/us or our Bid is not opened or rejected.
25. The Financial Parameters has been quoted by me/us after taking into consideration all the terms and conditions stated in the RFP, draft Concession Agreement / ESPC, our own estimates of costs and after a careful assessment of the site and all the conditions that may affect the project cost and implementation of the project.
26. I/We agree and undertake to abide by all the terms and conditions of the RFP.
27. {We, the Consortium Members agree and undertake to be jointly and severally liable for all the obligations of the Concessionaire under the Concession Agreement
28. I/We agree and undertake to be jointly and severally liable for all our obligations under the Concession Agreement as per the provisions set out therein.
29. I/ We shall keep this offer valid for 180 (one hundred and eighty) days from the Bid Due Date specified in this RFP.

In witness thereof, I/We submit this Bid under and in accordance with the terms of the RFP. Yours sincerely,

Signature of the Authorized signatory:

Name of the Authorized signatory:

Designation of the Authorized signatory:

Address:

Date:

(Name and seal of the Bidder/lead Member of the Consortium)

FORM 2. DETAILS OF THE BIDDER

[On the letter head of the Bidding Company/Members of Consortium]

Original or copy No:

Dated:

1. (a) Name:
 (b) Country of incorporation:
 (c) Address of the corporate headquarters and its branch office(s), if any, in India:
 (d) Date of incorporation and/or commencement of business (Please provide a true copy of the incorporation certificate):

2. Brief description of the Bidder including details of its main lines of business and proposed role and responsibilities in [this/these Project(s)]:

3. Details of individual(s) who will serve as the point of contact/communication for Authority:
 - (a) Name:
 - (b) Designation:
 - (c) Company:
 - (d) Address:
 - (e) Telephone number:
 - (f) E-Mail Address:
 - (g) Fax number:

4. Particulars of the authorized signatory of the Bidder:
 - (a) Name:
 - (b) Designation:
 - (c) Address:
 - (d) Phone number:
 - (e) Fax number:

5. In case of a Consortium:
 - (a) The information above (1-4) should be provided for all the Members.
 - (b) A copy of the Joint Bidding Agreement, as envisaged in Clause 2.2.5 should be attached to the Bid.
 - (c) Information regarding role of each Member should be provided as per table below:

S No.	Name of Member	Role*
1.		
2.		
3.		
4.		

* The role of each Member, as may be determined by the Bidder, should be indicated in accordance with Clause 2.2.5.

(d) The following information shall also be provided by Bidder/for each Member:

Name of Bidder/ member of Consortium:

No.	Criteria	Yes	No
1.	Has the Bidder/constituent of the Consortium been barred by the Central/ any State Government, or any entity controlled by them, from participating in any project (BOT or otherwise).		
2.	If the answer to 1 is yes, does the bar subsist as on the Bid Due Date.		
3.	Has the Bidder/constituent of the Consortium paid liquidated damages of more than 5% (five percent) of the contract value in a contract due to delay or has been penalized due to any other reason in relation to execution of a contract, in the last three years?		

1. A statement by the Bidder and each of its Members (where applicable) disclosing material non-performance or contractual non-compliance in past projects, contractual disputes and litigation/arbitration in the recent past is given below (Attach extra sheets, if necessary)

FORM 3. FINANCIAL CAPACITY OF THE BIDDER

(Refer Clause No. 3.4.2)
 [On the letter head of the Bidding Company/lead Member]
 In Rs. Crore

Bidder type [§]	Net Worth [€]
(1)	Year 1 (6)
Bidding Company	
Consortium Member 1	
Consortium Member 2	
TOTAL	

Instructions:

- The Bidder/ its constituent Consortium Members shall attach copies of the balance sheets, financial statements and Annual Reports for 1 (one) year preceding the Bid Due Date. The financial statements shall:
 - reflect the financial situation of the Bidder or Consortium Members;
 - be audited by a statutory auditor;
 - be complete, including all notes to the financial statements; and
 - correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).
- Net Worth shall mean (Subscribed and Paid-up Equity + Reserves) less (Revaluation reserves + miscellaneous expenditure not written off + reserves not available for distribution to equity shareholders).
- Year 1 will be the latest completed financial year, preceding the bidding. Year 2 shall be the year immediately preceding Year 1 and so on. In case the Bid Due Date falls within 3 (three) months of the close of the latest financial year, refer to Clause 3.4.3.
- In the case of a Consortium, a copy of the Jt. Bidding Agreement (provided in Format for Joint bidding arrangement) shall be submitted in accordance with Clause 2.2.5 of the RFP document.
- The Bidder shall also provide the name and address of the Bankers to Authority.
- The Bidder, except in the case of publicly listed companies, shall provide an Auditor's Certificate specifying the net worth of the Bidder and also specifying the methodology adopted for calculating such net worth in accordance with Clause 3.4.3 of the RFP document.

[§] A Bidder consisting of a single entity should fill in details as per the row titled Bidding Company and ignore the rows titled Consortium Members. In case of a Consortium, row titled Bidding Company may be ignored.

[€] The Bidder should provide details of its own Financial Capacity in Clause 3.4.2.

^{§§} For conversion of other currencies into rupees, see note below Annex-II of Appendix-I.

FORM 4. STATEMENT OF LEGAL CAPACITY

(To be forwarded on the letterhead of the Bidder/lead Member of Consortium)

Original or copy No:

Ref. Date:

To,

Municipal Commissioner

Solapur Municipal Corporation

Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines

Solapur 413001

Dear Sir,

We hereby confirm that we/our Members in the Consortium (constitution of which has been described in the Bid) satisfy the terms and conditions laid out in the RFP.

We have agreed that (insert member's name) will act as the lead Member of our consortium.*

We have agreed that (insert individual's name) will act as our representative/will act as the representative of the Consortium on its behalf and has been duly authorized to submit the RFP. Further, the authorised signatory is vested with requisite powers to furnish such letter and authenticate the same.

Thanking you,

Yours faithfully,

(Signature, name and designation of the authorized signatory)

*Please strike out whichever is not applicable.

FORM 5. FORMAT OF BANK GUARANTEE FOR BID SECURITY

BG No:

Date

1. In consideration of you, Solapur Municipal Corporation, having its office at *[insert address]*, Solapur-1, (hereinafter referred to as the “Authority”, which expression shall unless it be repugnant to the subject or context thereof include its, successors and assigns) having agreed to receive the bid of [a limited liability company registered under the (Indian) Companies Act, 1956) and having its registered office at][Consortium comprising of [], [] and []] (hereinafter referred to as the “Bidder” which expression shall unless it be repugnant to the subject or context thereof include its/their executors, administrators, successors and assigns), for the implementation of project for Implementing Energy Efficient Street Lights and Centralized Control and Monitoring System for Solapur on PPP Mode at Solapur in the State of Maharashtra (hereinafter referred to as the “Project”) pursuant to the Request for Proposal document dated *[insert the date]* (“RFP”) issued in respect of the Project and other related documents including without limitation the draft Concession Agreement and state support agreement (hereinafter collectively referred to as “Bidding Documents”), we (Name of the Bank) having our registered office at and one of its branches at (hereinafter referred to as the “Bank”), at the request of the Bidder, do hereby in terms of Clause 2.19 of the RFP, absolutely, irrevocably, unconditionally and without reservation guarantee the due and faithful fulfillment and compliance of the terms and conditions of the Bidding Documents (including the RFP) by the said Bidder and unconditionally and irrevocably undertake to pay forthwith to Authority an amount of Rs. *[insert the appropriate amount]* Lakhs (Rupees *[insert the appropriate amount in words]* only) (hereinafter referred to as the “Guarantee”) as our primary obligation without any demur, reservation, recourse, contest or protest and without reference to the Bidder if the Bidder shall fail to fulfill or comply with all or any of the terms and conditions contained in the said Bidding Documents.
2. Any such written demand made by Authority stating that the Bidder is in default of the due and faithful fulfillment and compliance with the terms and conditions contained in the Bidding Documents shall be final, conclusive and binding on the Bank.
3. We, the Bank, do hereby unconditionally undertake to pay the amounts due and payable under this Guarantee without any demur, reservation, recourse, contest or protest and without any reference to the Bidder or any other person and irrespective of whether the claim of Authority is disputed by the Bidder or not, merely on the first demand from Authority stating that the amount claimed is due to Authority by reason of failure of the Bidder to fulfill and comply with the terms and conditions contained in the Bidding Documents. Any such demand made on the Bank shall be conclusive as regards amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs.***** (Rupees ***** only). Any payments made hereunder shall be free and clear of, and without deductions for or on account of taxes, levies imposts, duties, charges, fees, deductions, or withholding of any nature whatsoever and by whomsoever imposed and where any withholding on a payments is required by law, the Bank shall comply with such withholding obligations and shall pay such additional amount in respect of such payment such that Authority receives full amount due hereunder as if no such withholding occurred.
4. This Guarantee shall be irrevocable and remain in full force for a period of 180 (one hundred and eighty days) from the Bid Due Date (as defined in the RFP) inclusive of a claim period of 60 (sixty) days or for

such extended period as required by the Bidding Documents, and agreed to by the Bank, and shall continue to be enforceable till all amounts under this Guarantee have been paid.

5. We, the Bank, further agree that Authority shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfillment and compliance with the terms and conditions contained in the Bidding Documents, and the decision of Authority that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between Authority and the Bidder or any dispute pending before any court, tribunal, arbitrator or any other authority.
6. The Guarantee shall not be affected by any change in the constitution or winding up of the Bidder or the Bank or any absorption, merger or amalgamation of the Bidder or the Bank with any other person.
7. In order to give full effect to this Guarantee, Authority shall be entitled to treat the Bank as the principal debtor. Authority shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee from time to time to vary any of the terms and conditions contained in the said Bidding Documents or to extend time for submission of the bids or the bid validity period or the period for conveying acceptance of letter of award by the Bidder or the period for fulfillment and compliance with all or any of the terms and conditions contained in the said Bidding Documents by the said Bidder or to postpone for any time and from time to time any of the powers exercisable by it against the said Bidder and either to enforce or forbear from enforcing any of the terms and conditions contained in the said Bidding Documents or the securities available to Authority, and the Bank shall not be released from its liability under these presents by any exercise by Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the said Bidder or any other forbearance, act or omission on the part of Authority or any indulgence by Authority to the said Bidder or by any change in the constitution of Authority or its absorption, merger or amalgamation with any other person or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of releasing the Bank from its such liability.
8. Any notice by way of request, demand or otherwise hereunder shall be sufficiently given or made if addressed to the Bank and sent by courier or by registered mail to the Bank at the address set forth herein.
9. We undertake to make the payment on receipt of your notice of claim on us addressed to [name of Bank along with branch address] and delivered at our above branch which shall be deemed to have been duly authorized to receive the said notice of claim.
10. It shall not be necessary for Authority to proceed against the said Bidder before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank, notwithstanding any other security which Authority may have obtained from the said Bidder or any other person and which shall, at the time when proceedings are taken against the Bank hereunder, be outstanding or unrealized.
11. We, the Bank, further undertake not to revoke this Guarantee during its currency except with the previous express consent of Authority in writing.
12. The Bank declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorized and has full power to execute this Guarantee for and on behalf of the Bank.

13. For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to Rs. **** (Rupees **** only). The Bank shall be liable to pay the said amount or any part thereof only if Authority serves a written claim on the Bank in accordance with paragraph 9 hereof, on or before [*** (indicate date falling 180 days after the Bid Due Date)].
14. Authority may assign this Guarantee to any person and in such case Authority shall inform the Bank in writing. This Guarantee shall not be assigned or transferred by the Bank.
15. This Guarantee shall be governed by and construed in accordance with the laws of India and shall be subject to the exclusive jurisdiction of the High Court of Maharashtra.

Signed and Delivered by Bank

By the hand of Mr. /Ms., its and authorized official.

(Signature of the Authorized Signatory)

(Official Seal)

FORM 6. POWER OF ATTORNEY FOR SIGNING OF BIDS

[To be executed on **Non Judicial stamp paper of Rs. 500/-** 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 Energy Service Company (ESCO) for Implementing Energy Efficient Street Lights and Centralized Control and Monitoring System for Solapur on PPP Mode. (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 Municipal Commissioner, Solapur Municipal Corporation , representing us in all matters before the SMC, signing and execution of all contracts and undertakings/declarations consequent to acceptance of our Proposal and generally dealing with the SMC 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 SMC.

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, 2017

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 7. 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 has invited applications from interested parties for Selection of Energy Service Company (ESCO) for Implementing Energy Efficient Street Lights and Centralized Control and Monitoring System for Solapur on PPP Mode 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 8. FORMAT OF TECHNICAL CAPACITY EVALUATION

(Refer Clause 3.4.4)

The Bidder shall provide details of similar assignments for which the Bidder was legally contracted. Similar assignments include energy performance contract projects and equipment supply projects of a similar nature.

[Name of the Bidder / or Consortium member (as applicable)]	
GENERAL	
Name of the Project	
Name of the Client	
Name and Contact Details of the Client with exact key personal who handled the Project from Client site	
PROJECT RELATED	
Description of Project	
Scope of Services	
Number of Street Lights and number of Luminaires supplied	
Status of the Project	
Minimum Energy Savings Achieved (%)	
OTHER DETAILS	
Total Cost of the Project (In Rs. Crore)	
Total cost of the services provided by the Concessionaire (In Rs. Crore)	
Duration of the project (no. of months, start date, completion date, current status)	
Letter from the client to indicate the successful completion/status of the projects	
Current Status of Project	Operational / Not-Operational

Instructions:

1. Bidders are expected to provide information in respect of Projects in this Format. The Projects cited must comply with the eligibility criteria specified in Clause 3.4.4 of the RFP, as the case may be. Information provided in this section is intended to serve as a backup for information provided in the Bid. Bidders should also refer to the instructions below.
2. A separate sheet should be filled for each Project.
3. Experience for any activity relating to a Project shall not be claimed by 2 (two) or more Members of the Consortium. In other words, no double counting by a Consortium in respect of the same experience shall be permitted in any manner whatsoever.
4. Certificate from the Government Instrumentality/Statutory Authority regarding Bidders experience works shall be in the following format.

<p>Certificate from the Government Instrumentality/Statutory Authority regarding experience works</p> <p>This is to certify that (name of the Bidding Company/Member) has executed/is executing (name of project) for (name of the Government Authority).</p> <p>We further certify that the total number of luminaires installed/ to be installed under the project is</p> <p>The project has commenced on (date) and the construction/installation of the project ended on (date). The Project is in operation since(date) and the (name of the Bidding Company /Member) has achieved minimum energy savings of % in our project.</p> <p>We are satisfied by the work undertaken by the Bidder/Member.</p> <p>.....</p>

FORM 9. 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 implementation and operation of the proposed Project solution, as per the requirements of the RFP for Solapur Municipal Corporation Ltd.

Thanking you,

Yours faithfully

(Signature of the Authorized signatory of the Bidding Organisation)

Name :

Designation :

Date :

Time :

Seal :

Business Address :

FORM 10. DECLARATION FOR OPENING OF OFFICE IN SOLAPUR

Place:

Date:

To,

Municipal Commissioner
Solapur Municipal Corporation
Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines
Solapur 413001
Maharashtra, India

Ref: "Selection of Energy Service Company (ESCO) for Implementing Energy Efficient Street Lights and Centralized Control and Monitoring System for Solapur on PPP Mode".

Bid Reference No:

Sub: Undertaking to Open an Office in Solapur

Dear Sir,

We here by undertake that:

We shall open an office in Solapur 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 11. DECLARATION THAT THE BIDDER HAS NOT BEEN BLACKLISTED

(To be submitted on the **Rs. 100/- Non Judicial Stamp Paper** of the responding Concessionaire)

Place:

Date:

To,

Municipal Commissioner
Solapur Municipal Corporation
Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines
Solapur 413001
Maharashtra, India

Ref: RFP Notification no dated

Subject: Declaration of Concessionaire being not blacklisted

Dear Sir,

We confirm that our Company / Members of our Consortium, is not blacklisted in any manner whatsoever by any of the State/Union Territory and/or Central Government or Local Government in India on any ground including but not limited to indulgence in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice.

Place :

Date :

Concessionaire's Company Seal :

Authorized Signatory's Signature :

Authorized Signatory's Name and Designation:

APPENDIX II. FINANCIAL PROPOSAL TEMPLATE

FORM 12. FINANCIAL BID

[TO BE PROVIDED ON THE LETTER HEAD OF THE BIDDER BY AUTHORISED SIGNATORY]

To:

Municipal Commissioner
Solapur Municipal Corporation
Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines
Solapur 413001
Maharashtra, India

Subject: Commercial Proposal for Selection of Energy Service Company (ESCO) for Implementing Energy Efficient Street Lights and Centralized Control and Monitoring System for Solapur on PPP Mode.

Dear Sir,

We, the undersigned, offer to provide services as Energy Service Company (ESCO) for Implementing Energy Efficient Street Lights and Centralized Control and Monitoring System for Solapur on PPP Mode in accordance with your Request for Proposal dated <Date> and our Proposal (Technical and Financial Proposals).

We hereby confirm the following;

1. This Financial Bid is being submitted by [name of Bidder] in accordance with the conditions stipulated in the RFP.
2. We have examined in detail and understand and agree to abide by all terms and conditions stipulated in the RFP Documents issued by SMC, as amended, and in any subsequent communication sent by SMC. Our Financial Bid is consistent with all requirements of submission stated in the RFP and in any subsequent communication sent by SMC. Our Financial Bid is as follows:

Sr No	Parameter	Unit	Percentage in Unit	Percentage in Words
1	Guaranteed Energy Savings	(%)		
2	Shared Energy Savings (%)	(%)		
3	Operation and Maintenance Costs	(INR/Pole/Year)		(To be filled in the Separate BOQ EXCEL Format enclosed in the tender online only)

3. We are solely responsible for any errors or omissions in our Financial Bid.
4. 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].
5. We understand you are not bound to accept any Proposal you receive.
6. We have provided the Unit Rates for undertaking Infrastructure Development Works as per APPENDIX VI.
7. We hereby declare that our Bid is made in good faith, without collusion or fraud and the information contained in the Bid is true and correct to the best of our knowledge and belief.

Duly authorized to sign the bid for and on behalf of

[Signature]

Name:

Title:

Date:

Place:

[Name, signature and title of the Authorized Person in whose name a power of attorney was issued.]

Note: The quoted rates online in the Price Bid shall be inclusive of all taxes, duties, etc. and applicable Goods and Services Tax (GST) 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.

APPENDIX III. FORMAT FOR JOINT BIDDING ARRANGEMENT

[To be executed on appropriate value of stamp paper]

Agreement
Between
[First Member]
And
[Second Member]

(For Implementing Street Lighting Project in Solapur)

THIS JOING AGREEMENT (hereinafter called “**Joint Bidding Agreement**”) made and entered into this ----- day of the month of -----2017, by and amongst:

1. {..... Limited, a company incorporated under the (Indian) Companies Act, 1956} and having its registered office at (hereinafter referred to as the “**First Part**” which expression shall, unless repugnant to the context include its successors and permitted assigns);

AND

2. Limited, a limited liability company incorporated under the (Indian) Companies Act, 1956} and having its registered office at (hereinafter referred to as the “**Second Part**” which expression shall, unless repugnant to the context include its successors and permitted assigns);

AND

3. Limited, a limited liability company incorporated under the (Indian) Companies Act, 1956} and having its registered office at (hereinafter referred to as the “**Third Part**” which expression shall, unless repugnant to the context include its successors and permitted assigns);

The above mentioned parties of the FIRST, SECOND and, THIRD PART are collectively referred to as the “Parties” and each is individually referred to as a “Party”. 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 Solapur (hereinafter called the “**Services**”) for **[Name of the project]** (hereinafter called the “**Project**”) through PPP;
- (b.) The *Parties* are interested in jointly bidding for the Project as members of a Consortium and in accordance with the terms and conditions of this RFP document and other bid documents in respect of the Project, and.
- (c.) It is a necessary condition under the RFP document that the members of the Consortium shall enter into a Joint Bidding Agreement and furnish a copy thereof with the Bid.

NOW IT IS HEREBY AGREED as follows:

1. Definitions and Interpretations

In this Agreement, the capitalised terms shall, unless the context otherwise requires, have the meaning ascribed thereto under the RFP.

2. Consortium

2.1 The Parties do hereby irrevocably constitute a consortium (the “**Consortium**”) for the purposes of jointly participating in the Bidding Process for the Project.

2.2 The Parties hereby undertake to participate in the Bidding Process only through this Consortium and not individually and/ or through any other consortium constituted for this Project, either directly or indirectly or through any of their Associates.

3. Covenants

The Parties hereby undertake that in the event the Consortium is declared the selected Bidder and awarded the Project, it shall incorporate a special purpose vehicle (the “**SPV**”) under the Indian Companies Act, 1956 for entering into a Concession Agreement with the Authority and for performing all its obligations as the Concessionaire in terms of the Concession Agreement for the Project.

4. Role of the Parties

The Parties hereby undertake to perform the roles and responsibilities as described below:

- (i) Party of the First Part shall be the Lead member of the Consortium and shall have the power of attorney from all Parties for conducting all business for and on behalf of the Consortium during the Bidding Process and until the Appointed Date under the Concession Agreement when all the obligations of the SPV shall become effective;
- (ii) Party of the Second Part shall be the Financial/Technical Member of the Consortium;
- (iii) Party of the Third Part shall be the Operation and Maintenance/Other Member of the Consortium; and

5. Joint and Several Liability

The Parties do hereby undertake to be jointly and severally responsible for all obligations and liabilities relating to the Project and in accordance with the terms of the RFP and the Concession Agreement, till such time as the Financial Close for the Project is achieved under and in accordance with the Concession Agreement.

6. Shareholding in the SPV

6.1 The Parties agree that the proportion of shareholding among the Parties in the SPV shall be as follows:

First Party:

Second Party:

{Third Party:}

- 6.2 The Parties undertake that a minimum of 26% (twenty six per cent) of the subscribed and paid up equity share capital of the SPV shall, at all times till the second anniversary of the date of commercial operation of the Project, be held by the Parties of the First, {Second and Third} Part whose experience and net worth have been reckoned for the purposes of qualification evaluation of Bidders for the Project in terms of the RFP.
- 6.3 The Parties undertake that each of the Parties specified in Clause 6.2 above shall, at all times between the commercial operation date of the Project and the second anniversary thereof, hold subscribed and paid up equity share capital of SPV equivalent to at least 5% (five per cent) of the Total Project Cost.
- 6.4 The Parties undertake that they shall collectively hold at least 51% (fifty one per cent) of the subscribed and paid up equity share capital of the SPV at all times until the second anniversary of the commercial operation date of the Project.
- 6.5 The Parties undertake that they shall comply with all equity lock-in requirements set forth in the Concession Agreement.
- 6.6 The Parties undertake that the O&M Member shall subscribe and hold at least 10% (ten per cent) of the subscribed and paid up equity shares in the SPV in terms of the Concession Agreement.}

7. Representation of the Parties

Each Party represents to the other Parties as of the date of this Agreement that:

- (a.) Such Party is duly organized, validly existing and in good standing under the laws of its incorporation and has all requisite power and authority to enter into this Agreement;
- (b.) The execution, delivery and performance by such Party of this Agreement has been authorized by all necessary and appropriate corporate or governmental action and a copy of the extract of the charter documents and board resolution/ power of attorney in favor of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Consortium Member is annexed to this Agreement, and will not, to the best of its knowledge:
- i. require any consent or approval not already obtained;
 - ii. violate any Applicable Law presently in effect and having applicability to it;
 - iii. violate the memorandum and articles of association, by-laws or other applicable organizational documents thereof;
 - iv. violate any clearance, permit, concession, grant, license or other governmental authorization, approval, judgment, order or decree or any mortgage agreement, indenture or any other instrument to which such Party is a party or by which such Party or any of its properties or assets are bound or that is otherwise applicable to such Party; or
 - v. create or impose any liens, mortgages, pledges, claims, security interests, charges or Encumbrances or obligations to create a lien, charge, pledge, security interest, encumbrances or mortgage in or on the property of such Party, except for encumbrances that would not, individually or in the aggregate, have a material adverse effect on the financial condition or prospects or business of such Party so as to prevent such Party from fulfilling its obligations under this Agreement;
- (c.) this Agreement is the legal and binding obligation of such Party, enforceable in accordance with its terms against it; and

(d.) there is no litigation pending or, to the best of such Party's knowledge, threatened to which it or any of its Affiliates is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfillment of its obligations under this Agreement.

8. Termination

This Agreement shall be effective from the date hereof and shall continue in full force and effect until the Financial Close of the Project is achieved under and in accordance with the Concession Agreement, in case the Project is awarded to the Consortium. However, in case the Consortium is either not qualified for the Project or does not get selected for award of the Project, the Agreement will stand terminated in case the Bidder is not qualified or upon return of the Bid Security by the Authority to the Bidder, as the case may be.

9. Miscellaneous

9.1 This Joint Bidding Agreement shall be governed by laws of {India}.

9.2 The Parties acknowledge and accept that this Agreement shall not be amended by the Parties without the prior written consent of the Authority.

IN WITNESS WHEREOF THE PARTIES ABOVE NAMED HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED

SIGNED, SEALED AND DELIVERED

For and on behalf of

LEAD MEMBER by:

(Signature)

(Name)

(Designation)

(Address)

SIGNED, SEALED AND DELIVERED

SECOND PART

(Signature)

(Name)

(Designation)

(Address)

SIGNED, SEALED AND DELIVERED

THIRD PART

(Signature)

(Name)

(Designation)

(Address)

Notes:

1. The mode of the execution of the Joint Bidding Agreement should be in accordance with the procedure, if any, laid down by the Applicable Law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.
2. Each Joint Bidding Agreement should attach a copy of the extract of the charter documents and documents such as resolution / power of attorney in favour of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Consortium Member.
3. For a Joint Bidding Agreement executed and issued overseas, the document shall be legalised by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney has been executed.

APPENDIX IV. SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

SCOPE OF WORK OF 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 provide the services as specified in this section.

SMC seeks to appoint a Concessionaire for a **contract period of 11 years¹**, for undertaking following tasks for upgrading the street lighting system under jurisdiction:

- Task – 1: undertake complete asset mapping and energy baseline establishment within three months;
- Task – 2: Replacement of existing luminaires (within municipal boundary of Solapur Municipal Corporation) with LED luminaires (including LED lamp, Driver and Luminaire) and installation of Centralized Control and Monitoring System (CCMS), within 9 (nine) months in parallel to Task – 1.
- Task – 3 Infrastructure Development Works, in parallel with Task – 2.
- Task – 4: Undertake comprehensive operation and maintenance of street lighting network and infrastructure. As per the Term defined in the Concession Agreement.

A. Task -1 - undertake complete asset mapping and energy Baseline establishment

1. Complete Asset Survey and Actual mapping on GIS: The Successful Bidder shall, upon selection, immediately undertake complete survey of the Street Lighting infrastructure under the Project Area along with existing road and proposed new roads along with following additional information (but not limited to);
 - a. Existing Light point spec
 - b. GIS location in X-Y co ordinate
 - c. Pole type
 - d. Pole height
 - e. Pole bracket
 - f. Feeder detail
 - g. Metering detail
 - h. Cable arrangement
 - i. Road width
 - j. Type of road classification
 - k. Numbering and labelling of pole and feeder.
2. GIS Database: Surveyed street light and switch data in point format shall be integrated using GIS software, Pole to pole cable connection has to be generated using GIS techniques and these pole to pole distance shall be measured using cables and it is used for calculation part. Existing Street light, Switches and cables shall be marked in GIS using these existing network. Proposed poles, lights, cables and switches need to be marked. Switches shall be placed in such location that looping arrangement shall be generated and the lineman can easily monitor from one location, if system further upgraded then, by using SCADA system switches operating logic shall be made using these data.

¹ Contract Period would be 11 years including installation period of 9 months (extendable by 3 months with defined penalty clause) and remaining for O&M and energy savings payment. End date of contract period would be exactly 11 years irrespective of installation period whether it is less than or more than 9 months. For Example: Contract signed date is 01/July 2017, then end date of contract date would be 30/June/2028. The Concessionaire will not be eligible for any payment, for the period, after the contract end date.

3. Classification of Roads: Along with the survey of the street lighting infrastructure, the Concessionaire is also required to undertake classification of the roads in Solapur city as per the classification mentioned in the following in conformity to the NLC. The classification shall be as per the categories mentioned in the following table for the desired lux level requirements and uniformity. The wattage of the LED luminaire shall be selected in order to achieve the requirements mentioned in the following table;

Lighting Classification for different road types – IS Classification

Sr No	Classification of Lighting Installation	Type of Road	Average Illuminance on Road Surface	Uniformity Ratio (E_{min}/E_{avg})	Transverse Uniformity (E_{min}/E_{max})
1	Group A1	Important Traffic routes carrying fast traffic	30	0.4	0.33
2	Group A2	Other than main roads carrying mixed traffic like main city streets, arterial roads, and thoroughway roads.	15	0.4	0.33
3	Group B1	Secondary roads with considerable traffic like principal local traffic routes and shopping.	8	0.3	0.2
4	Group B2	Secondary roads with light traffic.	4	0.3	0.2
5	Note : Transverse Uniformity: Ratio of E_{min}/E_{max} across the road.				

Lighting classification for different type of junctions

Sr No	Junction Type	E_{avg} (Lux)	(E_{min}/E_{avg})
1	Key Junctions and complex flyover interchanges	50	0.4
2	Main city junctions without any interchanges	20	0.4
3	Other smaller junctions	15	0.4
4	Pedestrian crossings	50*	-
	Bus Bays	5	-
	*Note : This is vertical Illuminance on pedestrians at 1.2 meter.		

4. New Pole Locations: The Concessionaire while doing the GPS based GIS mapping will have to undertake detailed mapping of the MSEDCL poles with pole to pole distance clearly measured. If in case where the pole to pole distance is more than 50 meters, the Concessionaire has to install a new pole in between such poles. The Lux and uniformity for such road shall be through Lumen Maintained Method. The Concessionaire shall provide 20% extra light over and above base level. Wherever the pole to pole placement distance is proper, Concessionaire shall provide the illumination and uniformity as per the NLC standard confirming to the respective road category.
5. Feeder wise Energy Baseline: The successful Bidder shall establish a feeder wise energy baseline by installing smart energy meters on each feeder. Post installation of the meter, the Bidder shall first measure the energy baseline for a block of 25 feeders which will become a baseline for that block. Post which, Bidder will retrofit those fixtures with energy efficient fixtures and infrastructure required. The energy consumption post the retrofit shall be captured and total savings in energy consumption shall be established for that particular block. And the process shall be repeated for remaining blocks. Few sample feeder wise retrofit of LED to establish actual energy baseline to showcase the minimum Guaranteed Energy Savings as quoted in the Bid

for all classification of roads in line with National Lighting Code (NLC) and baseline adjustment of lumen up gradation.

B. Task – 2 Replacement of existing luminaires with LED luminaires (including LED, Driver and Luminaire) and installation of CCMS

1. **Implementation timeline:** The Successful Bidder has to supply, install, test and commission LED luminaires and three-phase CCMS panels within 9 (nine) months from the date of award of work failing which a penalty of INR 1,00,000/ week will be applicable for a maximum period of 13 weeks after which M&V of energy savings will be stopped resulting in no payments towards energy saving.
2. **Wattages of LEDs to be installed:** The intent of SMC 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 may have to install following minimum wattages of LED luminaires during replacement of existing luminaires. However Bidders will have to design the system to meet the NLC standards and accordingly choose the requisite LED wattage to bring in more energy efficiency through system design:

Sr. No.	Types of Luminaries	wattage of each lamp	Number of lamps	ballast losses (Watt)	total losses (Watt)	LED wattage
1	Florescent tube	36	10851	10	46	18
2	Sodium Vapor	70	6070	15	85	36
3	Sodium Vapor	150	13208	20	170	60
4	Sodium Vapor	250	2512	25	275	100
5	Metal Halide	250	1227	25	275	90
6	Metal Halide	400	870	40	440	160
7	T-5 (24*4)	96	1609	0	96	36
8	Other (CFLU type)	23/36/48	542	0	36	24
9	Under Nagrothan Yojna	150W/250W	1650	25	170	60

Note:

- 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 concession.
 - Out of the total luminaires mentioned in the table above, the bidder shall have to install at least 1500 luminaires of higher wattages, on category A1 and A2 roads, having individual luminaire level monitoring and control capability. The location of these luminaires would be suggested by SMC during project implementation. For remaining luminaires, bidder has the option to install either individual control feeder level control.
3. **Guaranteed savings:** The minimum guaranteed energy savings, with the installation of LED street lights, shall be 60% (sixty percent).
 4. **Operating hours:** 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 11 hours per day. However, the

Successful Bidder shall submit a proposal towards operative hours based on astronomical timer during Task-1 of project to SMC for approval.

5. **Dimming:** The Successful Bidder will be allowed to use any dimming option, up to maximum 20% drop in the lux level, for additional energy saving, with explicit written approval from the SMC. However the timing for this dimming shall be restricted between 12:00 Midnight to 5:00 AM only.
6. 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.
7. **Baseline:** The Assessed Baseline energy consumption is **20.58 million kWh per annum** is for existing condition of street lighting system in Solapur. However, actual baseline during the installation period (i.e. from the start of project to complete installation) may vary in terms of number of light points as well as electricity consumption. The Concessionaire may be asked by SMC 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.
8. **Energy Tariff:** As per the tariff order passed by the Maharashtra Electricity Regulatory Commission ("MERC") the applicable tariff for Street Lighting in Municipal Corporation Area is Rs. 6.60 / Kwh effective from April 1st 2017.
9. **Energy Tariff Escalation:** During the first year of concession period for energy saving payment, tariff rate would be considered Rs. 6.60/kWh. For the subsequent years the tariff for energy saving payments to Concessionaire shall be escalated by 2.5% per annum.
10. The Successful Bidder has to adhere to the technical specifications as specified in Technical Specifications section for different type of street lighting equipment.
11. 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.
12. 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 SMC. Poles outside such jurisdiction are not supposed to be taken up.
13. If required, then the Concessionaire may be asked to undertake marking of poles (pole numbering) for each LED luminaire installed in service area of SMC and switching point details. However, this should be done without damaging the infrastructure of SMC/DISCOM.
14. 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.
15. **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 on the electricity distribution utility as well as the corporation owned poles with dedicated cable for street lighting only. The Cables/ Wires should be of 10 mm², PVC insulated, 4-core Aluminum wire. **No extra charge** will be payable to the concessionaire for this work.
16. **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.

17. 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.
18. Surge protection: The Concessionaire must provide appropriate surge protection arrangement, either centralized at switching point or at each luminaire or a combination of both, as may be decided by the Successful Bidder, 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.
19. 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 SMC, along with circumstantial evidence preferably within 24 hours of such occurrence, for the purpose of damage claim. The responsibility for submission of supporting documentation rests with the Concessionaire.
20. **Earthing:** Successful Bidder shall 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 SMC for mutual agreement. No claim for failure of Luminaires will be entertained on account of earthing issues.
21. 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 SMC/ DISCOM. In such instances, the Concessionaire will provide the asset deficiency report and related investment costs for replacement within first two month of appointment. The replacement and maintenance of such infrastructure will be done by the Concessionaire after getting approval of SMC/DISCOM. The Concessionaire will be paid, the amount established as per APPENDIX VI for replacing/ installing the poles, power cables, JB's/MCBs on poles. In addition to this, SMC may ask for painting of some poles across the city. After approval on the number of poles and locations for painting from SMC, the Concessionaire can start the painting work and payment will be made, as per APPENDIX VI. If rate is not available in SOR, then SMC will discover the market price through minimum three bids. In such situation the Concessionaire will be paid on discovered market price.
22. 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.
23. 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.
24. The Successful Bidder has to intimate SMC/ SMC about any cases of power theft or unauthorized connection of load during festivals from the street lighting network on immediate basis. SMC will be responsible for taking all the corrective measures required and not penalize the Successful Bidder for such theft.

25. The Successful Bidder shall ensure proper recording of the dismantled conventional Luminaires and report that to SMC on weekly basis. However the handover to SMC of dismantled Luminaires shall be done on daily basis where in the records of handover and taking over shall be signed by the official of SMC and the Bidder jointly.
26. With regard to asset ownership, following need to be adhered to:
- SMC 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 (if any) 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 SMC, 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 SMC with minimum 98% of them in working condition.
27. SMC 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 a third party appointed by SMC, 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.
28. **Commissioning of Feeders** : The Authority shall commission the feeders in a block of 25 (twenty five) for Shared Energy Saving based on actual energy saving which should be equal to or more than committed by the Successful Bidder in the offer. The commissioning will be considered complete only after approval from TPTA and Authority and 10 days trial run.

C. Task – 3 Infrastructure Development Works

1. The Authority shall ask the Successful Bidder for installation of new street lighting infrastructure in either uncovered areas of the city or where the street lighting infrastructure is in dilapidated condition. The Successful Bidder shall be paid for such work on actual basis. Exact numbers and location of these shall be intimated by the SMC during the term of Phase-2 as per the Concession Agreement. The rates of the items to be executed by the Successful Bidder shall be determined as per APPENDIX VI.
2. **Modification of Energy Baseline:** Following approach shall be used for modifying the Energy Baseline in case of new infrastructure is being added to the Street Lighting Infrastructure;
 - a. **Road Extension:** On roads where the street lighting infrastructure is provided till one point and beyond that point new infrastructure is to be laid, the energy baseline would have been established for that particular feeder. The baseline consumption and the consumption post installation of new poles shall be adjusted accordingly and in no case the new infrastructure shall be less than the savings from what has been quoted by the Successful Bidder. The Successful Bidder shall install the LED lights and the Smart Panel for the same for which no extra costs shall be paid to him. However, for the other infrastructure, such as foundation, pole, cable the unit rates shall be paid as per the process mentioned in APPENDIX VI. All the new light points that are being installed by the Successful Bidder will than become the part of scope for operation and maintenance by the Successful Bidder.

b. **New Roads:** SMC shall define the category of the new road and the illumination requirements of the new road that is being constructed by the SMC. The successful Bidder shall then be required to prepare lighting design in DIALux or any other approved software and submit the same to SMC for approval. The Successful Bidder shall submit the report with both the technologies i.e. Sodium and LED keeping the output parameter such as lux uniformity same as per the NLC. SMC based on the report submitted by the Successful Bidder shall establish the energy saving potential and that shall be considered as the baseline for the new road feeder. For the new road LED lights, brackets and feeder supply and installed by Successful Bidder without any extra charges. Balance all material like pole, cables, foundation etc. unit rates shall be paid determined as per the process mentioned APPENDIX VI. All such infrastructure that is being added in to the City's street lighting infrastructure shall form a part of the scope for operation and maintenance for the Successful Bidder.

3. **Payments for Infrastructure Development Works:** Payments for Infrastructure Development works shall be made to the Successful Bidder on submission and approval of monthly running amount bill.

D. Task – 4 Undertake comprehensive operation and maintenance of street lighting network

During the Concession Period, following operation and maintenance activities will be required to be carried out by the Successful Bidder:

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 Authority and the Successful Bidder. The Successful Bidder has no obligation to employ directly or indirectly any municipal employees.
2. The Successful Bidder has to store inventory (minimum 1% of total light points in the city) of LED luminaires for maintenance requirements.
3. The Concessionaire will be provided with a small place at the head office of the SMC with basic infrastructure where the Concessionaire will make available a person with amenities like computer, printer, phone, complaint register, etc. during working shift timings. These complaint handling centers will be connected to SMC's existing Complaint Management System and such centers should become fully operational within 30 days of allocation of such space by SMC.
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.
5. In case of theft of the material or electricity, the Concessionaire will inform the SMC and SMC 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 SMC 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.
6. The Successful Bidder will manage the operation of all the control panels installed by him and also provide maintenance, web-based portal and communication services etc. of these control panels during the contract period.
7. All complaints lodged in the system have to be resolved within 24 hours of lodging of complaint for the critical 3% of the area and 48 hours for the remaining area. Critical area will be defined by SMC during the project implementation phase. For example, if the complaint is lodged on 16th May at 10:00 PM then the complaint

has to be resolved on or before 17th May 10:00 PM for the Critical Area and 18th May, 10:00 PM for complaint registered from remaining area. In certain cases, Concessionaire has to resolve the complaints immediately as per the instruction of EIC.

8. The Successful Bidder shall ensure the availability of sufficient ladder vehicle, Hydraulic Vehicle (suitable to reach up to 10m height) and other relevant vehicle and equipment for O&M. The vehicle used for O&M should have valid registration documents from the respective authorities.
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.
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.
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 Concession Period.
12. The Concessionaire has to carryout 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 SMC.
Due to overhead mix network, snapping of conductors, phase-to-phase phenomenon is very frequent and leading to damages of street light luminary 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.

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 24/48 hours of lodging of complaint to be read in conjunction to this Appendix IV.	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 SMC staff is engaged for resolving phase issue
Hours 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
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%

Performance parameter	Particulars	Penalty for non-achievement
		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.
Resolution of Line Fault / MCB Tripping	Concessionaire has to resolve any line fault / MCB tripping at feeder / CCMS level issue within Two hours.	Rs. 20,000/- per hour in addition to the response time of two hours.

14. The Concessionaire will organize half-day training program at SMC office wherein the Concessionaire will train the employees of SMC 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.
15. Successful Bidder should address the queries or issues raised by employees of SMC on O&M practices from time to time
16. The Successful Bidder 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 SMC 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 SMC and advice names of the new officers assigned for the role.
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. 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.
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.
19. 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 of at least six months by a competent person possessing valid certificate w.r.t SAFETY issues.
20. 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 of at least six months 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.

21. **Third Party Audit:** The Authority shall appoint a Third Party Audit (TPA) agency at a suitable time of the project implementation or operations. The TPA may suggest measures for improvement of the efficiency of the project which shall be final and binding on the Concessionaire to execute.
22. **Festival Lighting:** The Authority shall during various festivals in Solapur city round the year, may tap power supply from the street lighting infrastructure. The Concessionaire shall be given a set off for any additional energy consumption for such events.

E. Assessment of lighting load

It is acknowledged that Maharashtra State Electricity Distribution Company Limited (the “MSEDCL”) charges SMC 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, SMC will have to get reduce the sanctioned load of each of the street lighting feeder proportionately. SMC will take-up this with MEDCL 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. SMC 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 block of 25 switch points², must prepare and submit a consolidated report to SMC in the format as provided below:

Zone (1/2/3/4)	GIS ID	Switch Point Description	Number of Light points category wise	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 MSEDCL.

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

F. Assessment of energy savings through Monitoring and Verification (the 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

² Completed switch points: Means the switch points for which all the connected lights have been replaced and CCMS panels installed.

to give minimum 60% of saving in energy consumption. 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 in a block of 25 feeder is (the "Block) completed. The Concessionaire will be eligible to raise the invoice for the energy savings realized after complete installation in two Blocks. For illustration, if total installation is completed in two Blocks on 1st January 2018, than Concessionaire is eligible to raise invoice on 1st February 2018 for energy savings realized in the period from 2nd January 2018 to 31st January 2018. No payment will be made to the Concessionaire for the energy savings generated prior to 2nd January 2018.

For subsequent Blocks (i.e. 3rd and 4th Block), payment of energy saving would start only after total completion of each Block (i.e. on total completion of 3rd Block the invoice of energy savings for third Block could be raised by the Concessionaire and similarly on total completion of 4th Block). 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 particular zone). The payment for O&M will begin after date of issue of satisfactory Installation, Testing and Commissioning certificate of all LED Street lights.

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

SMC or the third party consultant hired by SMC 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.

G. 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 SOP document shall be formally signed off by SMC before completion of Final Acceptance Test. This SOP manual

will be finalized by the Concessionaire within 2 months of operationalization, in consultation with the SMC and formally signed off by the SMC.

Note: The Concessionaire will ensure upkeep and update all documentation and manuals during the Concession Period. The ownership of all documents, supplied by the Concessionaire, will be with SMC. Documents shall be submitted in five copies each in printed (duly hard bound) and in editable version of softcopy formats.

H. 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, web interface and social media accounts;
 - The Concessionaire shall establish a two way communication mechanism. I.e. the complainant shall be intimated once the complaint registered by him/her is resolved. This two way communication mechanism shall be through all means by which the complaints are received. At the end an SMS communicating that the complaint has been resolved shall be sent to the complainant.
 - Following is also part of scope of work of Concessionaire: (a) Development of training material for SMC employees (b) training to be imparted to SMC (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 SMC (e) Helpdesk related infrastructure;
 - Language Capabilities : Marathi, 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.

I. Capacity Building

The Concessionaire need to provide training and capacity building to SMC employees and other stakeholders as directed by SMC 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 SMC 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 SMC. 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 SMC 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 methodology that will capture necessary parameters on measuring effectiveness of the training sessions. This methodology will be discussed and finalized with SMC.
- 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 SMC for each training session.

J. Hand-over of the system at the end of contractual period

The Concessionaire will supply to the SMC 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 and services related to the project to enable SMC and its nominated agencies, or its replacing Concessionaire to carry out due diligence in order to transition the provision of the Project Services to SMC or its nominated agencies, or its replacing Concessionaire (as the case may be).

TECHNICAL SPECIFICATIONS OF LED AND CCMS

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,

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 with LED chip efficacy between 135 lumen/watt to 160 lumens/watt and CRI > 70%, however fixture efficacy shall be equal to or greater than 120 Lumen/watt	LED Technical Data sheet
2.	Life span of LEDs used in the Luminaire shall be more than 50,000 hours at 70% light output	

S. No.	Typical specifications of LED street lights	Supporting document
3.	Color rendering index (CRI) of the LEDs used in the luminaire shall be greater than 70	LM-80/IS16105,L70 & TM 21 Test Report test report including technical data sheet of LED Chip
4.	LED chip make – Nichia, Philip lumiled, Osram, CREE, Citizen, Bridgelux	
5.	LED chip efficacy shall be more than 135 Lumens/watt at Junction Temperature (Tj) 25° C	LED Technical Data Sheet
6.	Junction Temperature (Tj) should be <105°C	Manufacturer self-certify
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	Photo Biological Safety Report
8.	Color temperature of the luminaire shall be in the range of nominal 5,700 K to 5900 K for replacement of 250 W HPSV at main roads and 4000 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.	LM 80 Report to be submitted and Manufacturer has to self-certify
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	LM-79 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 However, for higher wattage above 60W, THD<15% is acceptable.	NABL accredited lab report
17.	LED Drive current >=350 mA<1200 mA	LM-79 report
18.	LED driver efficiency > 85%	LM-79 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 Aluminum 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 allowed).	NABL accredited lab report
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

S. No.	Typical specifications of LED street lights	Supporting document
23.	Frequency 50Hz +/- 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, IEC61000-4-5	NABL accredited lab report
26.	Working humidity 10% to 90% RH	
27.	Conformation standards of luminaire (Test reports 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 Aesthetically designed housing with corrosion resistant polyester powder coating	Self-Declaration
29.	Luminaire configuration / technical requirement Side entry type. Shall consist of separate optical and control gear compartments. It should be easy 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 ANSI C 136.2-2014

NOTE:

- All Tests have to be confirmed and appropriate TEST REPORT has to be submitted at the time of bid submission.
- SMC is free to draw samples after start of supplies from the supplied quantity and subject the same to test in a NABL Accredited Lab. SMC will bear the cost of testing of such sample. In case the desired test results fail, the Concessionaire shall be asked to replace the entire stock and the cost of testing and any other ancillary charges to be paid in regard to testing shall be borne by the Concessionaire.

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.

S. No	Features	Description
		<ul style="list-style-type: none"> • 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	<p>Energy measurement and communication features</p>	<ul style="list-style-type: none"> • The control panel at each of the switch point/ feeder should have a 3-phase energy meter as per MSEDCL meter specifications. 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. • 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	<p>Web based Application</p>	<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 stamping from the streetlight controllers. • It should be able to communicate with any individual switching points or collectively amongst networked switching points for control and monitoring. • It should able to record LED luminaires glowing and non-glowing hours of a particular switching point.

S. No	Features	Description
		<ul style="list-style-type: none"> ● 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. ● 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) ● 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 (24 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 or any other format suggested by SMC. ● 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.

S. No	Features	Description
		<ul style="list-style-type: none">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 attempt/ hacking, lights should remain OFF till default ON time recorded in the system.

Note:

2. Bidder will manage (warranty, operation, maintenance, web-based portal, communication charges) the installed CCMS units for the contract period.
3. The main control room and main system of CCMS should have adequate features (open APIs, Ports, etc.) to communicate with Integrated Command Control Center envisaged under Solapur Smart City Project.
4. 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.
5. The Bidder will have to submit Bill of Material and technical specifications for CCMS along with tender.
6. Bidders are required to note that any hardware or software under this project shall have to be compatible for integration with any other services being implemented by the Authority. Authority may in future want to integrate this services through a city level command and control center and this software and hardware shall be compatible for such future integration.

The Bidder will have to transfer the rights of usage of web-based application and necessary software used for CCMS operation on completion of Concession Period.

APPENDIX V. LIVE TECHNICAL DEMONSTRATION

The Successful Bidder shall be asked for Live Demonstration of LED lamps which are to be used during replacement in mixed load condition and under existing field condition along with CCMS. These trials will be monitored and verified jointly by SMC and its consultants. The detail process to be adopted for live demonstration is as under:

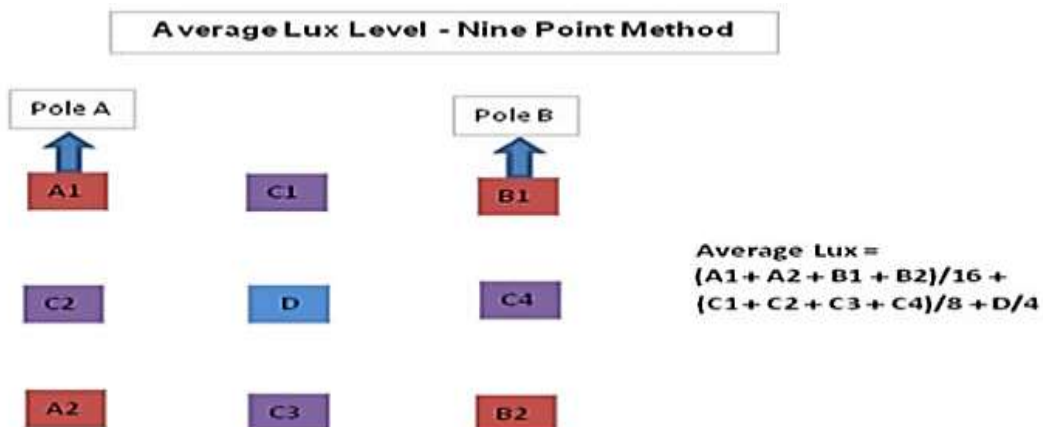
1. SMC will select a site from existing street light network or develop a test site for conducting live demonstration and performance assessment of the proposed LED luminaires.
2. Successful bidder will have to install the 6-8 numbers of proposed LED luminaires along with CCMS panel and make all the 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 minutes to evaluate the savings percentage achieved. Bidder shall note that no dimming of the luminaires be allowed for the Demonstration.

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, SMC 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.

APPENDIX VI. UNIT RATES FOR INFRASTRUCTURE DEVELOPMENT WORKS

[TO BE PROVIDED ON THE LETTER HEAD OF THE BIDDER SIGNED BY AUTHORIZED SIGNATORY]

The Authority shall arrive at Unit Rate payable to the Successful Bidder for infrastructure development by least cost method. All Bidders shall quote their unit rate in the following format, for each Item No, which shall be uploaded online along with bid submission (the "Unit Rate BOQ"). The Unit Rate BOQ of only the Qualified Bidders shall be opened and compared and the lowest rate quoted by each Bidder for each Item No of the following table and shall therefore become the unit rate payable for the respective Item No. to the Successful Bidder. Accordingly the Authority shall arrive at Unit Rates for each Item No activity which shall become unit rates applicable to the Successful Bidder ("Unit Rate"). The Unit Rate to be quoted by the Bidder shall not be higher than the rate mentioned in Column (4) in table below or the Applicable DSR. The rates provided by the Bidder shall be negotiated by the SMC prior to finalization and accordingly the negotiated rates shall become final Unit Rates.

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
(1)	(2)	(3)	(4)	(5)
7.1	Cables (CB)			
7-1-22	Supplying, erecting & terminating PVC armoured cable 4 core 25 sq mm aluminium conductor with continuous 5.48 sq mm (12 SWG) G.I. earth wire complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	219	
7-1-23	Supplying, erecting & terminating PVC armoured cable 4 core 35 sq mm aluminum conductor with continuous 5.48 sq mm (12 SWG) G.I. earth wire complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	268	
7-6-5	Supplying & laying (including excavation) 15 cm dia. RCC Hume pipe with coupling collar of standard thickness at required depth up to 90 cm below road / ground surface, for enclosing provided cable & necessary back filling with light ramming to make the road/ground surface as it was (Except bitumen carpet).	M	564	
7-6-11	Supplying and laying (including excavation) 50 mm outside dia. double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	M	185	
8.1	Steel Poles (OH-PL)			
8-1-7	Supplying and erecting Rolled steel Joist (Girder) pole 150 x 80 mm/150 x 75 mm (14.9 kg /m) with provided base plate in provided foundation as per specification No. OH-PL/RSJ	m	864.00	
8-1-9	Supplying and erecting Rolled steel Joist (Girder) pole 175 x 85 mm (19.6 kg/m) with provided base plate in provided foundation as per specification No. OH-PL/RSJ	m	1080.00	
8-1-10	Supplying and erecting Rolled steel Joist (Girder) pole 100 x 116 mm (23 kg/m) with provided base plate in provided foundation as per specification No. OH-PL/RSJ	m	1246.00	

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
8-1-11	Supplying and erecting Rolled steel Joist (Girder) pole 125 x 70 mm (13.3 kg/m) with provided base plate in provided foundation as per specification No. OH-PL/RSJ	m	790.00	
Note:-	As per contour of the site and position of different obstacles / layout the length of RSJ pole to be considered for each pole, also selection of size of pole shall be made on the basis of strength of pole which will decide its utility as normal, intermediate, cut point etc. The measurement sheet should be attached in estimate/bill. Necessary arrangement for earthing shall be provided, also the base plate should be taken separately for item no 8.1.7 to 8.1.11 for each pole			
8-1-14	Supplying and erecting ISI mark G.I. pipe pole 'B' grade 80 mm dia 6 m long with pole cap, base plate in provided foundation as per specification No. OH-PL/GIP	Each	4356.00	
8-1-15	Supplying and erecting M.S. pipe pole 'B' grade 80 mm dia 6 m long with pole cap, base plate in provided foundation as per specification No. OH-PL/GIP	Each	4363.00	
8-1-16	Supplying and erecting steel tubular swaged type welded pole with upper portion hydraulically bent swan neck, 165.1 x 139.7 x 114.3 mm dia with 4.5 x 4.50 x 3.65 mm thickness (5 + 2 + 3 m) respectively (net vertical height 9 m.) total length 10 m long with base plate in provided foundation. (weight 156.75 kg) as per specification No. OH-PL/STP	Each	14772.00	
8-1-17	Supplying and erecting steel tubular swaged type welded pole with upper portion bent swan neck, 165.1 x 139.7 x 114.3 mm dia. with 4.5 x 4.5 x 3.65 mm thickness (5.6 + 2.7 + 2.7 m) respectively total 11 m long with base plate in provided foundation. (weight 175 kg) as per specification No. OH-PL/STP	Each	15114.00	
8.3 Hot Dipped Galvanized Poles and High Mast (OH-HM)				
8-3-1	Supplying and erecting 12.5 m (clear height) High Mast (Top-150mm, Bottom- 360mm) with lowering and raising motorized unit, lantern carriage assembly suitable for max. 6 nos. luminaries and its control gear box, lightning finial, arrangement for fixing aviation light and foundation bolts on provided foundation as per specification No. OH-PL/HM (excluding luminaries and CG Boxes.)	Set	193809.00	
8-3-3	Supplying and erecting 16 m (clear height) High Mast (Top-150 mm, Bottom- 410mm) with lowering and raising motorized unit, lantern carriage assembly suitable for max. 12 nos. luminaries and its control gear box, lightning finial, arrangement for fixing aviation light and foundation bolts on provided foundation as per specification No. OH-PL/HM (excluding luminaries and CGBoxes).	Set	233250.00	

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
8-3-4	Supplying and erecting 20 m (clear height) High Mast (Top-150mm, Bottom- 410mm) with lowering and raising motorized unit, lantern carriage assembly suitable for max. 8 nos. luminaries and its control gear box, lightning finial, arrangement for fixing aviation light and foundation bolts on provided foundation as per specification No. OH-PL/HM (excluding luminaries and CG Boxes).	Set	277580.00	
8-3-6	Supplying and erecting 25 m (clear height) High Mast (Top-150mm, Bottom- 540mm) with lowering and raising motorized unit, lantern carriage assembly suitable for max. 12 nos. luminaries and its control gear box, lightning finial, arrangement for fixing aviation light and foundation bolts on provided foundation as per specification No. OH-PL/HM (excluding luminaries and CG Boxes).	Set	352618.00	
Note:-	High Mast rates are including High Mast and its accessories, foundation bolts and aviation obstruction lights.			
	Hot Dipped Galvanized OCTAGONAL Poles			
8-3-13	Providing & erecting 6 m high (clear height) galvanised OCTAGONAL pole with foundation bolts having bottom of 130 mm A/F, top 70 mm A/F on provided foundation as per specification No. OH-PL/OPL	Each	12303.00	
8-3-14	Providing & erecting 7 m high (clear height) galvanised OCTAGONAL pole with foundation bolts having bottom of 130 mm A/F, top 70 mm A/F on provided foundation as per specification No. OH-PL/OPL.	Each	14186.00	
8-3-15	Providing & erecting 8 m high (clear height) galvanised OCTAGONAL pole with foundation bolts having bottom of 135 mm A/F, top 70 mm A/F on provided foundation as per specification No. OH-PL/OPL	Each	16147.00	
8-3-16	Providing & erecting 9 m high (clear height) galvanised OCTAGONAL pole with foundation bolts having bottom of 155 mm A/F, top 70 mm A/F on provided foundation as per specification No. OH-PL/OPL	Each	18170.00	
8-3-17	Providing & erecting 10 m high (clear height) galvanised OCTAGONAL pole with foundation bolts having bottom of 175 mm A/F, top 70 mm A/F on provided foundation as per specification No. OH-PL/OPL	Each	20553.00	
8-3-18	Providing & erecting 11 m high (clear height) galvanised OCTAGONAL pole with foundation bolts having bottom of 210 mm A/F, top 90 mm A/F on provided foundation as per specification No. OH-PL/OPL	Each	25137.00	
8-3-19	Providing & erecting 12 m high (clear height) galvanised OCTAGONAL pole with foundation bolts having bottom of 240 mm A/F, top 90 mm A/F on provided foundation as per specification No. OH-PL/OPL	Each	28846.00	

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
8-3-30	Providing and erecting Galvanised 1000mm single arm sword type bracket with FRP dome and ball as per specification No. OH-PL/PBKT	Each	2154.00	
8-3-31	Providing and erecting Galvanised 1000mm double arm sword type bracket with FRP dome and ball as per specification No. OH-PL/PBKT	Each	3535.00	
Note:-	1) For bracket length of 1500 mm (Single/ double arm) increase overall rates by 20% 2) Above brackets are suitable for octagonal /conical poles from 3m to 12m length.			
	High Mast Control Panels			
8-3-32	Supplying and erecting Outdoor Stand Mounted Feeder Pillar for high mast of the same manufacturer with 32A TPN MCB incomer, single dial timer switch, 25 A TP contactor for automatic switching of luminaries, 2 no 9A contactors and raise/lower push button, and provision for termination of Incoming minimum 35 sq. mm and outgoing minimum 16 & 2.5 sq. mm cables complete erected in min. 14 guage CRCA sheet box with supporting angles, self lock, gasket and slanting top erected on CC foundation in an approved manner.	Job	24060.00	
8-3-33	Supplying and erecting Outdoor Stand Mounted Feeder Pillar for highmast of the same manufacturer with 63A TPN MCB incomer, single dial timer switch, 45 A TP contactor for automatic switching of luminaries, 2 no 9A contactors and raise/lower push button, and provision for termination of Incoming minimum 35 sq. mm and outgoing minimum 16 & 2.5 sq. mm cables complete erected in min. 14 guage CRCA sheet box powder coated with supporting angles, self lock, gasket and slanting top erected on CC foundation in an approved manner.	Job	26698.00	
Note:-	For item no. 8-3-32 & 8-3-33 rates are inclusive of foundation.			
8.4 Brackets (OH-BKT)				
8-4-1	iron 50x50x6 mm and 550 mm long for 2 insulators, and erecting on pole with 50x6mm clamp complete as per specification No. OHPL/ BKT	Each	343.00	
8-4-2	Supplying MS pole bracket for guarding, fabricated from angle iron 50x50x6 mm and 1100mm long for 4 insulators, and erecting on pole with 50x6mm clamp complete as per specification No. OHPL/BKT	Each	458.00	
8-4-3	Supplying MS pole bracket, for guarding fabricated from ISMC Channel 75 x 40 x 6.8 mm and 550 mm long for 2 insulators and erecting on pole with 50x6mm clamp complete as per specification No. OH-PL/BKT	Each	380.00	
8-4-4	Supplying MS pole bracket, for guarding fabricated from ISMC Channel 75 x 40 x 6.8 mm and 1100 mm long for 5 insulators and erecting on pole with 50x6mm clamp as per approved	Each	651.00	

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
	method of construction and complete as per specification No. OHPL/BKT			
8-4-5	Supplying MS pole bracket for OH conductor fabricated from 65 x 65 x 6 mm section, 550 mm long for 2 insulators and erecting on pole with 50x6 mm clamp as per approved method of construction and complete as per specification No. OH-PL/BKT	Each	384.00	
8-4-6	Supplying MS pole bracket for OH conductor fabricated from 65 x 65 x 6 mm section, 1100 mm long for 4 insulators and erecting on pole with 50x6 mm clamp as per approved method of construction and complete as per specification No. OH-PL/BKT	Each	657.00	
8-4-7	Supplying pole bracket, for OH conductor fabricated from ISMC channel, 75x40x6.8 mm550mm long for 2 insulators and erecting on pole with 50x6 mm clamp as per approved method of construction and complete as per specification No. OH-PL/BKT	Each	350.00	
8-4-8	Supplying pole bracket, for OH conductor fabricated from ISMC channel, 75x40x6.8 mm1100mm long for 4insulators and erecting on pole with 50x6 mm clamp as per approved method of construction and complete as per specification No. OH-PL/BKT	Each	651.00	
8-4-9	Supplying pole bracket,for OH conductor fabricated from ISMC channel, 75x40x6.8 mm, 550 mm long for two insulators and welded with extension channel pieces of same size 300 mm in length and erecting on pole with 50x6 mm clamp as per approved method of construction and complete as per specification No. OHPL/BKT	Each	477.00	
8-4-10	Supplying pole bracket, fabricated from ISMC channel, 75x40x6.8 mm, 1100 mm long for 4 insulators and welded with extension channel pieces of same size 300 mm. in length and erecting on pole with 50x6 mm clamp as per approved method of construction and complete as per specification No. OH-PL/BKT	Each	665.00	
8-4-11	Supplying 100 x 50 mmwith 4.7 mm thick web and 7.5 mm thick flange channel iron cross arm of suitable length for 2.4m wide DP structure and erecting on DP with 50x6 mm clamp as per approved method of construction and complete as per specification No.OH-PL/BKT.	Each	1751.00	
Note:-	For distance exceeding 2.4 m between two pole structure add Rs. 840/- per meter for extra channel length.	Each		

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
8-4-12	Supplying and erecting Vee cross arm for 11kV HTOH line with arrangement to fix insulator at 45mm from the end & horizontal distance between insulators 1220 mm bent at angle of 60 degree keeping base 305 mm and the total vertical height of V cross arm as 460mm, and fixed on pole with MS clamp of 80x10 mm, nut bolts, washers complete as per specification No. OH-PL/VCA	Each	1609.00	
8-4-13	Supplying and erecting Vee cross arm for 22/ 33kV HTOH line with arrangement to fix insulator at 45mm from the end & horizontal distance between insulators 1530 mm bent at angle of 60 degree keeping base 310 mm and the total vertical height of V cross arm as 460mm, and fixed on pole with MS clamp of 80x10 mm, nut bolts, washers complete as per specification No. OHPL/VCA	Each	2171.00	
8-4-14	Supplying and erecting 75x40 mm with 4.4 mm thick web and 7.3 mm thick flange channel (top pin) with clamp of suitable length so as to maintain vertical clearance of 1065 mm for 11 kV, 1320 mm for 22 kV between insulators for erection of top pin insulators complete as per specification No. OH-PL/VCA	Each	451.00	
8-4-15	Supplying and erecting bracket for guarding, made from channel iron 1600 mm in length and 75x40 mm. with 4.4 mm. thick web and 7.3 mm thick flange erected on pole complete as per specification no. OH-PL/VCA	Each	890.00	
8-4-16	Supplying and erecting bracket for guarding, made from channel iron 1600 mm in length and 65 x 65 x 6mm thick web and 7.3 mm thick flange erected on pole as per specification no. OH-PL/VCA	Each	806.00	
8-4-21	Supplying & erecting inline cut point end pole D. P. Structure for 11/0.415 kV, 63 kVA Transformer with R.S.J. Pole 2 Nos. of size 100 x 116 mm x 11 Mtr. Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG (size 4 SqMtr.) with 4 Pole MCCB 100 Amps as incomer & 6 Nos. 63 Amps Kitkat for outgoing circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos. Top channel of size 100 mm x 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 x mm for erecting Transformer. Channel of size 75 x 40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x 6 mm for erecting Distribution Box, Transformer Belt etc. as per drawing (min. 176 Kg. iron work) with necessary clamps, Nut-bolts. Vee cross arm, top clip, insulators etc. complete with caution board & barbed wire. D.P. Structure shall be erected in c.c. foundation complete.	Each	105557.00	

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
8-4-22	Supplying & erecting inline cut point end pole D. P. Structure for 11/0.415 kV, 100 kVA Transformer with R.S.J. Pole 2 Nos. of size 100 x 116 mm x 11 Mtr. Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG (size 4 SqMtr.) with 4 Pole MCCB 200 Amps as incomer & 6 Nos.100 Amps Kitkat for outing circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos.Top channel of size 100 mmx 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 x mm for erecting Transformer. Channel of size 75 x 40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x6 mm for erecting Distribution Box, Transformer Belt etc.as per drawing (min. 176 Kg. iron work) with necessary clamps, Nut-bolts. Vee cross arm, top clip, insulators etc. complete with caution board & barbed wire.D.P. Structure shall be erected in c.c. foundation complete.	Each	116420.00	
Note:-	1. All the brackets, cross arms are included with clamps, washers and nut bolts. 2. For all components in the DP structure for pole mounted transformer the respective specifications will be applicable.			
8.5 Conductors (OH-CON)				
8-5-1	Supplying and erectingall aluminium stranded conductors 7/1.96 mm complete.(Rose) (58 kg/km) as per specification No. OH-CON/AAC	Km	12818.00	
8-5-2	Supplying and erectingall aluminium stranded conductors 7/2.21 mm. complete. (Gnat)(73.77kg/km) as per specification No. OH-CON/AAC	Km	21782.00	
8-5-3	Supplying and erectingall aluminium stranded conductors 7/2.48 mm.complete. (Iris) (91.8 kg/km) as per specification no. OH-CON/AAC	Km	19810.00	
8-5-4	Supplying and erectingall aluminium stranded conductors 7/2.78 mm.complete. (Pansy) (115.8 kg/km) as per specification No. OH-CON/AAC	Km	25201.00	
8-5-5	Supplying and erectingall aluminium stranded conductors 7/3.10 mm. complete. (Ant.) (145.0 kg/km) as per specification No. OH-CON/AAC	Km	30709.00	
8-5-6	Supplying and erecting ACSR conductor of size 6/1-2.11 mmcomplete.(squirrel) (85kg/km) as per specification No. OHCON/ ACSR	Km	16106.00	
8-5-7	Supplying and erecting ACSR conductor of size 6/1-2.59 mm complete.(Weasel)(127.7 kg/km) as per specification No. OHCON/ACSR	Km	20631.00	
8-5-8	Supplying and erecting ACSR conductor of size 6/1-3.60 mmcomplete.(Ferret) (171.3 kg/km) as per specification No. OHCON/ ACSR	Km	32214.00	
8-5-9	Supplying and erecting ACSR conductor of size 6/1-3.66 mm complete.(Mink)(255 kg/km) as per specification No. OHCON/ ACSR	Km	49800.00	

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
8-5-10	Supplying and erecting ACSR conductor of size - 6/1-4.09 mm(Racson) complete. (318.00 kg/km) as per specification No. OHCON/ACSR	Km	61993.00	
8-5-11	Supplying and erecting ACSR conductor of size - 6/1-4.72 mm (Dog) complete. (394.00 kg/km) as per specification No. OHCON/ACSR	Km	742347.00	
8-5-12	Supplying and erecting hard drawn G.I. wire 8 SWG complete erected for overhead line with proper size of G.I. wire for bindingwith jumpering etc.	Km	7299.00	
8.6 Insulators (OH-INS)				
8-6-1	Supplying and erecting pin type LT medium insulator 100 mm x 62 mm dia. with suitable G.I. spindle, nut, bolts complete erected.	Each	63.00	
8-6-2	Supplying and erecting porcelain shackle type LT medium insulator 75x115 mm dia. with G.I. strips, nuts and bolts complete.	Each	50.00	
8-6-3	Supplying and erecting porcelain shackle type LT medium insulator 50 x 89 mm dia. with G.I. strips, nuts and bolts complete.	Each	47.00	
8-6-4	Supplying and erectingaluminium bobbin with G.I. strip, nuts complete.	Each	78.00	
8-6-5	Providing and fixing earthing studwith necessary materials.	Each	48.00	
8-6-6	Supplying and erecting porcelain disc type insulator suitable for 11kVline, complete as per specification No. OH-INS/DI	Each	997.00	
8-6-7	Supplying and erecting porcelain disc type insulator suitable for 22kV line, complete as per specification No.OH-INS/DI	Each	1359.00	
8-6-8	Supplying and erectingporcelain disc type insulator suitable for 33 kVline complete as per specification No. OH-INS/DI	Each	1711.00	
8-6-9	Supplying and erecting porcelain pin type insulator suitable for 11kV line, complete as per specification No. OH-INS/PN	Each	237.00	
8-6-10	Supplying and erecting porcelain pin type insulator suitable for 22kV line, complete as per specification No. OH-INS/PN	Each	298.00	
8-6-11	Supplying and erecting porcelain pin type insulator suitable for 33kVline, complete as per specification No.OH-INS/PN	Each	612.00	
8-6-12	Supplying and erectingporcelain post type insulator suitable for 11kVline, complete as per specification No. OH-INS/PST	Each	474.00	
8-6-13	Supplying and erectingporcelain post type insulator suitable for 22kV line,complete as per specification No. OH-INS/PST	Each	567.00	
8-6-14	Supplying and erecting porcelain post type insulator suitable for 33kV line, complete as per specification No. OH-INS/PST	Each	759.00	
8-6-15	Supplying and erecting Distribution class, 11 kVthyrite type lightning arrester, on provided cross arm as per specification No. OH-INS/LA	Each	1070.00	
8-6-16	Supplying and erecting Distribution class, 22 kVthyrite type lightning arresters, on provided cross arm as per specification No. OH-INS/LA	Each	1080.00	

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
8.7 Accessories				
8-7-1	Supplying and erecting G.I. stay set for poles, including loop insulators at inaccessible height complete with anchor plate 300 x 300 x 6 mm., straining screws, G.I. stay wire 7/10 SWG, G.I. stay rod 20 mm x 1.8 m length and pole clamps duly erected in provided cement concrete foundation	Each	1231.00	
8-7-2	Supplying and erecting G.I. stay set for poles, including loop insulators at inaccessible height complete with anchor plate 300 x 300 x 6 mm., straining screws, G.I. stay wire 7/8 SWG, G.I. stay rod 20 mm x 1.8 m length and pole clamps duly erected in provided cement concrete foundation	Each	1444.00	
8-7-4	Supplying and erecting G.I. self stay set for pole, including anchor plate 300x 300 x 6 mm. straining screw, loop-insulator, G.I. stay wire 7/10 SWG, G.I. stay rod 20 mm x 1.8 m long, erected with pole clamps along with angle iron bracket of 50 x 50 x 6 mm and one meter long fixed to pole at suitable height with suitable MS clamps duly erected in provided C.C. foundations	Each	1444.00	
8-7-5	Supplying and erecting G.I. wall hook, 10 to 15 mm dia and overall length 250 mm including grouting, cement plastering etc. complete.	Each	49.00	
8-7-6	Supplying and erecting pipe post made from ISI mark G.I. pipe 40 mm dia 3 m overall length, with two bends, fixed to pipe at the top & bottom, round bended, complete erected with MS flat welded MS bolts 15 cm long duly grouted in wall with necessary clamps, nuts and bolts etc. duly painted with two coats of aluminium paint complete.	Each	1065.00	
8-7-7	Supplying and erecting pipe post made from ISI mark G.I. pipe 25 mm dia 3 m overall length, with two bends, fixed to pipe at the top & bottom, round bended, complete erected with MS flat welded MS bolts 15 cm long duly grouted in wall with necessary clamps, nuts and bolts etc. duly painted with two coats of aluminium paint complete.	Each	961.00	
8-7-8	Supplying and erecting guarding loop using G.I. wire No. 8 SWG for L.T. over head line of horizontal formation complete erected with 20 SWG G.I. wire as binding wire and 50 mm. section on each side, complete.	Each	43.00	
8-7-9	Supplying and erecting fibre/ PVC spacers for L.T. overhead line 3 to 5 conductors complete erected.	Each	102.00	
8-7-10	Supplying and erecting pole clamp made from 50 x 6 mm MS flat for pole or pipe, post complete erected with 15 mm bolts and nuts, complete duly painted with one coat of red oxide and two coats of aluminium paint.	Each	212.00	
8-7-11	Supplying and erecting pole clamp made from 50 x 10 mm MS flat for pole or pipe, post complete erected with 15 mm bolts and nuts, complete duly painted with one coat of red oxide and two coats of aluminium paint.	Each	235.00	

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
8-7-12	Supplying and erecting 'D' type pole clamps, fabricated from 50 x 6 mm MS flat with 15 mm dia. bolts and nut fixed to steel tubular pole duly painted with one coat of red oxide and two coats of aluminium paint.	Each	119.00	
8-7-13	Supplying and erecting half clamps for pole made from 50 x 6 mm flat for fixing cross arms by means of 15 mm dia. bolts and nuts painted with one coat of red oxide and two coats of aluminum paint.	Each	119.00	
8-7-14	Supplying and erecting half clamps for pole made from 50 x 10 mm flat for fixing cross arms by means of 15 mm dia. bolts and nuts painted with one coat of red oxide and two coats of aluminium paint.	Each	379.00	
8.8 Dismantling				
8-8-1	Dismantling the existing pole up to 6 m height with brackets, clamps, insulators, stay from the cement concrete foundation and making the site clear by refilling the pits with excavated materials and bringing it to the ground level.	Each	416.00	
8-8-2	Dismantling the existing pole above 6 m height with brackets, clamps, insulators, stay from the cement concrete foundation and making the site clear by refilling the pits with excavated materials and bringing it to the ground level.	Each	678.00	
8-8-3	Dismantling the existing overhead line including G.I. wires of all sizes without damaging & making the coils in suitable sizes.	km	941.00	
8-8-4	Dismantling existing lightning arrestor set, insulator complete from DP structure in an approved manner	Job	79.00	
9.1	Earthing (EA)			
9.1.4	Providing pipe type earthing with 40mm. dia. G.I. pipe or 20 mm dia. G.I. Rod complete with all materials as per specification No. EA-EP	each	1218	
9.1.5	Supply, Installation, Testing and commissioning of UL Certified / CPRI Tested Maintenance Free Earthing comprising of Electrode of 17.2 mm diameter Low Carbon Steel with 250 micron Molecular Copper Bonded Earthing Rod of Length 3m along with 25 kg Carbon Based environment friendly back fill Ground Enhancing compound required to fill up the excavated earth with required quantity as per specification no EA-MOBI	each	12531	
16.1	Earthing (EA)			
16-3-8	Providing & casting of M- 20 grade reinforced cement concrete (RCC) foundation suitable for 6m to 8m high octagonal /conical G.I. pole considering the safe soil bearing capacity at site as 10 T/sq m at 1.5 m depth including supply of steel, concrete, excavation and fixing provided nut bolts with the help of template as per design in an approved manner.	Each	6544.00	
16-3-9	Providing & casting of M- 20 grade reinforced cement concrete (RCC) foundation suitable for 9m & 10m high octagonal	Each	8581.00	

Item No	Short Description	Unit	Rate (Material + Labor)	Bidder's Rate (Material + Labor)
	/conical G.I. pole considering the safe soil bearing capacity at site as 10 T/sq m at 1.5 m depth including supply of steel, concrete, excavation and fixing provided nut bolts with the help of template as per design in an approved manner.			
16-3-11	Providing & casting M- 20 cement concrete foundation suitable for 12.5 m raising lowering high mast considering the safe soil bearing capacity at site as 10 T/sq m at 2 m depth including excavation and fixing provided nut bolts with the help of template as per design in an approved manner.	Each	35327.00	
16-3-12	Providing & casting M- 20 cement concrete foundation suitable for 16 m raising lowering high mast considering the safe soil bearing capacity at site as 10 T/sq m at 2 m depth including excavation and fixing provided nut bolts with the help of template as per design in an approved manner	Each	44098.00	
16-3-13	Providing & casting M- 20 cement concrete foundation suitable for 20 m raising lowering high mast considering the safe soil bearing capacity at site as 10 T/sq m at 2 m depth including excavation and fixing provided nut bolts with the help of template as per design in an approved manner.	Each	55006.00	
16-3-14	Providing & casting M- 20 cement concrete foundation suitable for 25 m high mast considering the safe soil bearing capacity at site as 10 T/sq m at 2 m depth including excavation and fixing provided nut bolts with the help of template as per design in an approved manner.	Each	62966.00	
	Centralized Control and Monitoring System (CCMS)			
	As per tender specifications			
	Single Phase 5 KVA Capacity			
	3 Phase 15 KVA Capacity			
	3 Phase 25 KVA Capacity			

Duly authorized to sign the bid for and on behalf of

[Signature]

Name:

Title:

Date:

Place:

[Name, signature and title of the Authorized Person in whose name a power of attorney was issued.]

Note: The quoted rates online in the Price Bid shall be inclusive of all taxes, duties, etc. and applicable Goods and Services Tax (GST) 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.



Solapur Municipal Corporation

DRAFT ESPC

Particulars	Details
Client	Solapur Municipal Corporation (SMC), Solapur, INDIA
Project Name	Implementation of projects under Smart City Mission in Solapur City
Assignment Name	Selection of Energy Service Company (ESCO) for Implementing Energy Efficient Street Lights and Centralized Control and Monitoring System for Solapur on PPP Mode.
Document Name	Volume – II Draft Energy Savings Performance Contract (ESPC)
Document Issue Date	26/04/2018
Document Number	2018-19/01

Solapur Municipal Corporation

Indrabhuvan, Dr. Ambedkar Chowk, Railway Lines, Solapur - 413001

April 2018

DRAFT ENERGY SAVINGS PERFORMANCE CONTRACT (ESPC)

Between

SOLAPUR MUNICIPAL CORPORATION

and

[Name of ESCO]

Dated XXXX XX, 201X

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This energy performance contract (the "**Contract**") is made on [xxx] by and between:

1. **Solapur Municipal Corporation** of the city of Solapur, State of Maharashtra, having its registered office at [?] and its legal representative being [xxx],

Hereinafter referred to as "**SMC**"; And

2. [?], a **company** duly registered in India per the Companies Act of 1956, as amended from time to time, located at [?] and its representative being [xxx], duly authorized, Hereinafter referred to as "**ESCO**" or the "**Contractor**".

SMC and the Contractor are hereinafter referred to individually as a "**Party**" and collectively as the "**Parties**".

WHEREAS:

- A. Solapur Municipal Corporation (SMC) operates the street lighting infrastructure in the city of Solapur and wishes to enter into a Concession Agreement with the Concessionaire. The Concessionaire will undertake the work of replacement of existing street lights with energy efficient LED street lights, installation of centralized control and monitoring systems (CCMS) along with operation and maintenance (O&M) for a Concession Agreement period of 10 years (the "**Project**") including installation period of 09 months (extendable by 03 months with prescribed penalty clause) and remaining for O&M and energy savings payment from the Effective Date.
- B. The Project Area comprises of poles that are under jurisdiction of SMC's eight administrative zones (1 to 8). There are a total of 40479 luminaires in place being operated by 1,340 switching points/ feeder panels (the "**Project Area**").

- C. The Concessionaire submitted a bid in response to the request for proposal issued by SMC. The Concessionaire proposed the lowest cost / highest revenue to SMC for the duration of the Project and was thus selected by SMC as the Successful Bidder.
- D. SMC invited the Contractor to enter into this Contract.

NOW THEREFORE, the Parties agree as follows:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this Contract (including the recitals and schedules), the following words and expressions have the following meanings:

"**Annual O&M Fee**" means the product of the O&M Fee and the number of street lighting fixtures taken over by the Contractor under the Project.

"**SMC**" means the Solapur Municipal Corporation.

"**SMC Event of Default**" has the meaning given in Article 27.2.

"**SMC Representative**" means the person appointed by SMC to represent SMC and communicate with the Contractor.

"**MSEDCL**" means the Maharashtra State Electricity Distribution Company, the distribution company supplying electricity to the city of Solapur.

"**Commencement Date**" has the meaning given in Article 2.3.

"**Consent**" means any permit, consent, approval, authorization, agreement, no objection certificate, waiver or licence which must be obtained by the ESCO in order to perform the Services and for any goods to be transported, imported and exported.

"**Contract**" means this energy performance contract entered into between SMC and the Contractor on the date hereof, including the recitals and schedules, as may be amended from time to time by the Parties.

"**Contractor (or ESCO)**" means *[name of Winning Bidder]*

"**Contractor Event of Default**" has the meaning given in Article 27.3.

"**Contractor Representative**" means the person appointed by the Contractor to represent the Contractor and communicate with SMC.

"**Contract Year**" means successive periods of twelve (12) calendar months commencing on the Commencement Date.

"**Corrupt Act**" means the act of promising, giving, receiving, or agreeing to receive money or some other item of value with a corrupt aim, or perceived aim, of influencing a public official in the discharge of his official duties; and acts giving rise to criminal liability under Indian Laws.

"**Delay Liquidated Damages**" means an amount per week of delay calculated in accordance with Article 8 in the event the Services are not completed in accordance with the Timeline.

"**Effective Date**" means the date on which this Contract and all of its schedules are signed by the duly empowered representatives of both Parties.

"**Energy Baseline**" has the meaning given in Article 5.1.

"**Energy Conservation Measures (ECMs)**" means the installation of new equipment, modification or alteration of the Existing Lighting Facilities by the Contractor and at the Contractor's cost, in the city of Solapur, or revised operation and maintenance procedures to reduce energy costs by improving efficiency of use.

"Energy Savings" means a reduction of energy consumption resulting from the Contractor's ECMs taking into consideration quality of power supply. Energy Savings are determined by comparing the Energy Baseline with the energy consumed (or electrical demand) after ECMs are implemented.

"Energy Savings Fee" has the meaning given in Article 16.1.

"Existing Lighting Facilities" means all SMC (or MSEDCL wherever relevant) owned street lighting equipment and apparatuses, including, but not limited to, poles, cables, wires, lighting fixtures, fittings, ballasts, lamps, tubes, switching devices and timers within the Project Area.

"Force Majeure Event" has the meaning given in Article 20.

"Financial Year" means (i) the period commencing on the Commencement Date and ending at midnight on the following March 31; and (ii) thereafter, each period commencing on April 1 and ending on the following March 31, unless this Contract is terminated or expires, in which case the period will end at the end of the Term.

"Independent Energy Auditor" means the third party energy auditor appointed by SMC for undertaking the scope of work described under SCHEDULE IV.

"Laws" means all current or future (during the Term of the Project) applicable Indian laws, administrative regulations, local regulations, regulations on the exercise of autonomy, special regulations, rules, judicial interpretations and other regulatory documents with legal binding force or any compulsory requirement.

"Lender" means a person providing financing to the Contractor in relation to this Project.

"Material Adverse Effect" means any material adverse effect on (i) the ability of the Contractor to observe and perform any of its rights and obligations under this Contract under normal circumstances, and/or (ii) the legality, validity, binding nature or enforceability of this Contract.

"Material Adverse Government Action" has the meaning given in Article 21.

"MERC" means Maharashtra State Electricity Regulatory Commission

"Operation and Maintenance (O&M)" means all the activities required for operation and maintenance of the street lighting fixtures handed over to the Contractor within the Project Area including, but not limited to, those required for meeting the lighting standards specified in this Contract.

"O&M Fee" has the meaning given in Article 16.2.

"Performance Guarantee" has the meaning given in Article 18.

"Phase" (1, 2, 3 or 4) has the meaning given in Article 6.

"Project" has the meaning given in the Recitals.

"Project Area" has the meaning given in the Recitals.

"Quoted Guaranteed Energy Savings" means the percentage of guaranteed energy savings that the Contractor offered in its bid for the Term of the Project.

"Required Action" has the meaning given in Article 26.1.3.

"Services" means the services to be performed by the Contractor pursuant to this Contract and described in SCHEDULE I.

"Subcontractor" means any person to whom execution of any part of the Services is subcontracted by the Contractor, directly or indirectly, and includes such person's legal successors or permitted assignees.

"Term" means the period starting on the Commencement Date and ending on the tenth (10th) anniversary of the Commencement Date (as may be extended in accordance with Article 2.4) or on the Termination Date, whichever is earlier.

"Termination Date" means any date of early termination of this Contract pursuant to Article 27.

"Third Party Energy Audit (TPEA)" means the process of determining the energy baseline consumption norm for each switching point (as per the methodology provided in SCHEDULE IV) and joint verification of the street lighting asset inventory for such switching points by deployment of necessary devices and equipment by the Independent Energy Auditor in the presence of SMC and the Contractor.

"Timeline" means the timeline described in Article 6.

"Value of Guaranteed Energy Savings" means the product of the Energy Baseline consumption (kWh) for street lighting fixtures taken over by the Contractor under the Project and the Quoted Guaranteed Energy Savings.

1.2 Interpretation

1.2.1 In this Contract, except where the context requires otherwise:

- a) The masculine includes the feminine and vice versa;
- b) The singular includes the plural and vice versa;
- c) A reference in this Contract to any article, paragraph or schedule is a reference to an article, a paragraph or schedule of this Contract, except where it expressly states the contrary;
- d) Save where otherwise provided in this Contract, any reference to this Contract or to any other document includes any permitted variation, amendment or supplement to such document;
- e) The words "include" or "including" are to be understood as being followed by "without limitation" or "but not limited to" whether or not they are actually followed by such words;
- f) A reference to a person includes firms, partnerships and corporations and their successors and permitted assignees or transferees;
- g) A reference to any law includes any amendment brought to such law from time to time or any law that may replace or consolidate the same that occurs before or after the Effective Date of this Contract; and
- h) Headings are for convenience of references only.

1.2.2 If there is any discrepancy between the main body of the Contract and its Schedules, the main body shall prevail over the Schedules.

2 TERM AND COMMENCEMENT

2.1 Effective Date and Term

2.1.1 This Contract comes into effect on the Effective Date and expires on the tenth (10th) anniversary of the Commencement Date (the “**Term**”), unless terminated earlier pursuant to Article 27 or extended in accordance with Article 2.4.

2.2 Conditions Precedent

2.2.1 The Parties shall ensure that the following conditions are met, or waived by both Parties, as soon as possible following the Effective Date and in any event no later than sixty (60) days from the Effective Date or such later date as may be agreed by the Parties:

- a) The Contractor has delivered the Performance Guarantee duly executed in accordance with Article 18.1.1 and SMC has returned the Bid Security;
- b) The Parties have entered into a Trust and Retention Account Agreement in accordance with Article 17.1 and SCHEDULE VI ;
- c) SMC has appointed an Independent Energy Auditor selected following a transparent and competitive tender procedure launched by SMC;
- d) SMC shall provide the Contractor with space measuring at least fifty-five (55) square meters in SMC's headquarters for an in-house control room to be established by the Contractor;
- e) SMC shall appoint and notify the Contractor of the name of the SMC Representative;
- f) The Contractor shall appoint and notify SMC of the name of the Contractor Representative;
- g) SMC shall provide the Contractor with a letter duly executed granting the Contractor access to all the Existing Lighting Facilities;
- h) The Parties shall agree on a maximum fixed amount to be paid to the Independent Energy Auditor to undertake the scope of work described in SCHEDULE IV;
- i) SMC shall provide the Concessionaire with a letter duly executed granting the Concessionaire access to the Existing Lighting Facilities/infrastructure.

2.2.2 If the conditions precedent referred to in Article 2.2.1 are not satisfied or waived, as applicable, within ninety (90) days after the Effective Date, the Parties shall meet to discuss how to satisfy the outstanding conditions. If the Parties cannot agree on a timetable to complete the outstanding conditions within thirty (30) days of the first meeting, then either Party may terminate this Contract by giving a thirty (30) days' notice to the other Party. Upon the expiry of such period, this Contract is automatically terminated without the need for further notice, unless the outstanding conditions have been satisfied by such date, in which case this Contract will not terminate.

2.2.3 Notwithstanding the preceding paragraph, if the conditions precedent referred to in Article 2.2.1 are not satisfied on account of reasons solely attributable to the Contractor, then SMC is

entitled to call the earnest money deposit or the Performance Guarantee, as the case may be, delivered by the Contractor and terminate the Contract in accordance with Article 2.2.2.

2.3 **Commencement of Services**

2.3.1 If the conditions precedent indicated in Article 2.2.1 are satisfied or waived, as applicable, by the Parties, the Parties shall promptly convene and sign a notice fixing the commencement date (the "**Commencement Date**").

2.4 **Extension of Term**

2.4.1 SMC shall notify the Contractor six (6) months before the end of the Term if it wishes to enter into negotiations regarding an extension to this Contract. If both Parties agree, the Contract may be extended for a period mutually agreed after the end of the Term.

3 SERVICES

3.1 Scope of Services

3.1.1 Without prejudice to any other provision of this Contract, the Contractor shall carry out the Services set out in SCHEDULE I within the Project Area and undertake the other obligations to be performed by the Contractor as further described in this Contract from the Commencement Date and until the end of the Term.

3.2 Undertakings

3.2.1 The Contractor undertakes the following:

- a) The provision of the Services shall not contravene any Law and shall comply with all Laws;
- b) The Contractor shall perform and complete the Services in a professional, timely, safe and environmentally responsible manner and comply with the safety, health and security regulations in force in India and the State of Maharashtra;
- c) The Contractor shall use appropriate, advanced and proven technology, software and information systems;
- d) The Contractor shall carry out its obligations under this Contract in a manner which is consistent with Indian standards, international best practices, methods, techniques, skills, diligence and prudence which are generally expected from an energy service company with similar obligations; and
- e) The aggregate equity shareholding issued and paid up by the Lead Member of the Contractor shall not be less than fifty-one per cent (26%) for the Terms of the Project and the aggregate equity shareholding issued and paid up by the Consortium as a whole should not be less than 51% during the Term of the Project.

3.3 Extension of the Scope of Services

3.3.1 Two and a half (2.5) years after the Commencement Date, the Parties shall meet to discuss the possible extension of the scope of Services under this Contract to new lighting facilities. If the Parties do not agree on the terms and conditions for such extension, then SMC shall be entitled to enter into another contract with a third party for the new lighting facilities without any prejudice to this Contract and the Contractor's rights and obligations under this Contract.

4 SMC'S RESPONSIBILITIES

4.1 Access

- 4.1.1 SMC shall be responsible for providing the Contractor with, free of charge, on and from the Commencement Date, access to all information and data, the Existing Lighting Facilities, the premises for the in-house control room and all land in the Project Area, which access is required for the performance of the Services and in respect of which SMC has control. Access to the Existing Lighting Facilities and the land within the Project Area shall confer on the Contractor a right to only use the Existing Lighting Facilities and the land necessary to enable the Contractor to carry out the Services. If SMC removes any particular pole or fixture after the commissioning phase of the Project, the Contractor shall be entitled to the Energy Savings Fees that would have arisen out of the Energy Savings pertaining to such fixture for the remaining life of the Project, based on the average savings realised on a per fixture basis in the six (6) months prior to such removal; provided that the Contractor shall not be entitled to O&M Fees for such poles or fixtures. If access to any particular pole or fixture is not provided by SMC to the Contractor during Phase 4, the Contractor shall be entitled to the Energy Savings Fee for the fixtures that would have arisen out of the Energy Savings pertaining to such fixtures for the amount of time when access was not provided.
- 4.1.2 In the event SMC fails to provide the Contractor with, free of charge, access to all the Existing Lighting Facilities for any three (3) months during the Term, this shall constitute a SMC Event of Default in accordance with Article 27.2.1.

4.2 Assistance to the Contractor

- 4.2.1 If requested by the Contractor, SMC shall use its best endeavors to assist the Contractor in a timely and expeditious manner with the following:
- a) Obtaining all Consents necessary for the Services (excluding any qualifications that the Contractor should already possess) such as construction permits, permits for temporary use of land and temporary suspension of water, power or traffic, etc. ;
 - b) Protecting underground pipelines, buildings and structures (including historic relics) and trees located on or close to the Project Area;
 - c) Consulting with the Contractor if any construction or installation project implemented by SMC or other local public entity in the city of Solapur may have direct or indirect impact on the Contractor; and
 - d) Obtaining MSEDCL's full cooperation during the Term of the Contract.

4.3 Payment of Fees

- 4.3.1 In consideration for the Services performed by the Contractor under this Contract, SMC shall pay to the Contractor the Energy Savings Fee and the O&M Fee in a timely manner in accordance with Article 16.
- 4.3.2 The Contractor shall issue invoices to SMC. In the event SMC fails to pay the complete amount set on the invoice issued by the Contractor within thirty (30) days of issuance of such invoice, SMC shall be required to pay the outstanding amounts plus interest for late payment for every day of delay to be calculated at one point twenty-five per cent (1.25%) per month.

4.4 Lux Level Measurements

- 4.4.1 Upon commencement of Phase 4, SMC shall conduct, with the assistance of the Independent Energy Auditor, lux level measurements on five per cent (5%) of the street lighting fixtures, randomly selected by SMC, on a semi-annual basis. The Contractor shall participate in the lux level measurements along with SMC and the Independent Energy Auditor. If the lux levels are found to be below the applicable standards specified in SCHEDULE II, the Contractor shall make payments to SMC for the amounts as determined under Article 16.4.
- 4.4.2 Such semi-annual measurements must be completed by 31st March, 30th June, 30th September and 31st December of each Financial Year for the Term of the Project.

4.5 Operation and Maintenance

- 4.5.1 SMC shall be responsible for the operation, maintenance and invoicing of all the identified switching points and street lighting fixtures until the same are handed over to the Contractor at the end of Phase 1.

5 THE CONTRACTOR'S RESPONSIBILITIES

5.1 Energy Baseline Determination

5.1.1 With immediate effect from the Commencement Date, the Contractor shall undertake field surveys of the street lighting fixtures covered in the Project Area to accomplish the following (together, the "**Energy Baseline**"):

- a) Understand the physical layout and single line diagram of various circuits and validate the type and quality of fixtures installed thereon;
- b) Assess the number of switching points where feeder panels, including meters, are to be installed. The Contractor must cover all the streetlight fixtures under existing switching point/feeder panel and should not neglect/leave any of the poles while installing smart feeder panels. There should be at least 20% excess load capacity for each feeder panel;
- c) The Contractor shall from time to time revise the asset database and the marking of poles in accordance with the nomenclature agreed with SMC. The GPS and GIS survey data base prepared has to be updated regularly by Contractor for the selected Feeder panels and street light fixtures under ESCO project;
- d) Furthermore, upon SMC's approval for a particular switching point/feeder panels, the Contractor shall undertake the implementation of the proposed metering arrangement through MSEDCL and install the feeder panel comprising the metering equipment housed in a separately open able and sealable compartment. SMC shall assist the Contractor in coordinating with MSEDCL to finalise the technical specifications for such meters, have such meters tested in MSEDCL's labs, and install and seal such meters on the respective switching points.
- e) The Contractor will submit Lux report for the LED streetlight fixtures installed on each feeder in a lot of 10 feeders at a time.
- f) Avail buy-in from SMC on the proposed switching points metering plan. SMC shall respond in writing to the Contractor's plans to be submitted within one (1) week of such submission. If SMC fails to respond within one (1) week of such submission, the provisions of Articles 6.1.2 and 6.1.3 shall apply.

5.1.2 The Contractor shall undertake the preparation of an asset database and the marking of poles in accordance with the nomenclature suggested in SCHEDULE III.

5.1.3 Furthermore, upon SMC's approval of the metering plan for a particular switching point, the Contractor shall undertake the implementation of the proposed metering arrangement by installing the feeder panel comprising the metering equipment housed in a separately openable and sealable compartment. For switching points where the meters to be installed by the Contractor are to be considered as energy billing meter by MSEDCL, the Contractor shall ensure that such meters adhere to the specifications notified by MSEDCL and are tested in MSEDCL's meter testing labs, and are installed and sealed in accordance with MSEDCL's procedures. SMC shall assist the Contractor in coordinating with MSEDCL to finalise the

technical specifications for such meters, have such meters tested in MSEDCL labs, and install and seal such meters on the respective switching points.

5.1.4 Upon installing the feeder panels and meters on the switching points, the Contractor shall coordinate the TPEA as elaborated in SCHEDULE III along with the Independent Energy Auditor and SMC. SMC shall set off from the Energy Savings Fee, in accordance with Article 16.7, any necessary funds for onward release of payment to the Independent Energy Auditor within the maximum amount agreed upon between the Parties (as mentioned in Article 2.2.1(h)) and the payment terms of the contract to be entered into between SMC and the Independent Energy Auditor for the TPEA.

5.2 Services

5.2.1 Once the survey report prepared following the field surveys has been accepted by SMC, the Contractor shall begin carrying out the Services in accordance with SCHEDULE I.

5.2.2 SMC gives the exclusivity to the Contractor to carry out the Services described in SCHEDULE I in relation to all the Existing Lighting Facilities located within the Project Area throughout the Term and in accordance with this Contract.

5.2.3 Subject to the provisions of this Contract, the Contractor is solely responsible for the manner in which the Services are performed.

5.3 Environmental and Social Requirements

5.3.1 The Contractor shall carry out the Services in accordance with all relevant Laws in India, as well as the applicable environmental and social standards and guidelines to which the Equator Principles refer), and in particular:

- a) PS 1 assessment and management of environmental and social risks and impacts;
- b) PS 2 labour and working conditions;
- c) PS 3 resource efficiency and pollution prevention; and
- d) PS 4 community health safety and security.

5.3.2 The Contractor agrees to operate the Project with a documented environmental and social management system.

5.3.3 The Contractor shall ensure that the practices employed to replace, collect, transport and dispose lamps are in accordance with applicable Laws in India.

6 TIMELINE FOR IMPLEMENTATION OF THE PROJECT

6.1 Project Timelines – Implementation

6.1.1 The Services to be performed by the Contractor for the Project can be classified into four (4) different phases (the “Phase”) as described in the table below. The Contractor shall adhere to the stipulated timelines as mentioned hereunder:

Phase	Activity	Timeline
Phase 1	<p>Field Survey, Metering, Establishment of Energy Baseline and Handover i.e. Task – 1 of SCHEDULE I</p> <p>The activities in this phase must be conducted on a per switching point basis and include:</p> <ul style="list-style-type: none"> • Field survey and identification of switching points wise the street lighting stretches/ feeders to be covered under the Project. Identification of actual street lighting fixtures that are to be covered under the Project from those covered under the Project Area to be done at this stage based on a feasibility assessment; • Completion of pole marking/ asset marking in accordance with nomenclature requirements identified in SCHEDULE III • Completion work related to metering/ feeder panel installation on identified switching points. Such meters must adhere to the specifications notified by MSEDCL, are tested in MSEDCL's meter testing labs, installed and sealed in accordance with MSEDCL's procedures; • Third Party Energy Audit for establishing the energy baseline consumption norm and verifying asset details; • Handover of all identified street lighting fixtures and switching points by SMC to the Contractor; and • Identification of ECMs to be implemented by the Contractor • Establishment of an in-house centralized control and monitoring room. 	<p>Within three (3) months from the Commencement Date</p>
Phase 2	<p>Implementation Phase</p> <p>The activities in this phase cover the implementation of ECMs identified in Phase 1 on the respective metered/ handed over points/ stretches.</p>	<p>In parallel with Phase 1, for 9 (Nine) months, as and when the TPEA is completed for the respective feeders/stretches</p>

Phase	Activity	Timeline
Phase 3	<p>Commissioning Phase</p> <p>The activities in this phase cover the Project commissioning, including the taking over of respective Block of switching points with joint meter reading to be done along with SMC.</p>	<p>In parallel with Phase 2.</p> <p>Phase 3 shall be considered completed when ninety per cent (90%) of the Blocks within the Project Area are covered by the Contractor or ten (12) months from the Commencement Date, whichever is earlier.</p>
Phase 4	<p>Operation & Maintenance Phase</p> <ul style="list-style-type: none"> • O&M of switching points and street lighting fixtures covered under the Project, including (but not limited to) the replacement of non-functional fixtures at the Contractor's own cost. • The Contractor shall, on a daily basis, record and report to SMC the energy consumption, power outage, voltage dimming hours, hour wise number of estimated functional lamps, etc. as per SCHEDULE III. • The Contractor shall issue monthly invoices in the same monthly billing period (i.e. the same initial and final meter reading dates) as followed by MSEDCL and within seven (7) days of SMC's receipt of MSEDCL's bills for each switching point, providing detailed calculations of the actual energy savings achieved with respect to the energy baseline consumption norm determined by the TPEA. Such invoices should clearly highlight the actual energy consumption, total outage hours, and adjustments of non-functional fixtures for their respective durations as per the format provided in SCHEDULE III. • The Contractor shall provide training for SMC staff and other personnel concerned in the routine operation and maintenance of systems, including developing the training modules and toolkits. • The Contractor shall cooperate with the Independent Energy Auditor to allow monitoring, measurement, verification and reporting of performance and savings. • The Contractor shall participate with SMC and the Independent Energy Auditor in measurement of lux levels on five per cent (5%) of street lighting fixtures, randomly selected by SMC, on a semi-annual basis. 	<p>From the completion of Phase 3 until the Term of the Project</p>

Phase	Activity	Timeline
	<ul style="list-style-type: none"> The Contractor shall schedule interruptions of street lighting service in a manner that minimises such interruptions. Scheduled interruptions of street lighting service shall not exceed twelve (12) hours at a given time. 	

6.1.2 Notwithstanding the above Timeline, if the Contractor does not have access to part or the whole of the Existing Lighting Facilities for any reason, including, but not limited, to a Force Majeure Event (as defined in Article 20.1.1) for any period of time during the Term of the Contract, then the Contractor shall be excused from the performance or punctual performance of its obligations under this Contract for such period of time when he doesn't have access to all the Existing Lighting Facilities in the Project Area. In particular, the Contractor shall be excused from not having taken over seventy per cent (70%) of the street lighting fixtures within the Project Area, as required under Phase 3.

6.1.3 In addition, the deadline of the relevant Phase (1, 2 or 3) (as mentioned in the above Timeline) shall be extended for a period of time equal to the period of time during which the Contractor didn't have access to all the Existing Lighting Facilities.

7 ASSET OWNERSHIP

7.1 Existing Lighting Facilities

- 7.1.1 SMC (and/or other relevant Government Authorities, as applicable) shall at all times during the Term remain the owner of the land and the Existing Lighting Facilities, with the exception of certain poles which are owned by MSEDCL.
- 7.1.2 The Contractor shall handover SMC street lighting fixtures/ fittings and any other equipment that have been replaced for implementing the ECMs, to SMC at its stores within forty-eight (48) hours of such replacement. SMC shall make necessary arrangements for creation of space in its stores and onward usage or disposal of the replaced equipment as per applicable Laws.
- 7.1.3 The Contractor will not be liable for any liability in relation to the Existing Lighting Facilities existing prior to the Commencement Date or arising from any event or circumstance that occurred prior to the Commencement Date.

7.2 Newly Installed Equipment and Systems

- 7.2.1 The Contractor shall remain the owner of the equipment and systems installed by the Contractor during the Term. The Contractor shall undertake all the procurement of equipment and services necessary for the Project. The Contractor shall hand over any replaced equipment, fittings or other items to SMC with proper documentation for SMC's verification. The replaced equipment shall be free of any lien. At the end of the Term, the Contractor shall submit to SMC a list of all the equipment, fittings or other items that were replaced during the Term.
- 7.2.2 At the expiry of the Term, all rights and titles to, and interests in, all improvements and equipment constructed or systems installed are vested in SMC, subject to any payments made by SMC to the Contractor in accordance with Article 27.5.4 if applicable, free and clear of all and any liens and encumbrances created or caused by the Contractor. The Contractor shall surrender possession of the said equipment and systems to SMC in good repair and condition, reasonable wear and tear accepted.

8 DELAY LIQUIDATED DAMAGES

8.1.1 Where the Contractor fails to complete the Services within the Timeline provided under Article 6, SMC shall be entitled to receive Delay Liquidated Damages as follows:

- a) In the event the Contractor fails to finalize the activities of Phase 1 within the Timeline stipulated in Article 6.1, the Contractor shall be liable to pay SMC Delay liquidated damages of an amount equal to one lakh Indian Rupees (Rs. 1 lakh) for each week of delay, subject to a maximum delay of eight (8) weeks (the “**Liquidated Damages**”). In the event the activities in Phase 1 are not finalized by the Contractor within the maximum delay of eight (8) weeks after the Timeline stipulated in Article 6, this breach shall constitute a Contractor Event of Default and SMC shall be entitled to terminate this Contract in accordance with Article 27.4.1.
- b) In the event the Contractor fails to finalize the activities in Phase 3 within the Timeline stipulated in Article 6, the Contractor shall be liable to pay on a weekly basis to SMC Delay Liquidated Damages of an amount equal to the savings that would have been achieved if the remaining street lighting fixtures had been commissioned. The Guaranteed Energy Savings shall be used to estimate the amount of savings. If the activities in Phase 3 are not finalized by the Contractor within the maximum delay of eight (8) weeks after the Timeline stipulated in Article 6, this breach shall constitute a Contractor Event of Default and SMC shall be entitled to terminate this Contract in accordance with Article 27.4.1.

9 INDEPENDENT ENERGY AUDITOR

- 9.1.1 SMC shall appoint an independent energy auditor (the "Independent Energy Auditor") selected following a transparent and competitive tender procedure launched by SMC. All the Independent Energy Auditor's expenses shall be borne by the Contractor and shall be set off by SMC against the Energy Savings Fee to be paid by SMC to the Contractor in accordance with Articles 5.1.4 and 16.7.
- 9.1.2 The scope of work of the Independent Energy Auditor is described in detail in SCHEDULE IV.

10 REPRESENTATIONS AND WARRANTIES

10.1 Contractor's Representations and Warranties

The Contractor represents and warrants to SMC that:

- a) The Contractor is an independent company duly incorporated, validly existing and of good standing under Indian Laws;
- b) The Contractor is financially solvent, is able to pay its debts as they mature, and has sufficient capital and resources to complete its obligations under this Contract;
- c) The Contractor is not a party to any legal, administrative, arbitral, investigation or other proceedings or controversy, pending or (to the best of the Contractor's knowledge) threatened, that would adversely affect its ability to perform its rights and obligations under this Contract;
- d) Without SMC's written permission, the Contractor shall not engage in any related activities in the city of Solapur that may impinge upon this Project, other than the Services;
- e) The execution and performance of this Contract will not result in a breach or violation of, or constitute a default under, any agreement to which the Contractor is a party; and
- f) The execution and performance of this Contract has been duly authorised, and this Contract has been duly executed by the signatories and constitutes a legal valid and binding obligation.

10.2 SMC's Representations and Warranties

SMC represents and warrants to the Contractor that:

- a) SMC has the power and authority to enter into and perform its obligations under this Contract; and
- b) The execution of this Contract will not result in a breach or violation of or constitute a default under any agreement to which it is a party.

11 REPRESENTATIVES

11.1 SMC Representative

11.1.1 SMC may from time to time replace its Representative by notifying the Contractor (to be effective upon receipt by the Contractor).

11.1.2 The SMC Representative shall have full authority and power to represent and act for SMC at all times during the Term. All notices, instructions, orders, certificates, approvals and all other communications under this Contract shall be given by, and to, the SMC Representative unless SMC notifies the Contractor otherwise.

11.2 The Contractor Representative

11.2.1 The Contractor Representative shall have full authority and power to represent and act on behalf of the Contractor at all times during the Term, including for sending or receiving notices, instructions, information and all other communication in relation to this Contract.

11.2.2 The Contractor shall not revoke the appointment of the Contractor Representative without notifying SMC of the new Contractor Representative.

12 REPORTING

12.1.1 During the Term, the Contractor shall provide monthly reports to SMC about the following matters:

- a) Update on the assets;
- b) Operation and maintenance services;
- c) Energy saving report;
- d) Lamp failure report; and
- e) Monitoring and verification report.

12.1.2 If the Contractor does not issue monthly reports within ten (10) days of the end of the relevant month for any three (3) months or there is major false information in more than three (3) reports during the Term of the Contract, this breach shall constitute a Contractor Event of Default.

12.1.3 In addition to the reports mentioned in Article 12.1.1 , the Contractor shall provide daily reports during the entire Phase 4. If the Contractor does not issue daily reports in Phase 4 for three (3) consecutive days or for more than ten (10) days in a Financial Year, this breach shall constitute a Contractor Event of Default.

13 EMPLOYEES AND TRAINING

- 13.1.1 SMC shall remain the principal employer of the municipal employees working for SMC's street lighting department. Such employees may or may not, at the Contractor's sole discretion, be seconded to the Contractor for a specific duration and under terms and conditions to be agreed upon between the Parties. The Contractor has no obligation under this Contract to employ directly or indirectly any municipal employees.
- 13.1.2 Notwithstanding the preceding paragraph, the Contractor shall train the employees of SMC's street lighting department to operate, maintain and repair the equipment and systems installed by the Contractor. Training shall include both classroom and a practical instruction. Course materials shall include the Contractor's supplied operation and maintenance plans and manufacture manuals.
- 13.1.3 The Contractor's personnel, representatives or Subcontractors shall be under the complete control of the Contractor and shall not be deemed to be employees of SMC.

14 THIRD PARTY CLAIMS

14.1 Indemnification

14.1.1 The Contractor shall indemnify and hold harmless SMC and its employees or any other contractor from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs and expenses of whatsoever nature, including attorney's fees and expenses, that arise in connection with the execution of the Services due to the negligence or willful misconduct of the Contractor, any Subcontractor or their employees, in respect of the following, except to the extent that the following is caused by the negligence of SMC:

- a) the death or injury of any person;
- b) loss or damage to any property, real or personal; and
- c) third party losses and claims.

14.2 Handling of Claims

14.2.1 If any proceedings are brought or any claim is made against SMC in relation to the performance of the Services by the Contractor, any Subcontractor or their employees, SMC shall promptly notify the Contractor and set out full particulars of the claim. The Contractor shall conduct such proceedings or claims and any negotiations for the settlement of any such proceedings or claims at its own expense and on behalf of SMC and with SMC's assistance.

15 LIMITATION OF LIABILITY

15.1 Liability to SMC

15.1.1 The aggregate liability of the Contractor to SMC under this Contract in any Contract Year shall not exceed fifty per cent (50%) of the sum of the Energy Savings Fee based on Guaranteed Energy Savings and the O&M Fee for such Contract Year. The limitation of liability shall not apply to nor be reduced by:

- a) payments made by the Contractor pursuant to its insurance policies;
- b) the Contractor's liability in case of fraud, fraudulent misrepresentation, willful misconduct or willful default, gross negligence or corrupt practices; or
- c) the Contractor's liability in respect of any failure to pay any Subcontractor.

15.1.2 Neither SMC nor the Contractor shall be liable to the other under this Contract for any loss of profit, loss of revenue or any other indirect or consequential damages that may be suffered by the other Party.

15.1.3 Unless this Contract provides otherwise, no approval, expression of satisfaction, comment, review, payment or certificate whatsoever made or given (or any failure to make or give the same) by SMC, its representatives or employees under this Contract, shall relieve the Contractor of any of its obligations, risks or liabilities under this Contract.

16 REMUNERATION

16.1 Energy Savings Fee

16.1.1 As consideration for the Energy Savings achieved, SMC shall pay the Contractor a fee for the energy savings (the "**Energy Savings Fee**") subject to Contractor achieving minimum 60% of energy savings, which is computed as follows:

Energy Savings Fee for a given month = [90% x energy saved in the given month (kWh) x tariff (Rs./ kWh)] – [energy saved in the given month (kwh) x % Shared Savings with SMC x tariff (Rs./kwh)] declared by MERC from time to time.

16.1.2 SMC shall retain ten per cent (10%) of the Energy Savings realized each month during the Term of the Project. The payment of the Energy Savings Fee by SMC to the Contractor shall be governed by the following provisions:

- a) The Energy Savings Fee shall be provided by SMC to the Contractor as and when the handed over street lighting fixtures covered under a particular block of 25 switching points ("**Block**") that are commissioned in Phase 3. All the switching points will be considered together on a cumulative basis, provided that during Phase 3, the Contractor is eligible for payments from SMC only if minimum savings is achieved for all the handed over switching points considered together on a cumulative basis are equivalent to or greater than[*Insert Guaranteed Energy Savings*] of the Energy Baseline.
- b) If the realized monthly savings are less than [*Insert Guaranteed Energy Savings*] of the Energy Baseline, the Contractor shall make payments to SMC corresponding to fifty per cent (50%) of the difference between the amount of energy calculated at Energy Savings at [*Insert Guaranteed Energy Savings*] of the Energy Baseline and the realized percentage of Energy Savings. However the Shared Energy Savings shall be calculated on the basis of Guaranteed Energy Savings. The payment amount shall be determined based on the energy supply tariff applied for the given month by MSEDCL.

16.1.3 To determine SMC's payments as specified in Article 16.1.1, the Contractor shall issue to SMC monthly invoices for each switching point using the same starting and closing meter reading dates each month. The invoices must be accompanied by the tables attached in SCHEDULE III for each switching point, including calculations of the actual Energy Savings achieved based on the Energy Baseline for each point determined as per the provisions of Article 5.1. The invoices should clearly highlight the actual energy consumption, total outage hours, and adjustments of non-functional fixtures for their respective durations for each switching point. The Contractor shall ensure that the invoice issued is for the same billing period as that followed by MSEDCL.

16.2 O&M Fee

16.2.1 As consideration for the Operation and Maintenance services provided by the Contractor, SMC shall pay the Contractor an operation and maintenance fee (the "**O&M Fee**") on a quarterly

basis, to be invoiced in conjunction with the invoice for the Energy Savings Fee, for the handed over points starting from Phase 4.

16.2.2 The O&M Fee per pole per year per handed over street lighting pole shall be as per the Operations and Maintenance Cost quoted during the Bid stage.

16.2.3 The O&M Fee shall be escalated by 5% each year to arrive at the O&M Fee for the respective year.

16.3 Infrastructure Development Fee

The Concessionaire can raise the running amount bill of the work done under the Infrastructure Development as per Task – 3 of Scope of Work after every 30 days for the work completed till that date. SMC will review and approve work and SMC will pay for the approved works on receipt of the bill based on the unit rates fixed as per SCHEDULE VIII. Concessionaire shall not be provided any escalation amount of whatsoever on the unit rates established post negotiations.

16.4 Penalty for Non-Compliance with Lux Standards

16.4.1 If the Contractor fails to achieve the required lux levels based on the standards specified for the identified street lighting fixtures, as determined under Article 4.4, the Contractor shall make payments to SMC of an amount equal to the amount determined in accordance with the following formula for each Financial Year of the Term. Such amounts may be directly set off by SMC against the Energy Savings Fee in accordance with Article 16.7.

$$\text{Lux Non-Compliance Penalty} = \frac{\# \text{NCF}}{\# \text{CF}} \times [(\text{annual Value of Guaranteed Energy Savings}) + (\text{Annual O\&M Fee})]$$

Where,

NCF = number of non-compliant street lighting fixtures identified and

CF = number of street lighting fixtures surveyed

16.4.2 In the above formula, the Value of Guaranteed Energy Savings (in Indian Rupees) and the Annual O&M Fees (in Indian Rupees) shall be considered for the entire Project.

16.4.3 The Contractor shall stagger its payment to SMC into six (6) equal monthly instalments during six (6) months following the end of the respective Financial Year for which the semi-annual field measurements have been taken by the Independent Energy Auditor.

16.5 Penalty for Non-Compliance to Minimum Up-Time

16.5.1 The Contractor shall be responsible for maintaining the handed over street lighting fixtures under each switching point in good working condition and shall ensure that the non-working

lamp hours on each switching point are maintained within acceptable limits at all times during the Term.

16.5.2 All street lighting faults arising out of failures or malfunctioning of equipment installed by the Contractor shall be cured within a period of forty-eight (48) hours after the failure or malfunctioning is reported to SMC. Failure of the same shall result in a penalty of twenty-five Indian Rupees (Rs. 25 only) per street lighting fixture per day. If the Contractor does not rectify the same within seven (7) days, SMC may proceed with such rectification and deduct the cost of such work from the Contractor's payment.

16.5.3 The Contractor shall be liable to pay penalties for any loss of functional lamp hours on each switching point if such non-functional lamp hours exceed two per cent (2%), with the percentage determined at the end of each Financial Year in accordance with the following formula:

$$\% \text{ non-functional lamp hours for a switching point} = \frac{\text{non-functional lamp hours}}{\text{total onhours} \times \text{no of fixtures}}$$

16.5.4 For every slippage of one per cent (1%) in non-functional lamp hours beyond the acceptable limit of two per cent (2%), the Contractor shall pay SMC an amount equivalent to three per cent (3%) of the value of Guaranteed Energy Savings and O&M Fees for such switching point, in accordance with the following:

Penalty for non-compliance of minimum up-time = 3 x (% slippage)x(annual value of Guaranteed Energy Saving + Annual O&M Fees)

In the above formula, the annual value of Guaranteed Energy Savings and the Annual O&M Fees are for each respective switching point.

16.6 Clean Development Mechanism

16.6.1 The Contractor is eligible to claim clean development mechanism benefits arising out of the Project. SMC shall provide all reasonable assistance to the Contractor in registering the Project as a clean development mechanism activity. Eighty per cent (80%) of any clean development mechanism benefits arising out of the Project shall be in favour of the Contractor while the last twenty per cent (10%) shall be received by SMC.

16.7 Set Off

16.7.1 SMC shall be entitled to set off any undisputed amounts payable or liabilities under or in relation to this Contract against the Energy Savings Fee to be paid by SMC to the Contractor in accordance with Article 16.1. If the amounts to be set off are larger than the relevant Energy Savings Fee to be paid by SMC to the Contractor, then the balance shall be recovered from future Energy Savings Fees to be paid by SMC.

17 PAYMENT SECURITY

17.1 Trust and Retention Account

17.1.1 Within three (3) months of execution of Trust and Retention Account Agreement, SMC shall deposit an amount equal to what it used to pay for three (3) months of electricity bills before the commencement of the Project plus O&M Fee of seventy-five Indian Rupees (Rs. 75 only) for each street lighting fixture in the Project Area. Each month thereafter and until the end of the Term, SMC shall deposit an amount equal to what it used to pay for one (1) month of electricity bills before the commencement of the Project plus one (1) month of O&M Fee as per the year-wise amount mentioned in the table in Article 16.2.2 for each street lighting fixture in the Project Area. The money shall be deposited in an escrow account, called the trust and retention account, in a reputable bank acceptable to the Contractor for the benefit of the Contractor. The bank shall undertake to use the money deposited in the escrow account to pay seventy-five per cent (75%) of the Energy Savings Fee and the O&M Fee to the Contractor upon submission by the Contractor of an invoice. The last twenty-five per cent (25%) shall be paid by the bank upon submission by the Contractor of a written approval of the invoice by SMC.

17.2 Letter of Credit

17.2.1 The SMC shall also deliver to the Contractor a Letter Of Credit (SLOC) from its Bankers. This SLOC shall secure the proper and timely performance by SMC of its payment obligations under this Contract.

18 PERFORMANCE GUARANTEE

18.1 Performance Guarantee

- 18.1.1 The Contractor shall deliver to SMC a duly executed bank guarantee in the form set out in SCHEDULE V issued by a reputable bank or financial institution acceptable to SMC, of an amount of Rs. 2 Crore (Rupees Two Crore) ("**Performance Guarantee**"). The Performance Guarantee shall be returned to the Contractor immediately after the expiry of the Term.
- 18.1.2 The Performance Guarantee shall secure the proper and timely performance of the Contractor's obligations as from the Commencement Date until the end of the Term, including the payment of Delay Liquidated Damages pursuant to Article 8

18.2 Notice

- 18.2.1 SMC shall, prior to making any demand under the Performance Guarantee, send a written notice to the Contractor mentioning the existence of a Contractor Event of Default and providing a cure period of fifteen (15) days. If the Contractor does not remedy its Contractor Event of Default within these fifteen (15) days, then SMC shall be entitled to call part or full, as relevant, of the Performance Guarantee.

18.3 Replacement

- 18.3.1 Where the Performance Guarantee is subject, pursuant to its terms, to a fixed expiry date, the Contractor shall, not less than fifteen (15) days prior to such expiry date, amend or replace the Performance Guarantee, as the case may be, with a duly executed amended or replacement guarantee. Any replacement Performance Guarantee must be issued for at least one (1) year by a reputable bank or financial institution of equivalent standing to the original issuer as approved by SMC, and be on identical terms. If the Contractor fails to provide an amended or replacement Performance Guarantee as required, SMC may issue a demand under the Performance Guarantee for the full amount available and shall be entitled to hold such amount as security for the performance of the Contractor's obligations under this Contract until a replacement Performance Guarantee is provided (whereupon such amounts shall be returned to the Contractor without any obligation to account for interest).

18.4 Fees, Taxes, Costs and Expenses

- 18.4.1 All fees, taxes, costs and expenses associated with procuring, preparing, completing and stamping (if applicable) the Performance Guarantee shall be the responsibility of and paid by the Contractor.

19 THEFT OF ENERGY

19.1.1 If either SMC or the Contractor is aware of theft of energy, it shall inform the other Party without delay. The magnitude and nature of the energy theft shall be assessed by both Parties. SMC shall be responsible for taking all the corrective measures required, provided that the Contractor reported such theft to SMC. SMC shall report back the status of mitigation of such theft to the Contractor within two (2) days of the Contractor's report. In cases where SMC is not able to take suitable actions to mitigate such theft, it shall make due adjustments for arriving at the Energy Savings for the respective switching point(s) and for the payment of the Energy Savings Fee to the Contractor so as to not penalise the Contractor for such theft.

20 FORCE MAJEURE

20.1.1 A "Force Majeure Event" shall mean any event or combination of events occurring inside or directly involving the city of Solapur that is beyond the reasonable control of SMC or the Contractor, as the case may be, occurring or subsisting after the Effective Date and which (or the effects of which) is unavoidable, notwithstanding the reasonable care of the Party affected, including, in the case of the Contractor, any Subcontractor, and, in the case of the Contractor only, such event(s) could not have been foreseen by an experienced contractor, or to the extent that the event(s) could have been foreseen by an experienced contractor, such contractor could not have reasonably mitigated against the effects of such events. Such Force Majeure Events include, but are not limited to:

- a) War (whether declared or undeclared), invasion, armed conflict or act of foreign enemy;
- b) Rebellion, sabotage, act of terrorism, revolution, insurrection, civil war or epidemic (excluding vandalism);
- c) Strikes, lock-outs, works to rule or go-slows that are widespread or nationwide, or that are of a political nature, unless they are solely related to SMC, the Contractor or any Subcontractor; and
- d) Lightning, earthquake, flood, hurricane, typhoon, tornado or volcanic activity.
- e) Such events cannot be caused or contributed to by an act or omission of the Party relying on it or persons for whom that Party is responsible.

20.1.2 If either Party is prevented, hindered or delayed from performing any of its obligations under this Contract by a Force Majeure Event, then it shall notify the other Party in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event, and send a copy of such notice to the Independent Energy Auditor.

20.1.3 The Party who has given such notice shall be excused from the performance or punctual performance of its obligations under this Contract for so long as the relevant Force Majeure Event continues and to the extent that such Party's performance is prevented, hindered or delayed.

20.1.4 The Party or Parties affected by the Force Majeure Event shall use reasonable efforts to mitigate the effects thereof upon its/their performance of this Contract and to fulfil its/their obligations under this Contract, but without prejudice to either Party's right to terminate this Contract.

20.1.5 No delay or non-performance by either Party caused by the occurrence of any Force Majeure Event shall:

- a) constitute a breach under this Contract;
- b) extend the Term; or
- c) give rise to any claim for damages or additional cost or expenses occasioned thereby.

- 20.1.6 If the performance of the Services is substantially prevented, hindered or delayed for more than one hundred and twenty (120) consecutive days on account of one or more Force Majeure Events during the Term, either Party may terminate this Contract by giving a notice to the other. If this Contract is terminated pursuant to this Article, SMC shall pay to the Contractor the part of the Energy Savings Fee payable for the Energy Savings performed prior to the Termination Date and the part of the O&M Fee payable for the operation and maintenance services performed prior to the Termination Date. The Contractor shall not be entitled to any further compensation.
- 20.1.7 Notwithstanding this Article, Force Majeure Events shall not apply to any SMC's obligation to make payments to the Contractor hereunder.

21 MATERIAL ADVERSE GOVERNMENT ACTION

21.1.1 A "Material Adverse Government Action" ("MAGA") shall mean any act or omission, after the Effective Date, by SMC or any other public entity, which has a Material Adverse Effect.

21.1.2 A MAGA shall include the following circumstances:

- a) Any imposition or change of Law that is directly targeted at the Project and/or projects similar to the Project and/or that is discriminatory against the Contractor;
- b) Any imposition or change of Law of an environmental or technical nature which would have the effect of making the Laws more stringent than the Laws in force at the Effective Date;
- c) Expropriation or compulsory acquisition, or seizure of the Existing Lighting Facilities by a public entity with respect to substantially the same subject matter;
- d) Any material breach by MSEDCL of its obligations, including, but not limited to, failure to supply electricity within the whole or part of the Project; and
- e) Any regulator's decision having the effect of decreasing the Contractor's remuneration under this Contract.

21.1.3 Within thirty (30) days of notice to SMC of a Material Adverse Government Action, SMC shall procure the remedy of the MAGA in question. Should SMC fail to procure a remedy prior to the expiry of the thirty (30) day period, the Parties shall discuss the issue in an attempt to reach a mutually satisfactory solution that restores the Contractor to the position it would have been in had such MAGA not occurred (including compensation for costs and loss of profits). If the Parties fail to reach an agreement on a satisfactory solution, the Contractor shall have the right to terminate this Contract.

21.1.4 The Contractor shall not be excused from performing its obligations under this Contract upon the occurrence of a MAGA, unless the Material Adverse Effect causes the Contractor to fail to perform its obligations.

22 TAXES AND DUTIES

22.1.1 The Contractor is solely responsible and liable for the payment of all taxes in relation the Services. The Contractor shall defend, indemnify and hold harmless SMC from and against any liability for payment of such taxes.

22.1.2 The provisions of this Article shall survive the termination or expiry of this Contract.

23 CONFIDENTIALITY

23.1.1 The Parties shall treat as confidential the existence and contents of this Contract (including its Schedules), all the information and documents obtained in relation to this Contract, the Services, as well as all other aspects of the Project contemplated under this Contract. The duration of the confidentiality obligation shall last for two (2) years following the end of the Term.

23.1.2 Article 23.1.1 shall not apply in the following cases:

- a) Information already published or otherwise publicly available;
- b) Information already obtained by one Party in a manner which does not breach a confidentiality obligation;
- c) Information obtained from a third party in a manner which does not breach a confidentiality obligation;
- d) Information required to be disclosed in accordance with Indian Laws; and
- e) Information disclosed for the purpose of the performance by either Party of its obligations under this Contract.

24 NOTICE

24.1 Notice

24.1.1 Any notice under this Contract shall be in writing and in English, and shall be delivered in person or sent by registered post, fax or email to the following addresses:

24.1.2 For SMC: [?]

24.1.3 For ESCO: [?]

24.2 Change of Information

24.2.1 Should either Party need to change its contact information, it shall inform the other Party in writing fifteen (15) days in advance. The change takes effect immediately upon receipt of such notice by the other Party.

25 INSURANCE

The Contractor shall at all times, as may be applicable, obtain, maintain and renew those insurance covers required in relation to people, equipment, systems as well as third party damages in accordance with good industry practice. In particular, the Contractor shall maintain an insurance coverage against the risk of damage by fire or otherwise of Contractor-owned and installed equipment and systems until the title to the equipment and systems passes on to SMC upon expiry of the Term.

26 STEP-IN RIGHTS

- 26.1.1 If the Lenders believe that they need to take action in connection with the Services because the Contractor is in breach of its obligations as further detailed in the direct agreement to be entered into between the Lenders, the Contractor and SMC as attached in SCHEDULE VII, then the Lenders shall be entitled to take action in accordance with Article 26.1.2 below.
- 26.1.2 If the Lenders wish to take action under Article 26.1.1, they shall notify in writing SMC and the Contractor of the following:
- a. The action they wish to take;
 - b. The reason for such action;
 - c. The date they wish to commence such action;
 - d. The time period which they believe will be necessary for such action; and
 - e. To the extent practicable, the effect on the Contractor and its obligation to provide the Services during the period such action is being taken.
- 26.1.3 Following service of such notice, the Lenders shall take such action themselves or through a third party (the "**Required Action**") if the Contractor does not remedy or rectify its breach within the time period specified in the notice (to be determined reasonably having regard to the seriousness of the risk or damage).
- 26.1.4 The Contractor shall bear all the costs linked to the Required Action taken by the Lenders. The Required Action shall be taken without prejudice to any other rights or remedies available to the Lenders or SMC under this Contract or the Laws.
- 26.1.5 In addition to the step-in rights described hereabove, the Contractor may grant a pledge in favour of the Lenders over all of the equipment, material and systems installed and owned by the Contractor in order to guarantee and secure the performance by the Contractor of all its obligations under this Contract. The pledge is granted as a security only and shall not modify any of the Contractor's obligations with respect to its equipment, material and systems.

27 TERMINATION

27.1 Termination Events

This Contract shall terminate:

- a) due to a Force Majeure Event in accordance with Article 20;
- b) due to a SMC Event of Default in accordance with Article 27.2;
- c) due to a Contractor Event of Default in accordance with Article 27.3; or
- d) due to the non-occurrence of the Commencement Date in accordance with Article 2.

27.2 SMC Event of Default

27.2.1 The following events, provided that they are not caused by a Contractor Event of Default or a Force Majeure Event and are not cured within sixty (60) days following the issuance of a notice from the other Party, shall constitute a "**SMC Event of Default**" and the Contractor shall be entitled to terminate this Contract:

- a) SMC made any representation or warranty that was incorrect when made, causing a Material Adverse Effect on the Contractor's ability to perform its obligations in accordance with this Contract;
- b) SMC is in material breach of its obligations under this Contract, including but not limited to payment default (in accordance with Article 27.2.2) or access default (in accordance with Article 4.1.2); and
- c) A Material Adverse Government Action occurs and is not cured or remedied in accordance with Article 21.1.3.

27.2.2 There is a payment default if SMC fails to pay the Contractor any undisputed amount due and payable under this Contract within sixty (60) days of the date of issuance of the invoice by the Contractor.

27.3 Contractor Event of Default

27.3.1 The following events, provided that they are not caused by a SMC Event of Default or a Force Majeure Event and are not cured within sixty (60) days following the issuance of a notice from the other Party, shall constitute a "**Contractor Event of Default**" and SMC shall be entitled to terminate this Contract:

- a) The Contractor made any representation or warranty that was incorrect when made;
- b) Liquidation or insolvency of the Contractor;
- c) Transferring the Services in violation of this Contract;
- d) The Contractor has been convicted of a Corrupt Act;
- e) The Contractor is in material breach of any of its obligations under this Contract;
- f) SMC determines that the Contractor has, directly or indirectly, or through an agent, engaged in corrupt practices, fraudulent practices, coercive practices, undesirable practices or restrictive practices during the bidding process for this Project;

- g) The Contractor's failure to pay the Delay Liquidated Damages within the time periods specified hereunder, or the failure by the Contractor to finalise the activities in Phases 1 and 3 within the maximum delay of eight (8) weeks after the Timeline, as specified in Article 8; and
- h) The Contractor's failure to issue monthly reports in accordance with Article 12.

27.3.2 Notwithstanding the provisions of Article 27.3.1, failure by the Contractor to issue monthly reports in accordance with Article 12 shall automatically constitute a Contractor Event of Default without having to wait for the end of the sixty (60) days cure period.

27.4 Termination Procedure

27.4.1 Termination of this Contract by SMC : SMC may terminate this Contract by giving a termination notice to the Contractor if, subject to Article 18 and without prejudice to the Lenders' rights, a Contractor Event of Default has occurred and continued for more than sixty (60) days after SMC notified the Contractor of such Contractor Event of Default.

27.4.2 Termination of this Contract by the Contractor: The Contractor may terminate this Contract by giving a termination notice to SMC if a SMC Event of Default has occurred and continued for more than sixty (60) days after SMC has received a notice from the Contractor mentioning the SMC Event of Default and requesting SMC to remedy such SMC Event of Default.

27.5 Termination Payments

27.5.1 In case of termination of the Contract in accordance with Article 2.2.3, SMC shall be entitled to call the earnest money deposit or the Performance Guarantee, as the case may be, delivered by the Contractor. In case of termination of the Contract in accordance with Article 2.2.2, neither Party shall be liable for any payments to the other Party and SMC shall return the earnest money deposit or the Performance Guarantee, as the case may be, promptly to the Contractor.

27.5.2 In case of termination arising on account of a Force Majeure Event as specified in Article 20, neither Party shall be liable for any payments to the other Party.

27.5.3 In case the Contractor does not finalise the activities of Phase 1 or Phase 3 as per the Timeline stipulated in Article 6, and subject to the provisions of Article 8, SMC shall have the right to terminate the Contract. In such case, SMC would call the whole amount of the Performance Guarantee submitted by the Contractor. SMC shall pay the Contractor the book value for all the equipment constructed or systems installed up to the Termination Date, as duly certified by a statutory auditor and approved by SMC.

27.5.4 In case of termination of the Contract at any time during Phase 4 due to either a SMC Event of Default or a Contractor Event of Default, SMC shall pay the Contractor the book value for all the equipment constructed or systems installed up to the Termination Date, as duly certified by a statutory auditor and approved by SMC. SMC shall have the right to call the whole amount of

the Performance Guarantee submitted by the Contractor if the termination of the Contract is due to a Contractor Event of Default.

27.5.5 All rights, titles and interests in and to all improvements and equipment constructed or systems installed shall vest in SMC after payments made to the Contractor and free and clear of all and any liens and encumbrances created or caused by the Contractor. The Contractor shall surrender possession of the said equipments and systems to SMC in good repair and condition, reasonable wear and tear accepted.

28 SETTLEMENT OF DISPUTES

28.1 Consultation

28.1.1 Both Parties agree that in the event any dispute, controversy or claim arising between the Parties out of, under or in connection with this Contract, or in the interpretation of any of its provisions, including any question regarding its existence, validity or termination, the Parties shall meet promptly on the request of either Party in an effort to resolve such dispute, controversy or claim through consultation. If a settlement is not reached pursuant to this Article within thirty (30) days of the said request, then the Parties shall refer their dispute to the Independent Energy Auditor in accordance with Article 28.2.

28.2 Independent Energy Auditor

28.2.1 Failing an amicable settlement pursuant to Article 28.1, any dispute, controversy or claim shall be referred by either Party to the Independent Energy Auditor. The Independent Energy Auditor, on the request made by a Party, shall use its best efforts to resolve the issue and arrive at a settlement mutually agreeable to both Parties. Decisions taken by the Independent Energy Auditor shall amount to recommendations to both Parties only and shall not constitute binding decisions therein.

28.3 Litigation

28.3.1 Any dispute, controversy or claim that has not been resolved between the Parties through an amicable settlement or based upon the decision taken by the Independent Energy Auditor in accordance with Articles 28.1 and 28.2 may then be submitted by either Party to the competent courts in Solapur.

29 TRANSFER

- 29.1.1 Six (6) months before the end of the Term, the Parties shall discuss whether this Contract shall be renewed or not. If the Parties decide not to renew the Contract, then all the Existing Lighting Facilities as may have been upgraded and maintained by the Contractor shall be transferred to SMC free of charge on the day immediately following the end of the Term.
- 29.1.2 The materials, equipment and systems installed by the Contractor in relation to the Existing Lighting Facilities and over which the Contractor has the title shall be transferred to SMC free and clear of all liens, encumbrances, mortgages, security interests and other claims of any kind.
- 29.1.3 The Contractor shall also transfer to SMC all of its operation manuals for the materials, equipment and systems installed by the Contractor.
- 29.1.4 In the event of early termination, the transfer shall take place on the next day immediately following the Termination Date.

30 GOVERNING LAW AND LANGUAGE

30.1 Governing Law

30.1.1 This Contract is governed by and construed in accordance with the Laws of India and the State of Maharashtra.

30.2 Language

30.2.1 This Contract is written in the English language. All communications and information provided should be in writing and in the English language only.

31 MISCELLANEOUS

31.1 Assignment

Neither SMC nor the Contractor shall without the express written consent of the other Party assign or charge to any third party this Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder.

31.2 Entire Agreement

This Contract constitutes the entire agreement between the Parties, and no alterations, changes or additions thereto shall be made, except in writing and approved by both Parties. This Contract supersedes all communication, negotiations and agreements (whether written or oral) between the Parties made prior to the Effective Date with respect to the Services.

31.3 Amendments

Any amendment, addition or variation to this Contract shall be valid and binding only if in writing and only if signed by the authorised representatives of both Parties.

31.4 Severability

Should any provisions in this Contract be invalid, illegal or unenforceable or be held invalid, illegal or unenforceable by any competent tribunal or court, the remaining provisions of this Contract shall remain valid and enforceable.

31.5 No Partnership

This Contract does not constitute a joint operation or partnership in the legal sense between the Parties. The Contractor is a service provider to SMC.

31.6 Schedules

This Contract includes the following Schedules, each of which is incorporated herein.

SCHEDULE I Scope of Services

SCHEDULE II Technical Specifications of the Project

SCHEDULE III Monitoring and Verification Plan

SCHEDULE IV Scope of Work of the Independent Energy Auditor

SCHEDULE V Performance Guarantee

SCHEDULE VI Trust and Retention Account Agreement

SCHEDULE VII Form of Direct Agreement

SCHEDULE VIII Letter of Comfort

IN WITNESS WHEREOF, the Parties, intending to be legally bound, have caused this Contract to be executed in two (2) copies by their duly authorised representatives on [].

SIGNED, SEALED AND DELIVERED For and on behalf of	SIGNED, SEALED AND DELIVERED For and on behalf of
--	--

Solapur Municipal Corporation by: <i>[Name]</i> <i>[Designation]</i>	<i>[Winning Bidder]</i> by: <i>[Name]</i> <i>[Designation]</i>
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In the presence of:

- 1.
- 2.

SCHEDULE I SCOPE OF SERVICES

SCOPE OF WORK OF 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 provide the services as specified in this section.

SMC seeks to appoint a Concessionaire for a **contract period of 11 years**¹, for undertaking following tasks for upgrading the street lighting system under jurisdiction:

- Task – 1: undertake complete asset mapping and energy baseline establishment within three months;
- Task – 2: Replacement of existing luminaires (within municipal boundary of Solapur Municipal Corporation) with LED luminaires (including LED lamp, Driver and Luminaire) and installation of Centralized Control and Monitoring System (CCMS), within 9 (nine) months in parallel to Task – 1.
- Task – 3 Infrastructure Development Works, in parallel with Task – 2.
- Task – 4: Undertake comprehensive operation and maintenance of street lighting network and infrastructure. As per the Term defined in the Concession Agreement.

A. Task -1 - undertake complete asset mapping and energy Baseline establishment

1. **Complete Asset Survey and Actual mapping on GIS:** The Successful Bidder shall, upon selection, immediately undertake complete survey of the Street Lighting infrastructure under the Project Area along with existing road and proposed new roads along with following additional information (but not limited to);
 - a. Existing Light point spec
 - b. GIS location in X-Y co ordinate
 - c. Pole type
 - d. Pole height
 - e. Pole bracket
 - f. Feeder detail
 - g. Metering detail
 - h. Cable arrangement
 - i. Road width
 - j. Type of road classification
 - k. Numbering and labelling of pole and feeder.
2. **GIS Database:** Surveyed street light and switch data in point format shall be integrated using GIS software, Pole to pole cable connection has to be generated using GIS techniques and these pole to pole distance shall be measured using cables and it is used for calculation part. Existing Street light, Switches and cables shall be marked in GIS using these existing network. Proposed poles, lights, cables and switches need to be marked. Switches shall be placed in such location that looping arrangement shall be generated and the lineman can easily monitor from one location, if system further upgraded then, by using SCADA system switches operating logic shall be made using these data.

¹ Contract Period would be 11 years including installation period of 9 months (extendable by 3 months with defined penalty clause) and remaining for O&M and energy savings payment. End date of contract period would be exactly 11 years irrespective of installation period whether it is less than or more than 9 months. For Example: Contract signed date is 01/July 2017, then end date of contract date would be 30/June/2028. The Concessionaire will not be eligible for any payment, for the period, after the contract end date.

3. **Classification of Roads:** Along with the survey of the street lighting infrastructure, the Concessionaire is also required to undertake classification of the roads in Solapur city as per the classification mentioned in the following in conformity to the NLC. The classification shall be as per the categories mentioned in the following table for the desired lux level requirements and uniformity. The wattage of the LED luminaire shall be selected in order to achieve the requirements mentioned in the following table;

Lighting Classification for different road types – IS Classification

Sr No	Classification of Lighting Installation	Type of Road	Average Illuminance on Road Surface	Uniformity Ratio (E_{min}/E_{avg})	Transverse Uniformity (E_{min}/E_{max})
1	Group A1	Important Traffic routes carrying fast traffic	30	0.4	0.33
2	Group A2	Other than main roads carrying mixed traffic like main city streets, arterial roads, and throughway roads.	15	0.4	0.33
3	Group B1	Secondary roads with considerable traffic like principal local traffic routes and shopping.	8	0.3	0.2
4	Group B2	Secondary roads with light traffic.	4	0.3	0.2
5	Note: Transverse Uniformity: Ratio of E_{min}/E_{max} across the road.				

Lighting classification for different type of junctions

Sr No	Junction Type	E_{avg} (Lux)	(E_{min}/E_{avg})
1	Key Junctions and complex flyover interchanges	50	0.4
2	Main city junctions without any interchanges	20	0.4
3	Other smaller junctions	15	0.4
4	Pedestrian crossings	50*	-
	Bus Bays	5	-
	*Note: This is vertical Illuminance on pedestrians at 1.2 meter.		

4. **New Pole Locations:** The Concessionaire while doing the GPS based GIS mapping will have to undertake detailed mapping of the MSEDCL poles with pole to pole distance clearly measured. If in case where the pole to pole distance is more than 50 meters, the Concessionaire has to install a new pole in between such poles. The Lux and uniformity for such road shall be through Lumen Maintained Method. The Concessionaire shall provide 20% extra light over and above base level. Wherever the pole to pole placement distance is proper, Concessionaire shall provide the illumination and uniformity as per the NLC standard confirming to the respective road category.
5. **Feeder wise Energy Baseline:** The successful Bidder shall establish a feeder wise energy baseline by installing smart energy meters on each feeder. Post installation of the meter, the Bidder shall first measure the energy baseline for a block of 25 feeders which will become a baseline for that block. Post which, Bidder will retrofit those fixtures with energy efficient fixtures and infrastructure required. The energy consumption post the retrofit shall be captured and total savings in energy consumption shall be established for that particular block. And the process shall be repeated for remaining blocks. Few sample feeder wise retrofit of LED to establish actual energy baseline to showcase the minimum Guaranteed Energy Savings as quoted in the

Bid for all classification of roads in line with National Lighting Code (NLC) and baseline adjustment of lumen up gradation.

B. Task – 2 Replacement of existing luminaires with LED luminaires (including LED, Driver and Luminaire) and installation of CCMS

1. **Implementation timeline:** The Successful Bidder has to supply, install, test and commission LED luminaires and three-phase CCMS panels within 9 (nine) months from the date of award of work failing which a penalty of INR 1,00,000/ week will be applicable for a maximum period of 13 weeks after which M&V of energy savings will be stopped resulting in no payments towards energy saving.
2. **Wattages of LEDs to be installed:** The intent of SMC 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 during replacement of existing luminaires:

Sr. No.	Types of Luminaries	wattage of each lamp	Number of lamps	ballast losses (Watt)	total losses (Watt)	LED wattage
1	Florescent tube	36	10851	10	46	18
2	Sodium Vapor	70	6070	15	85	36
3	Sodium Vapor	150	13208	20	170	60
4	Sodium Vapor	250	2512	25	275	100
5	Metal Halide	250	1227	25	275	90
6	Metal Halide	400	870	40	440	160
7	T-5 (24*4)	96	1609	0	96	36
8	Other (CFLU type)	23/36/48	542	0	36	24
9	Under Nagrothan Yojna	150W/250W	1650	25	170	60

Note:

- 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 concession.
 - Out of the total luminaires mentioned in the table above, the bidder shall have to install 3% (three percent) luminaires having individual luminaire level monitoring and control capability. The location of these luminaires would be suggested by SMC during project implementation. For remaining luminaires, bidder has the option to install either individual control feeder level control.
3. **Guaranteed savings:** The minimum guaranteed energy savings, with the installation of LED street lights, should be around 60%.
 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 11 hours per day. The bidder will not be allowed to use any dimming option for additional energy saving, unless explicitly advised by SMC through written communication.
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.
 6. **Baseline:** The Assessed Baseline energy consumption is **20.58 million kWh per annum** is for existing condition of street lighting system in Solapur. However, actual baseline during the installation period (i.e. from the start of project to complete installation) may vary in terms of number of light points as well as electricity consumption. The Concessionaire may be asked by SMC 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.
 7. **Energy Tariff:** As per the tariff order passed by the Maharashtra Electricity Regulatory Commission (“MERC”) the applicable tariff for Street Lighting in Municipal Corporation Area is Rs. 6.60 / Kwh effective from April 1st 2017.
 8. **Energy Tariff Escalation:** During the first year of concession period for energy saving payment, tariff rate would be considered Rs. 6.60/kWh. For the subsequent years the tariff for energy saving payments to Concessionaire shall be as per the tariff declared by the MERC time to time.
 9. The Successful Bidder has to adhere to the technical specifications as specified in Technical Specifications section for different type of street lighting equipment.
 10. 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.
 11. 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 SMC. Poles outside such jurisdiction are not supposed to be taken up.
 12. If required, then the Concessionaire may be asked to undertake marking of poles (pole numbering) for each LED luminaire installed in service area of SMC and switching point details. However, this should be done without damaging the infrastructure of SMC/DISCOM.
 13. 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.
 14. **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 on the electricity distribution utility as well as the corporation owned poles with dedicated cable for street lighting only. The Cables/ Wires should be of 10 mm², PVC insulated, 4-core Aluminum wire. **No extra charge** will be payable to the concessionaire for this work.
 15. **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.

16. 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.
17. Surge protection: The Concessionaire must provide appropriate surge protection arrangement, either centralized at switching point or at each luminaire or a combination of both, as may be decided by the Successful Bidder, 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.
18. 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 SMC, along with circumstantial evidence preferably within 24 hours of such occurrence, for the purpose of damage claim. The responsibility for submission of supporting documentation rests with the Concessionaire.
19. **Earthing:** Successful Bidder shall 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 SMC for mutual agreement. No claim for failure of Luminaires will be entertained on account of earthing issues.
20. 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 SMC/ DISCOM. In such instances, the Concessionaire will provide the asset deficiency report and related investment costs for replacement within first two month of appointment. The replacement and maintenance of such infrastructure will be done by the Concessionaire after getting approval of SMC/ DISCOM. The Concessionaire will be paid, the amount established as per SCHEDULE VIII for replacing/ installing the poles, power cables, JB's/MCBs on poles. In addition to this, SMC may ask for painting of some poles across the city. After approval on the number of poles and locations for painting from SMC, the Concessionaire can start the painting work and payment will be made, as per SCHEDULE VIII. If rate is not available in SOR, then SMC will discover the market price through minimum three bids. In such situation the Concessionaire will be paid on discovered market price.
21. 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.
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.

23. The Successful Bidder has to intimate SMC about any cases of power theft or unauthorized connection of load during festivals from the street lighting network on immediate basis. SMC will be responsible for taking all the corrective measures required and not penalize the Successful Bidder for such theft.
24. The Successful Bidder shall ensure proper recording of the dismantled conventional Luminaires and report that to SMC on weekly basis.
25. The Successful Bidder will buy-back the dismantled lamps from SMC as per the rate quoted in price bid. The buy-back price will be same irrespective of condition of dismantled lamps.
26. With regard to asset ownership, following need to be adhered to:
 - SMC 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 (if any) 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 SMC, 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 SMC with minimum 98% of them in working condition.
27. SMC 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 a third party appointed by SMC, 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.
28. **Handover:** The Authority shall take handover in a block of 25 (twenty five) feeders for Shared Energy Saving based on actual energy saving which should be equal to or more than committed by the Successful Bidder in the offer.

C. Task – 3 Infrastructure Development Works

1. The Authority shall ask the Successful Bidder for installation of new street lighting infrastructure in either uncovered areas of the city or where the street lighting infrastructure is in dilapidated condition. The Successful Bidder shall be paid for such work on actual basis. Exact numbers and location of these shall be intimated by the SMC during the term of Phase-2 as per the Concession Agreement. The rates of the items to be executed by the Successful Bidder shall be determined as per SCHEDULE VIII.
2. **Modification of Energy Baseline:** Following approach shall be used for modifying the Energy Baseline in case of new infrastructure is being added to the Street Lighting Infrastructure;

- a. Road Extension:** On roads where the street lighting infrastructure is provided till one point and beyond that point new infrastructure is to be laid, the energy baseline would have been established for that particular feeder. The baseline consumption and the consumption post installation of new poles shall be adjusted accordingly and in no case the new infrastructure shall be less than the savings from what has been quoted by the Successful Bidder. The Successful Bidder shall install the LED lights and the Smart Panel for the same for which no extra costs shall be paid to him. However, for the other infrastructure, such as foundation, pole, cable the unit rates shall be paid as per the process mentioned in SCHEDULE VIII. All the new light points that are being installed by the Successful Bidder will then become the part of scope for operation and maintenance by the Successful Bidder.
- b. New Roads:** SMC shall define the category of the new road and the illumination requirements of the new road that is being constructed by the SMC. The successful Bidder shall then be required prepare lighting design in DIALux or any other approved software and submit the same to SMC for approval. The Successful Bidder shall submit the report with both the technologies i.e. Sodium and LED keeping the output parameter such as lux uniformity same as per the NLC. SMC based on the report submitted by the Successful Bidder shall establish the energy saving potential and that shall be considered as the baseline for the new road feeder. For the new road LED lights, brackets and feeder supply and installed by Successful Bidder without any extra charges. Balance all material like pole, cables, foundation etc. unit rates shall be paid determined as per the process mentioned SCHEDULE VIII. All such infrastructure that is being added in to the City's street lighting infrastructure shall form a part of the scope for operation and maintenance for the Successful Bidder.

D. Task – 4 Undertake comprehensive operation and maintenance of street lighting network

During the Concession Period, following operation and maintenance activities will be required to be carried out by the Successful Bidder:

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 Authority and the Successful Bidder. The Successful Bidder has no obligation to employ directly or indirectly any municipal employees.
2. The Successful Bidder has to store inventory (minimum 1% of total light points in the city) of LED luminaires for maintenance requirements.
3. The Concessionaire will be provided with a small place at the head office of the SMC with basic infrastructure where the Concessionaire will make available a person with amenities like computer, printer, phone, complaint register, etc. during working shift timings. These complaint handling centers will be connected to SMC's existing Complaint Management System and such centers should become fully operational within 30 days of allocation of such space by SMC.
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.

5. In case of theft of the material or electricity, the Concessionaire will inform the SMC and SMC 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 SMC 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.
6. The Successful Bidder will manage the operation of all the control panels installed by him and also provide maintenance, web-based portal and communication services etc. of these control panels during the contract period.
7. All complaints lodged in the system have to be resolved within 24 hours of lodging of complaint for the critical 3% of the area and 48 hours for the remaining area. Critical area will be defined by SMC during the project implementation phase. For example, if the complaint is lodged on 16th May at 10:00 PM then the complaint has to be resolved on or before 17th May 10:00 PM for the Critical Area and 18th May, 10:00 PM for complaint registered from remaining area. In certain cases, Concessionaire has to resolve the complaints immediately as per the instruction of EIC.
8. The Successful Bidder shall ensure the availability of sufficient ladder vehicle, Hydraulic Vehicle (suitable to reach up to 10m height) and other relevant vehicle and equipment for O&M. The vehicle used for O&M should have valid registration documents from the respective authorities.
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.
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.
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 Concession Period.
12. The Concessionaire has to carryout 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 SMC.
Due to overhead mix network, snapping of conductors, phase-to-phase phenomenon is	The Concessionaire, under such a condition, will register a complaint with the DISCOM and also

very frequent and leading to damages of street light luminary and its components	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.

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 24/48 hours of lodging of complaint to be read in conjunction to this Appendix IV.	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 SMC staff is engaged for resolving phase issue
Hours 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
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.
Resolution of Line Fault / MCB Tripping	Concessionaire has to resolve any line fault / MCB tripping issue within Two hours.	Rs. 20,000/- per hour in addition to the response time of two hours.

14. The Concessionaire will organize half-day training program at SMC office wherein the Concessionaire will train the employees of SMC 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.

15. Successful Bidder should address the queries or issues raised by employees of SMC on O&M practices from time to time
16. The Successful Bidder 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 SMC 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 SMC and advice names of the new officers assigned for the role.
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. 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.
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.
19. 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 of at least six months by a competent person possessing valid certificate w.r.t SAFETY issues.
20. 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 of at least six months 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.
21. **Third Party Audit:** The Authority shall appoint a Third Party Audit (TPA) agency at a suitable time of the project implementation or operations. The TPA may suggest measures for improvement of the efficiency of the project which shall be final and binding on the Concessionaire to execute.
22. **Festival Lighting:** The Authority shall during various festivals in Solapur city round the year, may tap power supply from the street lighting infrastructure. The Concessionaire shall be given a set off for any additional energy consumption for such events.

E. Assessment of lighting load

It is acknowledged that Maharashtra State Electricity Distribution Company Limited (the "MSEDCL") charges SMC 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, SMC will have to get reduce the sanctioned load of each of the street lighting feeder proportionately. SMC will take-up this with MEDCL 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. SMC 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 block of 25 switch points², must prepare and submit a consolidated report to SMC in the format as provided below:

Zone (1/2/3/4)	GIS ID	Switch Point Description	Number of Light points category wise	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 MSEDCL.

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

² Completed switch points: Means the switch points for which all the connected lights have been replaced and CCMS panels installed.

F. Assessment of energy savings through Monitoring and Verification (the 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 saving in energy consumption. 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 in a block of 25 feeder is (the "Block) completed. The Concessionaire will be eligible to raise the invoice for the energy savings realized after complete installation in two Blocks. For illustration, if total installation is completed in two Blocks on 1st January 2018, than Concessionaire is eligible to raise invoice on 1st February 2018 for energy savings realized in the period from 2nd January 2018 to 31st January 2018. No payment will be made to the Concessionaire for the energy savings generated prior to 2nd January 2018.

For subsequent Blocks (i.e. 3rd and 4th Block), payment of energy saving would start only after total completion of each Block (i.e. on total completion of 3rd Block the invoice of energy savings for third Block could be raised by the Concessionaire and similarly on total completion of 4th Block). 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 particular zone). The payment for O&M will begin after date of issue of satisfactory Installation, Testing and Commissioning certificate of all LED Street lights.

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

SMC or the third party consultant hired by SMC 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.

G. 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 SOP document shall be formally signed off by SMC before completion of Final Acceptance Test. This SOP manual will be finalized by the Concessionaire within 2 months of operationalization, in consultation with the SMC and formally signed off by the SMC.

Note: The Concessionaire will ensure upkeep and update all documentation and manuals during the Concession Period. The ownership of all documents, supplied by the Concessionaire, will be with SMC. Documents shall be submitted in five copies each in printed (duly hard bound) and in editable version of softcopy formats.

H. 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, web interface and social media accounts;
 - The Concessionaire shall establish a two way communication mechanism. I.e. the complainant shall be intimated once the complaint registered by him/her is resolved. This two way communication mechanism shall be through all means by which the complaints are received. At the end an SMS communicating that the complaint has been resolved shall be sent to the complainant.
 - Following is also part of scope of work of Concessionaire: (a) Development of training material for SMC employees (b) training to be imparted to SMC (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 SMC (e) Helpdesk related infrastructure;

- Language Capabilities : Marathi, 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.

I. Capacity Building

The Concessionaire need to provide training and capacity building to SMC employees and other stakeholders as directed by SMC 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 SMC 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 SMC. 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 SMC 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 methodology that will capture necessary parameters on measuring effectiveness of the training sessions. This methodology will be discussed and finalized with SMC.
- 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 SMC for each training session.

J. Hand-over of the system at the end of contractual period

The Concessionaire will supply to the SMC 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 and services related to the project to enable SMC and its nominated agencies, or its replacing Concessionaire to carry out due diligence in order to transition the provision of the Project Services to SMC or its nominated agencies, or its replacing Concessionaire (as the case may be).

TECHNICAL SPECIFICATIONS OF LED AND CCMS

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,

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 with LED chip efficacy more than 160 lumens/watt and CRI > 80%	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 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 80	
4.	LED chip make – Nichia, Philip lumiled, Osram, CREE	
5.	LED chip efficacy shall be more than 135 Lumens/watt at Junction Temperature (Tj) 25° C	LED Technical Data Sheet
6.	Junction Temperature (Tj) should be <105°C	Manufacturer self-certify
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	Photo Biological Safety Report

8.	Colour temperature of the luminaire shall be in the range of nominal 4,000 K to 6000 K for replacement of 250 W HPSV at main roads and 4000 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.		LM 80 Report to be submitted and Manufacturer has to self-certify
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		LM-79 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		NABL accredited lab report
17.	LED Drive current	>=350 mA<1200 mA	LM-79 report
18.	LED driver efficiency	> 85%	LM-79 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 Aluminum 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 allowed).		NABL accredited lab report
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		NABL accredited lab report

	IP66 rated chamber. Zinc plated steel or equivalent screws can be applied inside sealed chambers.		
22.	The luminaire shall be built in such a way that it can withstand wind speed of 150 kmph. (Impact resistance \geq IK05)		NABL accredited lab report
23.	Frequency	50Hz +/- 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, IEC61000-4-5	NABL accredited lab report
26.	Working humidity	10% to 90% RH	
27.	Conformation standards of luminaire (Test reports 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	Aesthetically designed housing with corrosion resistant polyester powder coating	Self-Declaration
29.	Luminaire configuration / technical requirement	Side entry type. Shall consist of separate optical and control gear compartments. It should be easy 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 ANSI C 136.2-2014

NOTE:

1. All Tests have to be confirmed and appropriate TEST REPORT has to be submitted at the time of bid submission.
2. SMC is free to draw samples after start of supplies from the supplied quantity and subject the same to test in a NABL Accredited Lab. SMC will bear the cost of testing of such sample. In case the desired test results fail, the Concessionaire shall be asked to replace the entire stock and the cost of testing and any other ancillary charges to be paid in regard to testing shall be borne by the Concessionaire.

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 as per MSEDCL meter specifications. 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. • 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

		<ul style="list-style-type: none"> • 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 Application	<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 stamping from the streetlight controllers. • It should be able to communicate with any individual switching points or collectively amongst networked switching points for control and monitoring. • It should 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. • 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.

		<ul style="list-style-type: none"> • The system monitors all the following from the CCMS unit • Voltages each phase • Current each phase • PF each phase • Metering kWh cumulative • Metering kVAh • Further system is able to indicate various faults • Failure of contactor • Status of the incoming supply (power failure) • 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 (24 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 or any other format suggested by SMC. • 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 attempt/ 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.) to communicate with Integrated Command Control Center envisaged under Solapur Smart City Project.
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.

The Bidder will have to transfer the rights of usage of web-based application and necessary software used for CCMS operation on completion of Concession Period.

SCHEDULE II TECHNICAL SPECIFICATIONS OF THE PROJECT**STANDARDS APPLICABLE TO STREET LIGHTING SYSTEM OF SMC**

The National Lighting Code of the Bureau of Indian Standards (IS)- SP 72, 2010, IS 1944, IS 1977 and IEC Standards shall be complied for design and development of street lighting calculations, selection of lighting fixtures, lighting technologies, pole structure and erection, cable selection and sizing, insulation requirements, conductor specifications, etc.

Table 1: Standards applicable to SMC Street Lighting System

Sr.No	Standard	Description of Standard	Applicable to / Comment
1.	SP 72, 2010 (Part 3) (also known as National Lighting Code, 2010)	Electric light source and their accessories	
2.	SP 72, 2010 (Part 4)	Luminaires	
3.	SP 72, 2010 (Part 6)	Exterior illumination	
4.	SP 72, 2010 (Part 8)	Road lighting	
5.	SP 72, 2010 (Part 9)	Energy effective lighting systems	
6.	SP 72, 2010 (Part 10)	Installation aspects	
7.	SP 72, 2010 (Part 13)	Lighting maintenance	Maintenance of lighting installations
8.	IS 1944: 1970	Code of practice for lighting of public thoroughfares	Classification of road; Standard for road lighting
9.	Guiding principles of the Bureau of Energy Efficiency Lighting Code, 2006	Nine point methodology	Lux level measurement on the stretch of road, post implementation of the ECMs, as described in Article 16.4
10.	IS standards mentioned as necessary adjuncts under SP 72	All IS standards mentioned as necessary adjuncts under SP 72 for the various parts mentioned above	
11.	IS 8130-1984	Specifications for conductors for insulated cables	Aluminium conductors
12.	IS 5831	Specifications for PVC insulation and sheath of electric cables	Inner sheath of cables
13.	IEC 60947	IEC standards for low voltage switchgear and control gear	Circuit breakers and contactors
14.	IEC 6100-3-2	Limits for harmonics current emission	Limits for harmonics for low-voltage equipment with rated current under 16 A
15.	IS 13021 (Part 1 and Part 2)	Ballast shall satisfy the power and current consumption requirement at rated voltage	Electronic ballast
16.	IS 6842	Electromagnetic radiation levels	Electronic ballast

Sr.No	Standard	Description of Standard	Applicable to / Comment
17.	IS 9974 (part 1)	General requirement and test for HPSV lamps	HPSV lamps
18.	IS 2418 (Part 1) 1977	General lighting service part 1 general requirement and test	FTL tube lights
19.	IS 15111 (Part 2) 2002	Performance requirement	Self-ballasted general lighting
20.	IS 6616-1982 (reaffirmed 2001)	HPSV lamps ballast	
21.	IS 9974 (Part 1) 1981	HPSV lamps	
22.	IS 10322 (Part 5/Sec 3, reaffirmed 2005)	Control gears	
23.	IS: 1569 - 1976 (Reaffirmed 2001) (Incorporating Amendment No. 1)	Condensers	
24.	IS: 10276 - 1982(Part I & II)	Lamp holders	
25.	IS 2418 (Part 1) 1977 (Part 2) and IS 15111 (Part 2) 2002	Tube lights	
26.	IS 3043	Code of practice for earthing	
27.	IS 7752 (Part 1) : 1975	Guide for the improvement of power factor in consumer installations: Part 1 low and medium supply voltages	
28.	IS 3961	Recommended current ratings for cables	Cables used by the contractor (if applicable)
29.	SP 30 2011 National electrical code - Part 5, sections 1,2, 3	Section 1 Public Lighting Installations, Section 2 Temporary Outdoor Installations, Section 3 Permanent Outdoor Installations	
30.	IS 16107	Luminaires Performance (Part 1 and Part 2)	LED lamps
31.	IS 15885 (Part 2/Sec 13) : 2012	Lamp control gear	LED lamps
32.	IS 16106 : 2012	Method of electrical and photometric	LED lamps
33.	IS 16105 : 2012	Method of measurement of lumen maintenance of LED sources	LED lamps
34.	IS 16104 : 2012	Electronic control gear for LED lamps	LED lamps
35.	IS 16102 : 2012	Performance requirement for self-ballasted LED lamps	LED lamps
36.	ANSI C136.38-2009		Induction lamps

The Bidder should adhere to SP 72 (Part 8), IS 1944 (Parts 1) and IS 1970 (Part 2) providing code of practice for lighting of public streets and the street categorization criteria as detailed in **Table 2**.

Table 2 : Road Classes as per SP 72 (Part 8), IS 1944 (Part 1) and IS 1970 (Part 2)

Classification of Road	Main Roads Subdivided into Two Categories
CLASS A	
CLASS A1	Important routes with rapid and dense traffic where safety, traffic speed, and driving comfort are the main considerations
CLASS A2	Main roads with considerable volume of mixed traffic, such as main city streets, arterial roads and thoroughfares.
CLASS B	
CLASS B1	Secondary roads with considerable traffic such as main local traffic routes, shopping streets
CLASS B2	Secondary roads with light traffic
CLASS C	Lighting for residential and unclassified roads not included in previous groups
CLASS D	Lighting for bridges and flyovers
CLASS E	Lighting for town and city centres
CLASS F	Lighting for roads with special requirement such as roads near air fields, railways and docks

With reference to above road categorisation criteria and information collected through field survey, the roads to be covered under the ESCO projects are broadly classified as Class A and Class B roads. The illumination levels required to be maintained for lighting installations on different classes of roads as per Standards are detailed in **Table 3**.

Table 3 : Standard Illumination Ratios for Road Classes defined in SP 72 (Part 8), IS 1944 (Part 1) and IS 1970 (Part 2)

Classification	Average Illumination to be maintained during operational hours excluding off peak hours (lux)	Ratio Minimum to average illumination	Minimum illumination to be maintained during off peak hours
Class A1	30	0.4	15
Class A2	15	0.4	10
Class B1	8	0.3	6
Class B2	4	0.3	3

In addition to Class A and Class B roads few areas internal to the wards and by-lanes also consist of class C type of roads.

Operation and Maintenance of Street lighting System

Design parameters for road lighting as per IS 1981 and best practices for energy efficient street lighting project should be adopted.

The Contractor must ensure that all the street lighting fixtures shall remain ON for an average of eleven (11) hours a day. Off peak hours will be from 11:00 pm to 5:30 am in all seasons.

Non glowing lamps must be repaired within forty-eight (48) hours of the fault being detected.

Lamps

All lamps are to be compliant with the SP 72 specifications as well as the applicable IS specifications

Luminaires

All lamps, luminaires and gears/ballasts supplied under the project should be procured from ISO 9001 and ISO 14001 certified manufacturers. All the luminaires should comply with SP 72 (Part 4) specifications for luminaires and the Bidders shall provide following information for proposed luminaires before the TPEA to the Independent Energy Auditor.

- Technical catalogue of products
- Lumen depreciation curves of lamps
- Power and lumen output at different voltages
- Polar diagram of luminaires
- Printout of computer aided calculations for all parameters
- Lamp lumen maintenance and survival test data
- Manufacturers type test certificate of lamp, luminaires and gears from government accredited test laboratories /R&D labs to be provided.

Power Conditioning Feeder Panels

The design and operation of feeder panels shall comply with SP 72 Part 8 of National Lighting Code 2010. The typical specifications for the power conditioning panels shall be as follows:

- Feeder panels should have GPRS/GSM based remote streetlight monitoring system with capacity for self-protection from short-circuit, over voltage and anti-theft alert
- The rating of the streetlight controller should be at least one point three (1.3) times the lighting load as measured during the initial studies
- Energy meters to be installed in separately sealable and open able compartment within the feeder panels as per the following specifications:
 - Energy meters should have accuracy class of Class 1 or better, in compliance with the specifications of MSEDCL
 - Meters could be either three phase whole current or CT operated for LT as may be required based on the load connected to the feeder panel. The space to be created in the feeder panel for housing the meters should consider the same.

- Energy meters should be capable of logging parameters for each fifteen (15) minute time block with stamping of date and time. Such data logs should be retained in the energy meters for a period of sixty (60) days or more.
- Such energy meters should record the following minimum parameters:
 - Phase to neutral voltages
 - Phase-wise current
 - Phase-wise power factor and frequency
 - Total active power
 - Total reactive power
 - Total active energy
 - Total reactive energy
 - Total KVAH energy
- Meters should have requisite port for enabling remote reading and for connection of modem for the same;
 - Energy meter specifications should meet the minimum specifications specified by the distribution utility, MSEDCL and a sign-off on the same shall be obtained from MSEDCL prior to finalizing the specifications;
 - Energy meters shall be tested, installed and sealed in accordance with procedures specified by MSEDCL;
 - A signoff from MSEDCL on the design and specifications of the compartment in the feeder panel where the meters are to be housed is also recommended;
- Bidder has to install appropriate power conditioning devices to protect the new energy efficient technologies and components of feeder panels from damage. The power conditioning devices needs to accommodate, on a dynamic basis variations in the quality of power supplied by MSEDCL (including voltage variations and harmonics) to ensure performance of the lighting system. Standards stipulating the characteristics of electricity supplied by public distribution networks would not be applicable on the utility.
- Compensation mechanisms should ensure the power factor above zero point nine (0.90) at the feeder panel
- Any transition to dimming phase should not have any black-out time for the lighting system
- The bidders should always ensure that the system is capable to capture live data and record it at variable time-intervals. Following parameters should be recorded for every 60-120 minutes time interval:
 - Voltages
 - Current
 - Power factor
 - Active power (kW)
 - Apparent power (kVA)
 - Metering kWh cumulative
 - Metering kVAh cumulative
 - Number of hours the lamps were glowing
 - Special emergency on/off facility with wireless control.

- Benchmarking capacity so as to generate alert SMS for:
 - Phase-wise currents on crossing threshold values
 - Phase-wise voltages on crossing threshold values
 - MCB trips
 - Theft alerts
 - Group failure of lights
 - Contactor failure
 - No output supply
- Alert SMS shall be forwarded to five (5) phone numbers.
- GPRS/GSM modem should be used
- Minimum data storage for twelve (12) months (if data logged at one (1) hour intervals)
- Enclosure box of feeder panels shall be IP-54 compliant

Central Control Unit (MCU – Master) should provide additional features and daily user defined report. These features should include:

- Support to export reports on website to other application formats like MS Access, DB, SQL, Oracle etc.
- Printout facility available on web pages
- Inbuilt scalability to support large lighting network. Upton 250 no's of RTUs should be possible to be controlled from one Central Control Unit
- High up-time and immediate fault rectification through SMS intimation to maintenance team.
- Simplified maintenance
- Real-time control

Faults Monitoring:

- Under/over voltage detection
- Main breaker error
- Contactor fault
- Circuit breaker off
- Circuit phase errors (fuse, breaker, etc.)
- Main power failure
- Leakage to ground
- Manual switch activated
- Phase current out of range
- Control cabinet door open
- Lamp failures

SCHEDULE III MONITORING AND VERIFICATION PLAN

The monitoring and verification mechanism for the Project considers the establishment of energy baseline consumption norm for each switching point through an independent Third Party Energy Audit (TPEA) to be undertaken by an Independent Energy Auditor appointed by SMC (and paid for by the ESCO). The savings for the purpose of monthly Contractor payments will be derived in accordance with actual consumption as recorded by the energy billing meters for a particular billing month, giving due consideration to factors such as actual availability of power, number and duration of non-functional street lighting fixtures, lux levels maintained on the street lighting stretches, etc. in accordance with the procedure outlined below. It is important to note that particular street lighting stretches shall be handed over to the Contractor for implementation of ECMs by SMC only once the installation of feeder panels (including meters) and the TPEA for such feeders/ stretches has been completed. The monitoring and verification mechanism shall include the following in their order of sequence:

- a) **Asset Marking and Meter Installation by the Contractor:** The Contractor shall conduct a detailed asset survey and complete pole marking using nomenclature approved by SMC. Such nomenclature shall capture details such as the particular switching point/ energy billing meter or connection number, street, pole number, fixture type etc. Such pole number should be painted or put at a legible point on each street lighting pole at a height of five (5) foot from the ground level with a minimum font size of three inches (3”).

The coding/ nomenclature for numbering shall clearly indicate the following:

- i. Utility electricity billing meter/ connection or switching point;
- ii. Street;
- iii. Pole number on the particular switching point;
- iv. Type of fixture; and
- v. Number of fixtures.

The following recommended nomenclature (AAA/ AAA/ NNN/ A/ N) shall be adopted for the purpose of asset/ pole marking, with due approvals from SMC if any changes are made:

Parameter	Utility Electricity Billing Meter/ Connection or Switching Point	Street	Pole Number on the Switching Point	Type of Fixture	Number of Fixtures
Nomenclature	AAA (Alphabetical code comprising three characters)	AAA (Alphabetical code comprising three characters)	NNN (Numeric code comprising three digits)	A (Number code representing type of fixture installed on the particular pole)	N (Number of fixtures installed on the particular pole)

The Contractor shall provide details of the nomenclature developed for street light numbering to SMC and update SMC for any additions or deletions that may be necessary from time to time. Also, the Contractor shall provide the detailed asset inventory and numbering to SMC for each stretch/ metering point once they are completed.

The Contractor shall thereafter install the feeder panels comprising of the metering unit in accordance with the meter specifications notified by MSEDCL. For un-metered stretches where the ESCO meters shall become the energy billing meters, such meters shall be tested from the MSEDCL lab and installed and sealed as per MSEDCLs procedures.

- b) **Third Party Energy Audit (TPEA):** SMC shall invite tenders from independent energy auditors to establish the energy baseline consumption norm of the metered street lighting stretches. SMC shall select an Independent Energy Auditor from the bids received based on the technical and financial criteria specified in the tender documents. The Contractor shall bear the cost and expenses of the Independent Energy Auditor.

SMC, the Contractor engineers and the Independent Energy Auditor will form a team. The Independent Energy Auditor will install the programmable calibrated data loggers in series with the feeder panel meters at all the switching points. The Independent Energy Auditor shall verify and record the following to create an energy baseline consumption over three (3) days in a sequence:

- i. Switching on-time for the street lighting stretch;
- ii. Switching off-time for the street lighting stretch;
- iii. Hours/ duration of actual availability of power supply;
- iv. Number and duration of working street lighting fixtures;
- v. Consumption recorded in the data logger; and
- vi. Average lux output of lamps per switching points.

The data shall be used to calculate the average hourly consumption on the given stretch/ street lighting system with due adjustments on account of non-functional street lighting fixtures/ duration of power availability. The average hourly consumption should reflect the consumption in the as-is system assuming all street lighting fixtures are in working condition.

During the TPEA, if the difference in energy consumption of data loggers installed by the Independent Energy Auditor and meters installed by the Contractor is found to be more than three per cent (3%) then the Contractor shall be required to get such meters tested in MSEDCL lab and if found inaccurate the same shall be recalibrated or replaced by the Contractor.

The Independent Energy Auditor shall then certify the fixture hourly consumption norm or the baseline for the particular stretch with due consideration to the actual availability of power, as recorded in the data logger and the actual working status of street lighting fixtures. Such baseline figures shall be signed off by both SMC and the Contractor in addition to the Independent Energy Auditor and shall become binding for the entire life of the Project. The Contractor shall implement its ECMs on each stretch once the TPEA is conducted and energy baseline consumption is determined.

- c) **Monitoring and Verification Protocol during the Term of the Project:** This protocol shall apply to the street lighting fixtures which are declared commissioned post implementation of the ECMs by the Contractor and are handed over to the Contractor in accordance with Phase 3.

The Contractor shall, on a daily basis record and report to SMC, the energy consumption, power outage, voltage dimming hours, hour wise number of estimated functional lamps etc. as per the formats provided in this Contract. The Contractor shall submit to SMC daily reports containing the data regarding the working of various handed over street lighting fixtures in accordance with the formats provided in the Annexure:

- Daily non-functional lamp report
- Daily report for switching point
- Daily overall report for entire Project

The identified non-functional street lighting fixture must be replaced the very next day after such event occurred and appropriate records must be created for such work undertaken on a particular feeder/ switching point during a particular energy billing month.

The Contractor shall in the same monthly billing period (i.e. the same initial and final meter reading dates) as that followed by MSEDCL, issue its invoice providing detailed calculations of the actual Energy Savings achieved with respect to the energy baseline consumption norm determined through the TPEA. The following procedure shall be adopted for the purpose of invoicing:

- i. The billing to be done by the Contractor shall outline the following aspects:
 - Start Date/ End Date for billing period and corresponding meter readings;
 - Day wise adjustments made in baseline to be used for calculating actual Energy Savings achieved:
 - Duration of power outage;
 - Number of non-functional points along with duration that such points remained non-functional;
 - Proportionately adjusted baseline shall be calculated for each day based on above;
 - ii. The difference between the adjusted baseline and the actual consumption recorded for the particular day shall be considered as the demonstrated savings for that particular day.
 - iii. The demonstrated savings and the total adjusted baseline for each particular day during the month/ billing period shall be added together to calculate the total demonstrated energy savings and the total consumption as per the adjusted baseline.
 - iv. The overall format for switching point wise and overall energy savings achieved during any billing period shall be submitted in accordance with the Monthly Energy Savings Calculation Format provided in the Annexure.
 - v. The invoices shall be in accordance with the eligibility for Energy Savings Fee in accordance with Article 16.1. Invoices should clearly highlight the actual energy consumption, total outage hours, adjustments towards non-functional points for their respective durations etc. as per the detailed format provided in the Annexure.
- d) **EPC:** SMC shall obtain a sample five per cent (5%) stretches verified through the Independent Energy Auditor to review the compliance of the lux levels being maintained by the ESCO and cross checking of the energy savings claims being made by the Contractor on a semi-annual basis.

Draft Monitoring and Verification Formats

Daily Non-Functional Points Report						
Report Date:						
Switching Point No./Name	Total Number of Points as on Date (EOD)	Total Number of Non-Functional Points as on Previous Day (EOD)	Total Number of Non-Functional Points as on Date (EOD)	Number of Non-Functional Points for the Day	Action Taken	Remarks

DAILY REPORT FOR SWITCHING POINT																									
Report Date																									
Feeder Panel / E.B. No																									
Switching Point No. / Name																									
Hours	Meter No.	Energy Consumption (KWH)	Avg.I/P Voltage	Avg.O/P Voltage	Current (A)	Kw	P.F	Power Availability (in mins)			Burning Load (Watts)									Non Burning Load					Remarks
								P-1	P-2	P-3	40 W TL	70 W SVL	150 W SVL	250 W SVL	250 W MHL	400 W MHL	70 W LED	40 W TL	70 W SVL	150 W SVL	250 W SVL	250 W MHL	400 W MHL	70 W LED	

DAILY OVERALL REPORT - FOR ENTIRE PROJECT																								
Report Date																								
Energy Consumption (KWH)	Power Availability							Burning Lamp Hours (Watts) (Working Number of Fixtures X Hours)								Non-Burning Lamp Hours (Watts) (Working Number of Fixtures X Hours)						Total Non-Functional Lamps (EOD)	Remark	
	Avg.I/P Voltage (V)	Avg. Current (A)	Avg. Kw	P.F	P-1	P-2	P-3	40 W TL	70 W SVL	150 W SVL	250 W SVL	250 W MHL	400 W MHL	70 W LED	40 W TL	70 W SVL	150 W SVL	250 W SVL	250 W MHL	400 W MHL	70 W LED			

MONTHLY ENERGY SAVINGS CALCULATION FORMAT (TO BE CONSIDERED FOR INVOICING)																			
Report Date																			
S L	Switching Point No./ Name	Meter No	Start Meter Rdg. Date	End Meter Rdg. From Previous Invoice	End Meter Rdg. Date	End Meter Rdg.	No. of Fixtures During Billing Period	Total On hours (Hours)	Energy consumption (kWh) (SAME AS MSEDCL BILL)	Hourly Per Fixture Baseline (kWh)	Loss of Lamp Hours Due to Power Outage (Hours)	Loss of Lamp Hours due to Non functional points (Hours)	Actual Lamp Hours during Billing Period (Hours)	Baseline Consumption As per TPEA Norm (KWH)	Adjustments Energy Consumption on Account of (i) SMCs/ MSEDCLs inability to control theft; (ii) Points removed by SMC during the project tenure	Savings Achieved (KWH)	% Savings	% Non-functional lamp hours	Remarks
					A	B	C	D	E=B-A	F	G	H	I=D-G-H	J=CxI	K	L=J-(E+/-K)	M=L/J	N=H/(CX D)	

SCHEDULE IV SCOPE OF WORK FOR INDEPENDENT ENERGY AUDITOR

The scope of work of the Independent Energy Auditor for the Third Party Energy Audit to be undertaken in the presence of both SMC and ESCO for establishing the energy baseline consumption for street lights is as follows:

1. Scope for joint third party energy audit for energy baseline consumption for existing system for each switching point proposed to be covered under the Project

1.1. Verification of asset data / marking

- (a) Verification and certification of switching points (metered connection points or feeder panels) and inventory of street lighting assets, including the following:
- ☐ type of fixtures including wattages of bulbs, ballasts, chokes, etc. (as per actual consumption) and total number of fixtures of each type ;
 - ☐ total number and height of street lighting poles;
- (b) Switching point wise – Names of the streets to which the switching point electrical lighting circuit caters to, total length and widths of streets illuminated (lighting stretch catered to by the switching point);
- (c) Validation of switching point wise pole numbering/ marking, as done by ESCO;
- (d) Validation of single line diagram and indicative maps, if any, indicating location of switching point, metering equipment, fixtures, poles, etc.

Measurements and analysis to be undertaken for a switching feeder post completion installation of feeder panel/ metering.

- (e) Installation of data loggers calibrated and certified by a recognized laboratory in series with energy billing meters on each switching point on receipt of intimation from SMC/ ESCO. The responsibility of installation and safety of data loggers shall lie with the Independent Energy Auditor;
- (f) Isolation of the voltage dimming, remote switching and all other circuits (if any) in the feeder panels installed by ESCO, except the energy billing meter, from the street lighting circuit;
- (g) Measurement of the electrical parameters, such as voltage, current, active/ reactive power, power factor, etc. using calibrated instruments/data loggers for three (3) consecutive days (recording hourly energy consumption) on all street lighting feeders, for the entire duration of the time; Presence of SMC and MSEDCL members at the site for some time, during measurement is essential.

- (h) Logging of data on actual power availability during street lighting operating hours for the period during which measurements of electrical parameters are undertaken;
- (i) Half-hourly verification of the number of points glowing and not-glowing during street light operating hours for each day during which measurements of electrical parameters are undertaken;
- (j) The hourly data for switching points/ feeders must be developed in accordance with the formats given in the metering & verification plan for the period of three (3) days;
- (k) Calculation of per switching point/ per feeder energy baseline consumption norm based on kWh consumption per fixture per hour data and number of each of the type of fixtures connected to the switching point from the electrical measurements undertaken, after duly adjusting for the duration for which power remained unavailable and fixtures which were not glowing/ operational (with due consideration to the actual duration for which such fixtures remained non-glowing). The energy parameters measurements for the entire period of three (3) days during which the audit was conducted shall be used for arriving at the energy baseline consumption norm; SMC should ensure that all fixtures connected to the switching point are in working condition when the intimation is given to the ESCO.
- (l) Certification of switching point/ feeder wise energy baseline consumption norm based on kWh/ fixture/ hour as the basis as described above.

1.2. Switching point wise report submission

- (a) Detailed report on data collected and analysis of hourly energy consumption along with details such as power availability duration, glowing/ non-glowing status of fixtures should be summarized to demonstrate the certified energy baseline consumption norm for a particular switching point. The reports should be submitted within five (5) working days from completion of field exercise for each switching point. The Independent Energy Auditor shall certify per fixture hourly consumption norm or the baseline for the particular switching point catering to a particular stretch of street lighting fixtures.
- (b) Such baseline figures shall be signed off by both SMC and ESCO in addition to the Independent Energy Auditor and shall become binding for the entire life of the Project for the particular switching point.
- (c) Along with kWh consumption per fixture per hour data (baseline for the particular switching point) the number of each of the type of fixtures connected to the switching point shall be reported and accepted by all parties.
- (d) The ESCO shall implement its ECMs on each stretch once the TPEA is conducted and the energy baseline consumption is determined and formally signed off.
- (e) Those ECMs which come embedded with the feeder panel shall be disabled/ by passed by the

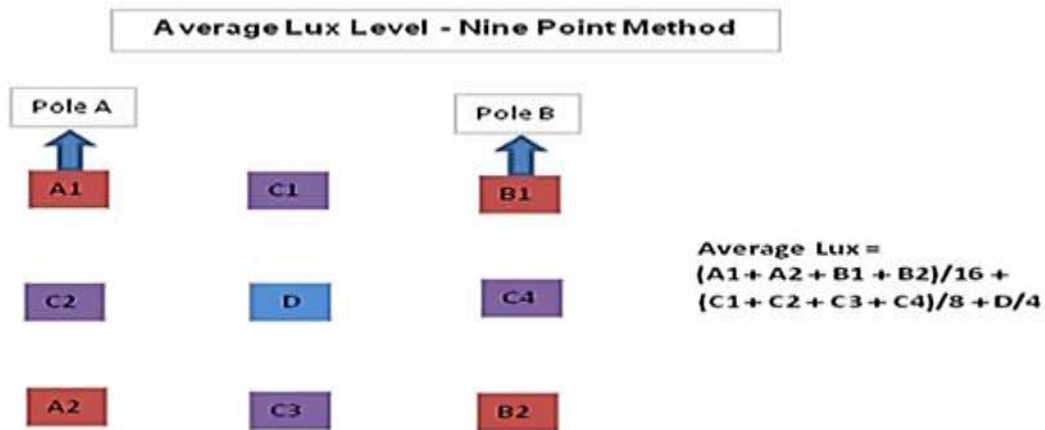
ESCO before the TPEA, as mentioned earlier in 1.1(f).

2. Undertaking periodic third party verification of lux level measurements on street lighting fixtures on sample basis

- (a) Undertaking lux level measurements on randomly selected five per cent (5%) of the street lighting fixtures covered under the Project. Such sampling may be decided in mutual consultation with SMC. In case of non-agreement in sampling during mutual consultations, fifty per cent (50%) of the sample size (two point five per cent (2.5%) of street lighting fixtures) would be decided by SMC.
- (b) The Independent Energy Auditor shall be responsible for arranging all requisite measuring equipments duly calibrated and certified from a recognized laboratory required for undertaking the lux level measurements on the selected sample points in adequate quantity.
- (c) The Independent Energy Auditor shall deploy adequate number of personnel required for undertaking the lux level measurements on the selected sample within the timeframe specified by SMC.
- (d) Such lux level measurements shall be undertaken in accordance with standard procedures including measurements along the pole, under light fittings, middle of the road and both edges of the road. Between two poles, the lux level should be measured towards verge, middle of the road and both edges of the road.

The procedure of calculating the lux level measurements based on the nine point methodology to be adopted for the lux level measurements, as per the guiding principles of the Bureau of Energy Efficiency Lighting Code, 2006, shall be as outlined below:

- The measurements should be conducted in night. The lamps must be switched on at least thirty (30) minutes before the measurements to allow for the lamps to completely warmed up;
- The dimming controls should be fixed at different levels as agreed in energy performance contract and simultaneous power and lux measurements should be carried out for selected lamps;
- Stray light from the surrounding areas should be minimized at the time of measurements;
- The measurement height should be one (1) meter above the road surface;
- The measurement grid should be positioned to cover a representative area of the working plane. The lux meter should be positioned at minimum nine (9) number of measurement points as per the diagram provided below:



- Measure illuminance using a calibrated lux meter at each point. Calculate the average value of measured illuminance at all points As per the formula shown in the figure above.

3. **Report submission**

The Independent Energy Auditor shall submit within five (5) days of completion of field exercise of measurements its detailed report meeting the following requirements:

- providing point wise results, giving the asset number indicated in the pole marking for each such point, the results of the lux level measurements;
- comparison of the results of lux level measurements with the recommended lux level for each point; and
- Percentage of points found to be compliant with the recommended lux level standards.

The Independent Energy Auditor shall also provide detailed report of survey highlighting the above mentioned points and provide switching point/ street wise results of measurements with stress on bringing out instances where non-compliance is high.

4. **Disputes between the Parties as per Article 28 of the Contract**

Failing an amicable settlement pursuant to Article 28.1 of the Contract within thirty (30) days of receipt of the request provided therein, any dispute, controversy or claim shall be referred by either Party to the Independent Energy Auditor. The Independent Energy Auditor, on the request made by a Party, shall endeavor to resolve the issue and arrive at a settlement mutually agreeable to both Parties. Decisions taken by the Independent Energy Auditor shall amount to recommendations to both Parties only and shall not constitute binding decisions therein. If any dispute, controversy or claim has not been resolved between the Parties through an amicable settlement or based upon the decision taken by the Independent

Energy Auditor, such dispute, controversy or claim may then be submitted to litigation as provided in Article 28.3 of the Contract.

SCHEDULE V PERFORMANCE GUARANTEE

[Name of the Contractor]

[insert date] []

Letter of Guarantee No.: []

Our client, [] (the "**Contractor**"), has entered into an energy performance contract with the Solapur Municipal Corporation of the State of Maharashtra for the provision of operation and management services in the public street lighting sector in the city of Solapur (the "**Contract**").

We, [] (the "**Bank**"), hereby unconditionally and irrevocably undertake to pay the Solapur Municipal Corporation any sums up to maximum amount of Rs. 2,(Two) Crore (the "**Maximum Amount**"), in connection with the Contractor's obligations under the Contract and in accordance with the following:

- (A) We shall pay you immediately upon your written demand and irrespective of any objection by the Contractor or any other party such amount or amounts as you may demand up to the Maximum Amount;
- (B) All payments made based on your demand shall be free and clear of, and without any present or future deduction for payment of, any taxes, levies, duties, charges, fees, deductions or withholdings of any nature whatsoever and by whomsoever imposed;
- (C) The undertakings contained in this performance guarantee constitute our direct and fundamental obligations and are unconditional and irrevocable. We shall not be excused from any or all of these obligations for any reason or reasons of whatever nature or source, such as change in the terms and conditions of the Contract or change in the scope or nature of the work to be performed by the Contractor, or any omission, act or proceeding by you or by a third party which would excuse or discharge us from the obligations and liabilities stated in this guarantee;
- (D) This performance guarantee shall remain valid and in full force and effect up to the end of the _____ day of the month of _____ of the year _____; and
- (E) This performance guarantee shall be governed by and construed in accordance with the laws and regulations of the India and any dispute with respect to this performance guarantee shall be resolved by the competent Indian courts.

The Bank

[Authorised signatories]

SCHEDULE VI TRUST AND RETENTION ACCOUNT AGREEMENT.

[To be filled in after the award of the winning offer, prior to the execution of the Contract]

THIS TRUST AND RETENTION ACCOUNT AGREEMENT (this "**Agreement**") is entered into on [?] by and among:

1. **Solapur Municipal Corporation** of the city of Solapur, State of Maharashtra, having its registered office at [?] and its legal representative being [?] ("**SMC**");
2. [?], a company duly registered in India as per the Companies Act of 1956, as amended from time to time, located at [?] and its representative being [?], duly authorized ("**ESCO**"); and
3. [?], a bank duly registered in India, having its principal office at [?], and represented by [?] (the "**Escrow Agent**").

SMC, ESCO and the Escrow Agent are referred to herein collectively as the "**Parties**" and individually as a "**Party**".

WHEREAS:

- A. According to the energy performance contract entered into on [?] between SMC and ESCO (the "**EPC**"), SMC and the Escrow Agent shall establish an escrow account for the benefit of ESCO. SMC shall fund such account (pursuant to the terms of this Agreement), which shall serve to secure part of SMC's payment obligations towards ESCO under the EPC.
- B. The Escrow Agent is willing to serve as an escrow agent in accordance with the terms and conditions of this Agreement.
- C. Unless otherwise defined herein, all capitalized terms shall have the meaning ascribed to them in the EPC.

NOW, THEREFORE, the Parties hereto agree as follows:

1. ESCROW ACCOUNT

1.1 Appointment

SMC and ESCO hereby appoint the Escrow Agent to serve as the escrow agent for the purposes of this Agreement and subject to the terms of this Agreement and the Escrow Agent hereby accepts this appointment.

1.2 Escrow Account

Within five (5) Business Days of the date hereof, SMC and the Escrow Agent shall establish an escrow bank account denominated in Indian Rupees for the benefit of ESCO (the "**Escrow Account**").

1.3 Deposit

1.3.1 No later than three (3) months following the establishment of the Escrow Account in accordance with Article 1.2 above, SMC shall transfer an amount equivalent to what it used to pay for (i) three (3) months of electricity bills before the execution of the EPC, and (ii) seventy-five Indian Rupees (Rs. 75 only) for the operation and maintenance of each street lighting fixture in the Project Area (as defined in the EPC) (the "**Initial Deposit**").

1.3.2 Each month following the Initial Deposit, SMC shall transfer into the Escrow Account, in immediately available funds, an amount equal to what it used to pay for (i) one (1) month of electricity bill before the execution of the EPC, and (ii) twenty-five Indian Rupees (Rs. 25 only) for the operation and maintenance of each street lighting fixture in the Project Area (collectively, the "**Deposit**"). The Deposit shall be held in escrow by the Escrow Agent until it is released in accordance with the terms and conditions of this Agreement.

1.3.3 Failure to comply with this Article 1.3 shall be deemed a SMC Event of Default under Article 27.2 of the EPC.

1.3.4 The Initial Deposit and the Deposits made each month by SMC shall be collectively referred to as the "**Escrow Amount**".

1.4 Identification and Separation

The Escrow Agent shall clearly identify in its records the Escrow Account as an escrow account and shall keep the funds standing to the credit of the Escrow Account segregated from and not commingled with the Escrow Agent's own funds or the funds of any of its other customers or third parties.

1.5 Fees

1.5.1 SMC shall bear the costs of the fees to be paid to the Escrow Agent for the establishment and management of the Escrow Account.

1.5.2 Any payment made by SMC under this Agreement shall be made from the following account or from such other account which SMC may designate from time to time:

Bank:

Account number: BIC (SWIFT): Address of Bank:

1.6 Escrow Account Statements

The Escrow Agent shall provide monthly statements regarding the Escrow Account to SMC and ESCO.

2. ESCROW AMOUNT

2.1 Promptly upon the Deposit being transferred to the Escrow Account, the Escrow Agent shall send to SMC and ESCO a notice informing them of the transfer.

2.2 The Escrow Agent shall hold the Escrow Amount in escrow for the sole benefit of ESCO. The Escrow Agent shall not release any of the Escrow Amount for any person other than ESCO. In particular, the Escrow Agent shall not accept any requests for withdrawals or transfers of the Deposit or the Escrow Amount from SMC for the benefit of SMC or any third party, unless it is made in accordance with this Agreement.

2.3 The Escrow Agent shall not apply any right of set-off against the Escrow Amount, grant any lien over the Escrow Amount, or apply any fee or deduction in relation to the Escrow Amount.

2.4 At the end of each calendar year, the Escrow Agent shall transfer into an account of SMC as SMC shall designate, any amount exceeding an amount equivalent to the Initial Deposit. Thus, the Escrow Amount at the end of each calendar year shall be equivalent to the amount of the Initial Deposit.

3. PAYMENT

3.1 Each month, ESCO shall issue an invoice and send it to the Escrow Agent along with supporting documents, with a copy to SMC. Pursuant to the review of the supporting documents, the Escrow Agent shall pay ESCO seventy-five per cent (75%) of the amount mentioned on the invoice within five (5) Business Days following the receipt of such invoice.

3.2 The remaining twenty-five per cent (25%) of the amount of the invoice shall be paid by the Escrow Agent upon submission by ESCO of a written approval of its invoice by SMC. In the event the Escrow Agent does not receive a written approval by SMC, it shall not release the remaining twenty-five per cent (25%).

3.3 Upon the expiry of the Term of the EPC, SMC shall send instructions to the Escrow Agent requesting him to release and transfer any due and payable amounts to the Contractor and any remaining amounts to be transferred to SMC.

4. OBLIGATIONS OF THE ESCROW AGENT

4.1 The obligations of the Escrow Agent under this Agreement are subject to the following terms:

- (a) the duties of the Escrow Agent are only as herein specifically provided, and are purely administrative in nature. The Escrow Agent shall neither be liable for, nor chargeable with knowledge of, the terms and conditions of any other agreement, instrument or document in connection herewith, including, without limitation, the EPC, and shall be required to act in respect of the Escrow Amount only as provided in this Agreement. This Agreement sets forth all the obligations of the Escrow Agent with respect to any and all matters pertinent to the Escrow Account contemplated hereunder and no additional obligations of the Escrow Agent shall be implied from the terms of any other agreement. The Escrow Agent shall incur no liability in connection with the discharge of its obligations under this Agreement or in connection therewith, except such liability as may arise from the Escrow Agent's negligence, willful misconduct or otherwise from any breach of this Agreement. Such liability, however, shall not exceed the amount of the Escrow Amount outstanding at the date of the said breach by the Escrow Agent;
- (b) the Escrow Agent shall not be required to perform any acts which will violate any laws or regulations applicable in India and in the State of Maharashtra;
- (c) in the event of any bankruptcy proceedings or enforcement proceedings against any of the Parties pursuant to applicable laws or regulations, the Escrow Agent shall, notwithstanding the provisions of this Agreement, act and perform in accordance with the applicable laws or regulations.

5. REPRESENTATIONS AND WARRANTIES

Each Party represents and warrants that, as of the date hereof and in the foreseeable future:

- (a) it has the authority to enter into this Agreement;
- (b) this Agreement constitutes a legally valid and binding obligation, enforceable against it in accordance with its terms;
- (c) its entry into and/or performance under this Agreement will not be in breach of any express or implied terms of any contract with or other obligation to any third party; and
- (d) it is solvent and able to perform all of its obligations under this Agreement.

6. MISCELLANEOUS

6.1 Notices

Any notice or other communication to be given or made under this Agreement to the Parties shall be in writing. Except as otherwise provided in this Agreement, such notice, request or other communication shall be delivered by registered mail or facsimile to the Party(ies) at the following addresses:

SMC: [?]

Escrow Agent: [?]

ESCO: [?]

6.2 Entire Agreement

This Agreement constitutes the entire agreement and understanding between the Parties with respect to its subject matter (i.e. escrow arrangement) and replaces and supersedes all prior agreements, arrangements, undertakings or statements regarding such subject matter.

6.3 Amendments

No variation of or amendment to this Agreement shall be effective unless made in writing and executed by all the Parties hereto.

6.4 Assignment

Neither this Agreement nor any of the rights or obligations hereunder may be assigned by a Party without the prior written consent of the other Parties; provided, however, that ESCO shall be entitled, to the extent permitted by law and as may be required under its financing documents, to assign or create liens over its rights and interests under or pursuant to this Agreement.

6.5 Severability

Whenever possible, each provision of this Agreement shall be interpreted in such a way as to be effective and valid under law, but if any provision of this Agreement is unenforceable or invalid under law, such provision shall be ineffective only to the extent of such unenforceability or invalidity, and the remaining provisions of this Agreement shall continue to be binding and in full force and effect.

6.6 Confidentiality

Unless otherwise determined by a competent jurisdiction, the Parties, their employees, representatives and agents shall keep the provisions of this Agreement strictly confidential and, except as may be required by law, shall make no disclosure thereof to any person, except the Parties' respective legal counsel and professional advisers, without the prior written consent of the other Parties.

6.7 Termination

This Agreement shall be automatically terminated upon the expiry of the Term of the EPC. It may also be terminated earlier if SMC and ESCO agree to terminate the Agreement and send a termination notice to the Escrow Agent.

6.8 Dispute Resolution Mechanism

- 6.8.1 This Agreement shall be governed by and construed in accordance with the laws of India and the laws of the State of Maharashtra.
- 6.8.2 If any dispute arises out of or in connection with this Agreement, this dispute shall not affect the Parties' duty to continue the performance of all of their non-disputed obligations.
- 6.8.3 If any dispute arises, either Party shall give notice to the other Parties of the same, whereupon the Parties shall meet promptly and in a good faith to attempt to reach an amicable settlement.
- 6.8.4 All disputes not settled amicably pursuant to Article 6.8.3 above shall be heard by the High Courts of Maharashtra.

IN WITNESS WHEREOF, each Party has duly executed this Agreement in four (4) originals on the date set out on the first page hereof.

SCHEDULE VII FORM OF DIRECT AGREEMENT

[To be filled in after the award of the winning offer, prior to the execution of the Contract]

Please note that this form of direct agreement may not be appropriate for all types of financing arrangements and the Parties will need to review and amend this document in light of the Contractor's financing arrangements.

This direct agreement (the “**Agreement**”) is made on [], 201[], by and between:

1. **Solapur Municipal Corporation** (the “**SMC**”);
2. [] (the “**Agent**” for the Lenders); and
3. [] (the “**Contractor**”)

WHEREAS

- A. SMC and the Contractor have entered into an energy performance contract (the “**EPC**”) on [], under which the Contractor undertakes the implementation of energy conservation measures, installation of feeder panels for automation and metering, and shall operate and maintain at least seventy per cent (70%) of the street lighting fixtures surveyed and certified by the third party energy audit within the Project Area (as defined in the EPC).
- B. The Lenders have entered into an agreement for the provision of financing from the Lenders to the Contractor on [] in connection with the EPC.
- C. It is a requirement of the EPC that this Agreement will be entered into by the Parties hereto.

IT IS AGREED AS FOLLOWS:

1. Definitions and Interpretation

- 1.1 In this Agreement, any capitalised terms which are not otherwise defined in this Agreement shall have the meaning given to them in the EPC, and the following expressions shall have the following meanings:

“Appointed Representative” means a representative that has assumed the Contractor’s rights under the EPC, such as:

- a) the Agent and/or any of the Lenders;
- b) a person directly or indirectly owned or controlled by the Agent and/or any of the Lenders; or
- c) any other person approved by SMC (such approval not to be unreasonably withheld or delayed).

“Security Document” means [?].

“Step-In Date” has the meaning given to it in Clause 4.1.

“Step-In Period” means the period from the Step-In Date up to and including the earlier of:

- a) the Step-Out Date;
- b) the date of any transfer under Clause 7 (Novation);
- c) the date of any termination for breach under Clause 5 (Step-In Period);
- d) the date of expiry of the EPC; and
- e) the date falling one year after the Step-In Date.

“Step-In Undertaking” means a written undertaking in the form set out at Annexure 1.

“Step-Out Date” means the date falling [40] days after the date of the notice given under Clause 6.

“Substitute Contractor” has the meaning given in Clause 7.1.

1.2 Save to the extent that the context or the express provisions of this Agreement otherwise require:

- a) heading and sub-headings are for each of reference only and shall not be taken into consideration in the interpretation or construction of this Agreement;

- b) all references to Clauses and Schedules are references to Clauses of and Schedules to this Agreement;
- c) all references to any agreement (including, without limitation, this Agreement), document or other instrument include (subject to all relevant approvals and any other provision of this Agreement expressly concerning such agreement, document or other instrument) a reference to that agreement, document or instrument as amended, supplemented, substituted, novated or assigned;
- d) the words “herein”, “hereto” and “hereunder” refer to this Agreement as a whole and not to the particular Clause, Schedule, part, section, paragraph, annex or appendix in which such word may be used;
- e) references to “Parties” mean the parties to this Agreement and references to a “Party” mean one of the parties to this Agreement.

2. CONSENT TO SECURITY

- 2.1 The Contractor hereby gives notice to SMC that the Contractor has granted [*insert details of security interest*] as set out in the Security Document.
- 2.2 SMC acknowledges notice of, and consents to, the security interest granted over the Contractor’s rights under the EPC in favour of the Lenders under the Security Document.
- 2.3 SMC confirms that it has not received notice of any other security interest granted over the Contractor’s rights under the EPC.

3. NO TERMINATION WITHOUT NOTICE

SMC shall not terminate or give notice of termination of the EPC, save in the circumstances set out in Clause 2 of the EPC, without giving to the Agent at least [sixty (60)] days of prior written notice stating the Contractor Event of Default (as described in Clause 27.3 of the EPC). This notice shall also contain details of all amounts due and payable by the Contractor to SMC and any other existing liabilities or unperformed obligations by the Contractor under the EPC.

4. APPOINTED REPRESENTATIVE

4.1 Without prejudice to the Agent's rights under the Security Document, at any time during the notice period mentioned in Clause 3 above, the Agent may give SMC seven (7) days prior notice of the date when an Appointed Representative shall assume, subject to Clause 4.2, jointly and severally with the Contractor, all of the Contractor's rights under the EPC (the "**Step-In Date**").

4.2 The Lenders shall provide SMC a Step-In Undertaking prior to the Step-In Date.

5. STEP-IN PERIOD

5.1 Without prejudice to Clause 3, but subject to Clause 5.2 below, SMC shall not terminate the EPC during the Step-In Period on grounds that the Lenders or their Agent have taken any action referred to in Clause 4 or enforced any Security Document.

5.2 SMC shall deal with the Appointed Representative and not the Contractor during the Step-In Period.

6. STEP-OUT AND END OF STEP-IN PERIOD

6.1 The Agent shall give SMC a prior written notice of the Step-Out Date.

6.2 On the Step-Out Date, subject to Clause 6.3:

- a) the Appointed Representative will be released from all of its obligations and liabilities to SMC under the EPC arising prior to the Step-Out Date and the rights of the Appointed Representative against SMC will be cancelled; and
- b) the Lenders shall be released from the Step-In Undertaking.

6.3 The releases between SMC, the Appointed Representative and the Lenders under Clause 6.2 above shall be subject to the obligation of the Lenders to pay any sums accrued before the end of the Step-In Period and to perform and discharge any obligations or liabilities under the Step-In Undertaking which have arisen before the end of the Step-In Period.

6.4 The Contractor shall continue to be bound by the terms of the EPC notwithstanding the occurrence of the Step-Out Date.

7. NOVATION

- 7.1 Subject to Clause 7.2, at any time during the Step-In Period the Agent may give prior written notice to SMC and any Appointed Representative proposing to procure the transfer by way of novation of the Contractor's rights and obligations under the EPC to another person (the "**Substitute Contractor**").
- 7.2 The Agent shall not be entitled to implement a proposal under Clause 7.1 unless SMC consents to such proposal in writing. SMC shall notify the Agent as to whether it consents to the proposal or not.
- 7.3 The Agent shall, as soon as practicable, supply SMC with such information as SMC reasonably requires, to enable it to decide whether to grant its consent to a proposal pursuant to Clause 7.1.
- 7.4 SMC may withhold its consent to a proposed novation if it believes that the Substitute Contractor does not have the same technical experience or capacities as the Contractor, or *[may be completed later by the Parties as appropriate]*.
- 7.6 On any novation referred to in Clause 7.1 becoming effective:
- a) the Contractor shall be released from any obligations arising under or in connection with the EPC from that date and the Substitute Contractor shall become liable for obligations arising on or after that date;
 - b) SMC shall enter into a direct agreement with the Agent lending to the Substitute Contractor on substantially the same terms as this Agreement;
 - c) any subsisting grounds for termination of the EPC by SMC shall be deemed to have no effect in respect of the period prior to the novation becoming effective; and
 - d) any subsisting termination notice shall be automatically revoked.

8. MISCELLANEOUS

- 8.1 SMC shall, at the Contractor's expense, take whatever action the Agent or Appointed Representative may require for perfecting the novation under Clause 7 including the execution of any transfer or assignment, and the giving of any notice, order or direction and the making of any registration.

- 8.2 This Agreement shall remain in effect until earlier of the expiry of the Term of the EPC or the date on which all amounts which may be due by the Contractor to the Lenders under the financing agreements have been irrevocably paid in full.
- 8.3 The Agent shall notify SMC of the date referred to in Clause 8.2 above on or before its occurrence.
- 8.4 The Contractor joins in this Agreement to acknowledge and consent to the arrangements set out herein and agrees not knowingly to do or omit to do anything that may prevent any party from enforcing its rights under this Agreement.
- 8.5 For the avoidance of doubt, if there is any conflict or inconsistency between the provisions of this Agreement and the EPC, the provisions of this Agreement shall prevail.

9 NOTICES

- 9.1 Any notice shall be duly given if signed by or on behalf of a duly authorised officer of the person giving the notice and left at or sent by registered post or by facsimile or email transmission to the following addresses:

[?]

10. ASSIGNMENT

- 10.1 No party to this Agreement may assign or transfer any part of its rights or obligations under this Agreement, save that:
- a) the Agent may assign or transfer its rights and obligations under this Agreement to a successor agent in accordance without the consent of SMC;
 - b) the Lenders may assign or transfer their rights under the financing agreements in accordance with the terms of the financing agreements.
- 10.2 If paragraph 10.1(a) applies then SMC shall enter into a direct agreement with the new Agent on substantially the same terms as this Agreement.

11. GOVERNING LAW

- 11.1 This Agreement shall be governed by and construed in all respects in accordance with the laws of India and the laws of the State of Maharashtra.
- 11.2 The Parties agree to submit to the exclusive jurisdiction of the High Courts of Solapur any dispute or matter arising out of or in relation to this Agreement.

IN WITNESS WHEREOF the Parties have affixed their seals the day and date first hereinbefore written.

**ANNEXURE 1 TO SCHEDULE VII – FORM OF DIRECT AGREEMENT STEP-IN-
UNDERTAKING**

From: The Lenders

To: SMC

We refer to the Direct Agreement dated [] between SMC, [the Agent] on behalf of the Lenders and [the Contractor] (the “**Direct Agreement**”). We hereby undertake:

1. to pay SMC within thirty (30) days of demand by SMC any sum due and payable by but unpaid by the Contractor to SMC under the EPC prior to the date of issue of this Step-In Undertaking;
2. to pay to SMC, in accordance with the terms of the EPC, any sum which becomes due and payable by the Contractor under the EPC during the Step-In Period; and
3. to procure the performance and discharge, in accordance with the terms of the EPC, of any and all obligations and liabilities of the Contractor under the EPC which have arisen and have not been performed or discharged by the Contractor prior to the date of this Step-In Undertaking and any and all obligations and liabilities of the Contractor under the EPC which arise during the Step-In Period.

This Step-In Undertaking constitutes our unconditional and irrevocable undertaking to SMC subject to the terms of the Direct Agreement and may not be withdrawn, varied or revoked other than in accordance with the Direct Agreement.

SCHEDULE VIII – UNIT RATES FOR INFRASTRUCTURE DEVELOPMENT WORKS

To be finalized post negotiations with the Successful Bidder