



कोचिन पत्तन प्राधिकरण
Cochin Port Authority

**New Administrative Building,
Willingdon Island, Cochin-682009, Kerala**

Tel: 0484-2666639, 2582300, 2582305

Fax: 0484-2666639

E mail : cme@cochinport.gov.in

Website: www.cochinport.gov.in

E-TENDER DOCUMENT

For

**Request for Selection (RFS) of Bidders for the
Implementation of 1.5 MWp Grid connected Floating Solar PV Project at
Willingdon Island, Cochin Port Authority including Operation and Maintenance
for 25 years under RESCO model**

TABLE OF CONTENTS

DESCRIPTION	PAGE NO.
SECTION - I : Invitation for Bids (IFB)	4 -11
SECTION - II : Instructions to Bidders (ITB)	12 -42
SECTION - III : Qualifying Requirements (QR)	43-44
SECTION - IV : Definitions of Terms	45-49
SECTION - V : Bid Evaluation and Selection of Projects	50-53
SECTION - VI : Other Provisions	54-55
SECTION - VII : Sample Forms & Formats for Bid Submission	56-94
ANNEXURE - A : Technical Requirements for Grid Connected Floating Solar Power Projects	95-117
ANNEXURE - B : Check List for Bank Guarantees	118
ANNEXURE - C : List of Banks	119-120
ANNEXURE - D : Special Instructions to Bidders for e- Tendering and Reverse Auction	121-122
ANNEXURE - E : Terms & Conditions of Reverse Auction	123-125
ANNEXURE - F : Guidelines issued by Govt. of Kerala for the installation of Solar Energy system	126-129

DISCLAIMER

Though adequate care has been taken while preparing the RFS document, the bidder(s) shall satisfy themselves that the document is complete in all respects. Intimation regarding any discrepancy shall be given to the office of Employer /Owner immediately. If no intimation is received from any bidder on or before the Pre bid meeting , it will be considered that the document is complete in all respects and has been received/ acknowledged by the bidder(s).

Cochin Port Authority (CoPA) reserves the right to modify, amend or supplement this document.

While this RfS document has been prepared in good faith, neither Cochin Port Authority nor their employees or advisors make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein , or the accuracy, completeness or reliability of information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this document, even if any loss or damage is caused by any actor omission on their part.

Place: Kochi

Date:05/05/2023

SECTION-I
INVITATION FOR BIDS (IFB)

FOR

Selection of Solar Power Developers for “Implementation of 1.5 MWp Grid connected Floating Solar PV Project at Willingdon Island, Cochin Port Authority, including Operation and Maintenance for 25 years under RESCO model”

The tender is invited under two cover system from the experienced **Solar Power Developers** (here in after referred as SPD under RESCO model) through Government e-market place (the GeM portal. For submitting the e-tender, the prospective bidders willing to participate in this tender are required to get registered with Government e Market place (GeM). Tender timeline is available in the BID INFORMATION SHEET given in the tender document.

(SINGLE STAGE TWO COVER BIDDING)
under e-Tendering mode through GeM

- 1.0 Cochin Port Authority, Cochin (formerly Cochin Port Trust), a Body Corporate under the Major Port Authorities Act, 2021, (hereinafter called “CoPA”) is an Autonomous body under the Ministry of Ports, Shipping and Waterways (MoP,S&W). Cochin Port Authority has to comply with the Ministry’s directions in implementing and facilitating Green Port Initiative for development, and promotion of solar energy technology. Moreover CoPA is a Deemed Distribution Licensee for electricity in Port area at W. Island and Vallarpadam & Puthuvypin as per Electricity Act 2003. CoPA has to comply with the Renewable Power Obligations in accordance with KSERC (Renewable Energy and Net Metering Regulations) 2020/ 2022.
- 2.0 Ministry of Ports, Shipping and Waterways (MoP,S&W) under the **Maritime India Vision 2030** (MIV 2030) has set a target of achieving 60% of total power requirement in Major Ports through renewable energy by the year 2030 and in accordance with that , Cochin Port Authority (CoPA) wishes to invite proposals for setting up of grid connected Floating Solar Power Projects to be installed in the Backwaters near CoPA’s Walkway Avenue between BOT Junction and Kannangatt bridge at W/Island, Cochin, Kerala, under RESCO model for an aggregate capacity of 1.5 MWp. Cochin Port Authority (CoPA) shall enter into Power Purchase Agreement (PPA) with the Solar Power Developer within 90 (ninety) days from the date of LoA or within one month from the date of approval of PPA by KSERC.

3.0 PUBLIC PROCUREMENT POLICY:

Ministry of New & Renewable Energy (MNRE) Order No 283/22/2019-Grid Solar Dated 23rd Sep 2020 for the Public Procurement (Preference to Make In India) including any amendments thereto, so as to Provide Purchase Preference (linked with local content) with respect to Renewable Energy (RE) Sector & Department for promotion of Industry and Internal Trade (DPIIT) Notification No. P-45021/2/2017-PP (BE-LI) dated 4th June, 2020 including any amendments, the procurement of Solar Modules & Solar Cells for the subject tender will be supplied through Class I Local Suppliers only. A Class-I local supplier' means a Supplier or Service Provider, whose Goods, Services or

works offered for Procurement, has Local Content equal to or more than 50%, as defined under the above said orders.

4.0 APPROVED LIST OF MODELS & MANUFACTURES:

The provisions as contained in the O.M. dated 05/04/2022 issued by MNRE on the subject "Approved Models and Manufacturers of Solar Photovoltaic Modules (requirement of compulsory registration) Order, 2019-Implementation-Reg." and its subsequent amendments and clarifications, shall be applicable for this tender. The Cells and Modules used in this tender shall be sourced only from the Models and Manufacturers included in the List-I (Solar PV Modules) of ALMM Order, Annexure-I of the OM, issued by MNRE on 05/04/2022 which will be updated by MNRE from time to time. (Latest revision Dtd 24/04/2023). The modules to be supplied under this tender, shall be from the List-I of the ALMM order applicable on the date of invoicing of such modules. Bidders shall also provide a disclosure regarding that they are aware of binding provisions of the ALMM order and the list(s) thereunder, while quoting for the tender.

5.0 OVERVIEW OF THE RfS

Solar Power Developer (herein after referred to as SPD) selected by CoPA based on this RfS, shall conduct Site Survey, Design, obtain Statutory Approvals, Engineering, Manufacture, Supply, Storage, Civil work, Erection, obtain CEA approval, Testing & Commissioning of 1.5 MWp Grid Connected Floating Solar PV Project in the Backwaters near CoPA's Walkway Avenue between BOT junction and Kannangatt bridge at W/Island, Cochin Port Authority, Kerala, generated Power Transmission to 11kV grid of Port's 110kV substation at Willingdon Island, including Operation & Maintenance (O & M) of the project for a period of 25 (Twenty Five) Years under RESCO Model after Operational Acceptance" in accordance with the provisions of this RfS document and Power Purchase Agreement (PPA).

6.0 The Cochin Port Authority (CoPA) shall enter into PPA with selected SPD within 90 (ninety) days from the date of LoA or within one month from the date of approval of PPA by KSERC, for a period of 25 years from the date of commercial operation of the project. The maximum tariff payable to the Project Developer will be fixed/approved by the KSERC after the bidding process. The Bidders will be free to avail fiscal incentives like Accelerated Depreciation, Concessional Customs and Excise Duties, Tax Holidays if available and at the responsibility of SPDs and the bidders shall note that the concessions in the duties cannot be claimed as a right for increase in tariff later on and whatever tariff quoted and approved by KSERC will be final. The tariff quoted by the bidder will be **provisional** and subject to change and Cochin Port Authority shall conduct Reverse Auction among the Pre qualified Bidders and the tariff approved by the Kerala State Regulatory Commission (KSERC) will be Final and accepted.

7.0 Bidders shall submit their bid by offering a single tariff which shall be applicable during the entire operation and maintenance period of 25 years. There shall not be any upward revision in the approved tariff.

8.0 No transfer or selling of the plant to the third party is allowed during PPA period without the consent of CoPA and without remittance of necessary fees to CoPA as applicable. If the

Project is transferred or sold to a third party during its tenure after commercial operation, CoPA reserves the full right to operate the Solar plant with the other SPD at its discretion.

9.0 SELECTION OF TECHNOLOGY & ELIGIBLE PROJECTS UNDER THIS RFS

The Projects to be selected under this RfS for aggregate capacity of 1.5MWp for implementation of Floating Solar PV Projects and are to be installed in the Backwaters near the CoPA's Walk way Avenue between BOT junction and Kannangatt Bridge at W/Island, Kochi, Kerala, India. The selection of solar PV modules should be of the latest technology prevailing in the market and as detailed at Condition No 5.0 above.

10.0 GENERAL

The Invitation for Bids is open to all eligible bidders meeting the Minimum Qualification Criteria. The complete RfS Documents are available in the GeM portal [www.gem.gov.in /](http://www.gem.gov.in/), and the CoPA website www.cochinport.gov.in as well as in the Central Public Procurement Portal of Govt. of India, www.eprocure.gov.in . Interested bidders shall download the RfS Documents from these portals as per the provisions available therein. Tenders attaching all documents shall be submitted through GeM portal strictly in accordance with the instructions to bidders (ITB), terms and conditions of the tender document, before the tender submission time mentioned in the tender.

11.0 Interested bidders have to necessarily register themselves in the GeM portal to participate in the tender. For proper uploading of the bids on the portal namely [www.gem.gov.in /](http://www.gem.gov.in/) (hereinafter referred to as the 'portal'), it shall be the sole responsibility of the bidders to appraise themselves adequately regarding all the relevant procedures and provisions as detailed in the portal as well as by contacting GeM, through e-mail to :helpdesk-gem@gov.in or call on Toll Free Numbers (Inbound):1-1800-419-3436/1-1800-102-3436 (9:00am-6:00 pm Mon to Sat) Help Desk Outbound No's: +911244875125 & +917556685120, as and when required, contact details are also mentioned on the Bid Information Sheet. The Employer in no case will be responsible for any issues related to timely or properly uploading/submission of the bid in accordance with the relevant provisions of Section II - ITB of the Bidding Documents.

12.0 A Single Stage Two Cover Bidding Procedure with Earnest Money Deposit (EMD) will be adopted and will proceed as detailed in the RfS Documents.

13.0 Bidders should submit their bid proposal online complete in all aspects on or before last date and time of Bid Submission as mentioned on Portal of GeM(www.gem.gov.in)and as indicated in the Bid Information Sheet.

(i) Bidder shall submit bid proposal along with Earnest Money Deposit (EMD), complete in all respects as per the Bid Information Sheet. Techno-Commercial bids will be opened online in the GeM Portal. Bid proposals received without the prescribed Earnest Money Deposit (EMD)/Documents for exemption of EMD will be considered as non-responsive. **In the event of any date indicated is a declared Holiday, the tender will be opened on the next working day.**

(ii) Bank details of Cochin Port Authority are as follows: Bank details of Cochin Port Authority are as follows for online payment of EMD: State Bank of India, Cochin Port Authority Branch,

Bank Branch MICR code: 682002021, IFSC Code: SBIN0006367, Cochin Port Authority General Reserve Fund (GRF), Savings Bank Account No. 41401802288.

(iii) Exemption from the payment of EMD and Cost of Tender document shall be given to Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) or are registered with the Central Purchase Organization or the concerned Ministry or Department as provided in GFR 2017.

14.0 RfS documents which include Eligibility Criteria, Technical Specifications, various Conditions of Contract, Formats etc. can be downloaded from GEM Portal (www.gem.gov.in) or from CoPA website (www.cochinport.gov.in) or Central Public Procurement Portal of Govt. of India, www.eprocure.gov.in. Any amendment(s)/ corrigendum(s)/ clarification(s) with respect to this RfS shall be uploaded on the above mentioned websites only and no intimation will be sent to the individual bidders. The Bidder should regularly check for any Amendment(s)/ Corrigendum(s)/ Clarification(s) on the above mentioned websites.

15.0 The detailed Qualifying Requirements (QR) are given in Section-III of the RfS.

16.0 CoPA shall conduct Reverse Auction, as per provisions of RfS documents.

17.0 The bidders have to execute an "Integrity Pact" (IP) as per the format available in the CoPA's website www.cochinport.gov.in. The Tenderer should sign and upload the "Integrity Pact" duly signed in all the pages duly affixing the firm's seal.

18.0 The Independent External Monitors (IEM) for Cochin Port are as follows:

- 1) Shri. M J Joseph, ICAS (Rtd.)
37, Da Costa Square
3rd Cross, Cooke Town
Bangalore - 560 084
Email: joseph.iem@cochinport.gov.in
- 2) Shri. Punati Sridhar, IFoS(Retd)
8C, Block -4, 14-C Cross,
MCHS Colony, HSR 6th Sector,
Bangalore -560102
Email ID :sridhar.iem@ cochinport.gov.in

19.0 The bidder should not have been blacklisted or debarred by any Central/ State Government Agency of Central/State Government/Public Sector Undertaking/ Regulatory Authority of India at the time of submission of this bid.

20.0 CoPA reserves the right to cancel/ withdraw this invitation for bids without assigning any reason and shall have no liability what so ever consequent upon such a decision.

21.0 Electrical works should be carried out through a licensed Electrical contractor since clearance has to be obtained from the Central Electricity Authority (CEA). The Electrical contractor engaged by the SPD shall hold valid "A-Class" license. A copy of the license shall be submitted along with tender or furnish an undertaking that the SPD shall tie-up with a contractor having A class Electrical license in the case of award contract.

22.0 All the statutory clearances shall be obtained for setting up of the Floating solar plant in the water body.

INTERPRETATIONS

1. Words comprising the singular shall include the plural & vice versa.
2. An applicable law shall be construed as reference to such applicable law including its amendments or re-enactments from time to time.
3. A time of day shall save as otherwise provided in any agreement or documents construed as a reference to Indian Standard Time.
4. Different parts of this contract are to be taken as mutually explanatory and supplementary to each other and if there is any differentiation between or among the parts of this contract, they shall be interpreted in a harmonious manner so as to give effect to each part.
5. The table of contents and any headings or sub headings in the contract has been inserted for case of reference only & shall not affect the interpretation of this agreement.

BID INFORMATION SHEET

The brief details of the RfS are as under:

A	RfS NO. & DATE	GEM/2023/B/... dated 05/05/2023
B	Document Description	Implementation of 1.5MWp grid connected floating solar PV power plant for Cochin Port Authority under RESCO model.
C	NAME OF WORK/ BRIEF SCOPE OF WORK/ JOB	Selection of Solar Power Developer as per the approval of KSERC for the Site Survey, Design, Engineering, Manufacture, Supply, Storage, Civil work, Erection, TPIA inspection, Central Electricity Authority approval, Testing and Commissioning of 1.5MWp Grid Connected Floating Solar PV Project in the Backwaters near CoPA's Walkway Avenue between BOT Junction and Kannangatt bridge at Willingdon Island, Cochin, Kerala and interconnect solar power to the Port's 11kV grid at 110kV substation of CoPA at Willingdon Island, including SCADA, Operation & Maintenance (O & M) of the project for a period of 25 (Twenty Five) Years under RESCO Model, after Operational Acceptance, subject to obtaining KSERC approval for the tariff quoted by the lowest bidder after Reverse Auction and for the PPA.
D	ESTIMATED VALUE	Rs.6,25,50,000/- (Rupees Six Crore Twenty five Lakh Fifty Thousand only). As per the estimated cost of the project, the SPD has to provide at his cost, 11kV switchgears, transformers, transmission UG cables of approx. 3.5km long, metering and protection devices, SCADA facility etc., as per standards and interconnect solar power to the Port's 11kV grid at 110kV substation.
E	TYPE OF BIDDING SYSTEM	E-TENDER through GeM portal (www.gem.gov.in)
F	TYPE OF RfS/ TENDER	Single stage 2 cover system with EMD
G	COMPLETION/ CONTRACT PERIOD	12 months from the date of signing of PPA as per Clause No. 15, Section-II, Instructions to Bidders (ITB) of RfS
H	BID PROCESSING FEE (Tender document Cost)	Not applicable since bidding is through GeM
I	Bid Bond / EARNEST MONEY DEPOSIT (EMD)	Amount: 2% of the Estimated cost, i.e. Rs.12,51,000/- (Rupees Twelve lakh fifty one thousand only) (EMD shall be furnished in the form of Account Payee Demand Draft, Fixed Deposit Receipt, /Banker's Cheque or Bank Guarantee from any of the Commercial Banks, in favour of "FA&CAO, Cochin Port Authority", payable at Cochin or online payment in an acceptable form safeguarding the purchaser's interest in all respects. Exemption shall be granted on submission of NSIC/ MSME/ UAM certificates.)

J	PERFORMANCE BANK GUARANTEE (Security Deposit)	As per Tender Document (Security Deposit shall be furnished in the form of Account payee demand draft, Fixed deposit Receipt from a Commercial bank, Bank Guarantee from a commercial bank in favour of "FA&CAO, Cochin Port Authority" payable at Cochin or online payment in an acceptable form safeguarding the purchaser's interest in all respects.
K	DATE, TIME & VENUE OF PRE-BID MEETING	18/05/2023 at 11 am through Video Conferencing.
L	ONLINE BID-SUBMISSION DEADLINE DATE	29/05/2023 at 3.00pm.
M	TECHNO-COMMERCIAL BID OPENING	As per NIT on GEM portal, at the Office of the Chief Mechanical Engineer, 1st Floor, New Administrative Building, Cochin Port Authority, Cochin 9.
N	PRICE BID OPENING	Date and time will be informed later to the eligible bidders.
O	CONTACT DETAILS OF GEM	Mail at: helpdesk-gem@gov.in
P	NAME, DESIGNATION, ADDRESS AND OTHER DETAILS (FOR SUBMISSION OF RESPONSE TO RFS)	The Chief Mechanical Engineer, Cochin Port Authority, 1st floor, New Administrative Building, W/Island, Kochi-9 Tel. 0484-2666639, 2582300, 2582305 Fax:- 0484-2666639 Email : cme@cochinport.gov.in
Q	DETAILS OF PERSONS TO BE CONTACTED IN CASE OF ANY ASSISTANCE REQUIRED	<ol style="list-style-type: none"> 1. Shri. V. Thuraipandian, CME Ph: 0484-2666639, 2582300 2. Shri. Ajithkumar D.,EE (Ele)P Ph: 0484-2582320 3. Sri. Ajayakumar R.S., EE(Ele.)DO Ph: 0484-2582305/07

Note:

1. Bids must be submitted strictly in accordance with Section-II, Instructions to Bidders (ITB) depending upon Type of Tender as mentioned at Clause no. (D) of Bid Information Sheet. The ITB is an integral part of the RfS document.
2. Any bidder, who meets the Qualifying Requirement and wishes to quote against this RfS, may download the complete RfS document along with its amendment(s) if any from the Portal of GEM (www.gem.gov.in) and/ or CoPA website (www.cochinport.gov.in) or Central Public Procurement Portal of Govt. of India www.eprocure.gov.in and submit their Bid complete in all respects as per terms & conditions of RfS Document on or before the due date of bid submission. Clarification(s)/ Corrigendum(s) if any shall also be available on above referred websites.
3. Prospective Bidders are requested to remain updated for any amendment(s)/ corrigendum(s)/ clarification(s) etc. to the RfS document through the website www.gem.gov.in. No separate intimation will be sent to the individual bidders. Intimation regarding notification on the above shall be updated on www.cochinport.gov.in, www.gem.gov.in. as well as on Central Public Procurement Portal of Govt. of India, www.eprocure.gov.in.

SECTION - II

INSTRUCTIONS TO BIDDERS (ITB)

TABLE OF CONTENTS

1. OBTAINING RfS DOCUMENTS
2. COST OF DOCUMENTS/ PROCESSING FEE
3. TOTAL CAPACITY OFFERED
4. PROJECT LOCATION
5. PROJECT SCOPE & TECHNOLOGY SELECTION
6. MAXIMUM ELIGIBILITY FOR PROJECT CAPACITY ALLOCATION FOR A BIDDER
7. CONNECTIVITY WITH THE GRID
8. POWER GENERATION BY SOLAR POWER DEVELOPER
CRITERIA FOR GENERATION
SHORTFALL IN GENERATION
EXCESS GENERATION
OFFTAKE CONSTRAINTS DUE TO TRANSMISSION INFRASTRUCTURE/ GRID
UNAVAILABILITY & BACKDOWN
9. CLEARANCES REQUIRED FROM THE STATE GOVERNMENT AND OTHER LOCAL BODIES
10. EARNEST MONEY DEPOSIT (EMD)
11. PERFORMANCE BANK GUARANTEE (PBG)
12. FORFEITURE OF EMD
13. POWER PURCHASE AGREEMENT (PPA)
14. FINANCIAL CLOSURE OR PROJECT FINANCING ARRANGEMENTS
15. COMMISSIONING
PART COMMISSIONING
COMMISSIONING SCHEDULE AND LIQUIDATED DAMAGE FOR DELAY IN
COMMISSIONING
EARLY COMMISSIONING
16. COMMERCIAL OPERATION DATE (COD)
17. MINIMUM PAID UP SHARE CAPITAL TO BE HELD BY PROJECT PROMOTER
18. STRUCTURING OF THE BID SELECTION PROCESS
19. INSTRUCTIONS TO BIDDERS FOR STRUCTURING OF BID PROPOSALS IN RESPONSE TO RfS
20. IMPORTANT NOTES AND INSTRUCTIONS TO BIDDERS
21. VALIDITY OF THE RESPONSE TO RfS
22. BID PREPARATION COST

23. CLARIFICATIONS/ PRE BID MEETING/ ENQUIRIES/ AMENDMENTS
24. RIGHT OF COPA TO REJECT A BID
25. POST AWARD COMPLIANCES
26. OWNERSHIP OF THE PLANT AFTER 25 YEARS
27. APPLICABLE LAW
28. SETTLEMENT OF DISPUTE
29. FORCE MAJEURE
30. OTHER CONDITIONS
31. CONDITIONS FOR BID SUBMISSION BY JV
32. PRE CONTRACT INTEGRITY PACT

Preamble

This part (Section - II) of the RfS Documents provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Employer. It also provides information on bid submission and uploading the bid on GeM portal (<https://gem.gov.in/>), bid opening, evaluation and onward of contract. This Section (Section II) contains provisions that are to be used unchanged unless consists of provisions that supplement, amend, or specify in detail, information or requirements included in RfS and that are specific to each procurement, states otherwise.

Bidders may note that the respective rights of the Employer/ Owner and Bidders/ Contractors shall be governed by the RfS Documents/ Contracts signed between the Employer/ Owner and the Contractor for the respective package(s). The provisions of RfS Documents shall always prevail over any other documents in case of contradiction.

Further in all matters arising out of the provisions of this Section - II and the RfS Documents, the laws of the Union of India shall be the governing laws and courts of Kochi shall have exclusive jurisdiction.

1. OBTAINING RfS DOCUMENTS

The RfS document can be downloaded from the Portal of GEM (www.gem.gov.in). The same is also available at www.cochinport.gov.in and Central Public Procurement Portal of Govt. of India, www.eprocure.gov.in.

Note: Interested Bidders have to download the official copy of RfS & other documents through registering in the GeM portal. The Bidder shall be eligible to submit/upload the bid only after obtaining approval in the respective service category and ample time shall be provided in anticipation to the process.

2. COST OF DOCUMENTS/ PROCESSING FEE

The Bid Processing Fee / Cost of RfS is not applicable since bidding is through GeM.

Bidders who are registered with MSME/ NSIC/UAM under the Ministry of MSME and as per MSE procurement policy, Micro and Small Enterprises shall be eligible for exemption of EMD. The scanned copy of the above mentioned certificate shall be uploaded in the GeM Portal along with the Technical bid.

3. TOTAL CAPACITY OFFERED

- (a) Selection of Grid Connected Floating Solar Power Projects for total capacity of grid connected 1.5MWp (A.C.) shall be of any of the following sizes:
- (b) The project site shall be either a single module of 750 Mtrs long along the canal shore with 20 Mtrs. width towards water body (Total area 15000 Sqmtr) or 2 segments on both sides of small culvert each having 375 Mtrs long on both sides with 20 Metres towards water body and so on.
- (c) The Project comprises "Selection of Solar Power Developer for the Site Survey, obtaining Statutory Approvals, PPA approval from KSERC, Design, Engineering, Manufacture, Supply, Storage, Civil work, Erection, CEA approval, Testing and Commissioning of 1.5MWp Grid Connected Floating Solar PV Project, in the Backwaters near CoPA's Walkway Avenue between BOT junction and Kannangatt bridge at Willingdon Island, Cochin, Kerala, Transmission of solar Power upto 11kV grid of Port's 110kV main receiving substation at Willingdon Island,. The

Project to be selected under this RfS including Operation & Maintenance (O & M) of the project for a period of 25 (Twenty Five) Years under RESCO Model after Operational Acceptance.”

- (d) CoPA's Power purchase agreement with M/s KSEBL is for 6.5 MVA at 110kV level in Bulk supply tariff at W.Island. Average monthly consumption of CoPA is 21 lakh units at W. Island. As per the Order of the Hon'ble KSERC dated 25/04/2023, the Commission has permitted CoPA to export the surplus energy during any time block to KSEB Ltd' Grid.
- (e) The interested Bidders are required to participate in the Request for Selection (RfS) for installation of Grid Connected Floating Solar Photovoltaic Power Plants on RESCO Model.
- (f) The bidder shall supply and lay 11 kV cables, supply and install necessary switchgears including VCB panels compatible to interface with SCADA to connect the solar plant to the 11 kV grid of Cochin Port at 110 kV substation with necessary switchgears/ VCB panels, necessary protection relays, monitoring panels, metering arrangement etc. Any modifications of existing 11kV grid for enabling the connectivity is under contractor's scope. The bidder should ensure 1.5MWp at 11kV as per the standards. At the 11kV side, the AC output shall be 1.5MWp at standard test conditions. The SPD shall provide the connectivity at 110kV substation by providing suitable inverter transformers, 11kV cables, 11KV switch gears, metering equipments including meters (both solar meter and grid meter) etc and the SPD shall make all arrangements so that the power generated from the solar power project shall be brought to the existing 110kV substation of Cochin Port Authority, which is about 3.5km away from the substation at A2 area, complying with Central Electricity Authority Regulations relating to Construction Standards, Technical Standards, Safety Regulations, Grid Connectivity and Communication and State Load Dispatch Centre (SLDC) norms. The SPD shall submit the bid considering the cost for all the above items. The metering shall be done in accordance with CEA Metering regulations /KSERC regulation/ KSEBL rules in the 11kV side through bidirectional meter 110kV substation with necessary switchgears/ Panels and solar meter at solar plant premises. In connection with the Project work, CoPA shall assist the SPD for getting statutory approvals from the statutory bodies. The documentation required for statutory approval and charges shall be done by the SPD.

The SPDs shall demonstrate the Contracted Capacity at the Interconnection Point, as defined in the Commissioning Procedure enclosed in Annexure-A and Appendix-A-1.

The Cochin Port Authority at its discretion reserves the right to request the Solar Power Developer (SPD) selected through Tender process to install additional capacity of 25% over the present requirement of 1.5 MWp Floating Solar project if the levelized tariff approved by the KSERC and accepted by the Successful Bidder is found reasonable compared to the Bench mark price for the Kerala Region as may be decided by KSERC and based on the performance of the Solar PV Plant for a period of one year. ie if the Cochin Port wants to install the Additional capacity Grid connected Floating Solar PV Project of a further capacity of 0.375 MWp, the SPD shall carry out the additional capacity plant at the same rates, terms and conditions, subject to KSERC approval. The Bidders are requested to consider the above aspect while quoting the rates for the 1.5 MWp Floating Solar project in this Tender.

PROJECT CONFIGURATION

The term "Project" shall have the meaning as defined in Section IV of the RfS, and shall refer to the cumulative Project capacity as quoted by/awarded to the Bidder.

The Bidder may however, set up the cumulative Project capacity at a single location, or he may configure the "Project" as being sub-divided into two numbers of "Packages", being set up at multiple locations as approved by the Cochin Port Authority with due consideration of the following factors.

A single tariff shall be quoted by the Bidder for the entire Project, irrespective of the Project configuration and the tariff quoted is subject to approval by KSERC and shall be binding on the SPD. The tariff shall include all the costs related to Scope of Work. Bidder shall quote for the entire facilities on a "single responsibility" basis such that the total Bid Price covers all the obligations mentioned in the Bidding Documents in respect of Design, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance for a period 25 years under RESCO model, goods and services including spares required if any during O&M period. The Bidder has to take all permits, approvals and licenses, Insurance etc., provide training and such other items and services required to complete the scope of work mentioned above.

- a) Power Purchase Agreement shall be executed within 90 days from the date of LOA or within 30 days from the approval of KSERC. PPA shall be executed after approval of the Hon'ble Kerala State Electricity Regulatory Commission.
- b) The entire Project shall have a single Effective Date of the PPA and single milestones for achieving Financial Closure and Commissioning, irrespective of the configuration of the Packages.

4. PROJECT LOCATION

The solar PV project is planned to be implemented in the Edakochi Kayal portion of Vembanad Lake, in between the BOT Bridge and Kannaghat bridge adjacent to CoPA's Walkway Avenue in Willingdon Island (Figure-1) which is approx. 3.5km from the Port's main 110kV receiving station, and is anticipated to cover a water area of 20,000 m² in tidal-influenced Edakochi Kayal, it ensures the free flow of tidal water and the survey no. for the water body is 1166/1 of Rameswaram Village of Kochi Taluk. The ownership of the said survey no. is vested with Cochin Port Authority. The Northern side of the solar installation is the CoPT Avenue Walkway and the width of the water body is approx. 480m at this location. The mean Lower low water and mean higher high water heights are 0.3m and 1.2 m respectively.

The SPD shall provide at his cost, required 11KV switch gears, transformers, transmission U.G cables, metering & Protection Devices, SCADA facility etc. as per standards and interconnect solar power to the Port's grid at 110kV substation. The project site shall be either a single module of 750 Mtrs long along the canal shore with 20 Mtrs width towards water body (Total area 15000 Sqmtr) or 2 segments on both sides of small culvert each having 375 Mtrs long on both sides with 20 Metres towards water body and so on.

A substantial portion of proposed location on either side of the culvert is covered through mangroves. Further the water body area near to the reclamation wall is currently very shallow and slushy for about 100 Mtr.

There is no lease or license will be levied by the Cochin Port Authority, being the project is for the self consumption, i.e., Cochin Port's own project.

The geographic location of the backwaters of CoPA Walkway is as follows:

Latitude:0955.7N Longitude:07616.6E

Location: <https://maps.google.com/?q=9.930979,76.279625>; Edakochi Kayal (Kochi, Kerala, India): <https://maps.google.com/?q=9.929129,76.277534> ; NH966B(NH966B, Kochi682006, Kerala, India):<https://maps.google.com/?q=9.928128,76.285858>.

Quality parameters of water at the site is Saline.

Site survey, Bathymetric study, water body characteristics, geo-technical investigations (on shore/off shore) etc., water properties (such as TDS content etc), depth of reservoir (Full Reservoir Level (FRL), Minimum Drawdown level (MDDL), Dead Storage level etc.), variation in the depth of water reservoir, water flow rate / current, climatic conditions have to be carried out after award of contract.

5. PROJECT SCOPE & TECHNOLOGY SELECTION

Under this RfS, the SPD shall set up Floating Solar Power Project(s), including the transmission and necessary infrastructure upto the Interconnection/Delivery Point in line with Clause No.7, Section-II, ITB, at its own cost and in accordance to the provisions of this RfS document. All approvals, permits and clearances required for setting up of the Project including those required from State Government and local bodies shall be in the scope of the SPD. The SPD appointed shall obtain necessary CRZ clearance for the project from the concerned authorities like NCESS and KCZMA i.e Environmental clearance/Approval from statutory bodies and the Clearance from Pollution Control Board and other statutory bodies. All the expenses for obtaining the statutory clearances shall be borne by the SPD.

The SPD shall be required to follow the applicable rules regarding project registration with the Regulatory bodies, as required, in line with the provisions of the applicable policies/ regulations of the State. It shall be the responsibility of the SPD to remain updated about the applicable charges payable to the Regulatory bodies under the State Solar Policy.

6. MAXIMUM ELIGIBILITY FOR PROJECT CAPACITY ALLOCATION FOR A BIDDER

Following conditions shall be applicable to the Bidders for submission of bids against this RfS:

- (i) A Bidder including its Parent, Affiliate or Ultimate Parent or any Group Company can submit only a single bid for the project in the prescribed formats as detailed in Clause No.20, Section-II, ITB, giving details of the Projects.
- (ii) The evaluation of bids shall be carried out as described in Section-V of RfS. The methodology for allocation of Projects is elaborated in Section-V of RfS.

7. CONNECTIVITY WITH THE GRID

The Project should be designed for interconnection with the 11kV grid at CoPA's 110kV main receiving substation in accordance with the prevailing CEA /KSERC regulations/ SLDC norms. For interconnection with the grid and metering, the SPD shall abide by the applicable Grid Code, Grid Connectivity Standards, Metering Regulations, Communication Regulations etc. (as amended from time to time) issued by Appropriate Commission and Central Electricity Authority (CEA) and any other statutory body(ies).

The maintenance of Transmission system upto the Inter connection Point shall be the responsibility of the SPD.

The arrangement of connectivity can be made by the SPD through a dedicated transmission cable and 11 KV switch gears at their cost. The entire cost of transmission including cost of laying of cable, SLDC/ Scheduling charges, Security, MOC (Maintenance Operational Check), losses etc., if required and any other charges from the Project up to the Interconnection Point shall be borne by the SPD. The meters for the project at the interconnecting point at 11kV panel at 110 kV substation shall be sealed by CoPA.

Reactive power charges as per CERC/KSERC regulations shall be payable by SPD as per provisions of PPA.

Metering arrangement of project shall have to be adhered to in line with relevant clause of the PPA.

The Buying Utility (CoPA) will not be responsible for all transmission charges, reactive compensation charges of grid, losses and any other charges as applicable under the respective regulations / KSERC tariff orders for the 1.5 MWp solar power generation. The above charges shall be payable by the SPD.

8. POWER GENERATION BY SOLAR POWER DEVELOPER

Criteria For Generation

The Bidders shall declare the annual CUF (Capacity Utilization Factor) of the Project at the time of submission of response to RfS. The annual Capacity Utilization Factor of Solar PV project shall be 28% as per the KSERC orders dated 25/04/2023.

The declared annual CUF shall in no case be less than 28%. The successful bidder shall be required to meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) during the O&M period of 25 years. It shall be the responsibility of the SPD, entirely at its cost and expense to install such number of Solar panels and associated equipment as may be necessary to achieve the required CUF, and for this purpose SPD shall make its own study and investigation of the GHI (Global Horizontal Irradiance) and other factors prevalent in the area which have implication on the quantum of generation. SPD shall maintain generation so as to achieve annual CUF of 28% till the end of 25 years from COD (Commercial Operation Date). The annual CUF will be calculated every year from 1st April of the year to 31st March next year. The CUF for the period between COD/commencing date upto 1st April (if any) and 31st March upto final closing date (if any) shall be calculated on pro-rata basis.

Shortfall In Generation

1. If for any Contract Year, it is found that the SPD has not been able to generate minimum energy corresponding to the value of annual CUF declared in the PPA, on account of reasons solely attributable to the SPD, such shortfall in performance shall make the SPD liable to pay the compensation provided in the PPA (Power Purchase Agreement) to CoPA towards non-meeting of RPOs, if such compensation is ordered by the KSERC. The amount of compensation shall be equal to the compensation payable (including RECs (Renewable Energy Certificate)) by the CoPA.
2. In case of shortfall in generation, the SPD shall provide necessary additional panels

and arrangements for generating the required capacity as per the PPA. However, this compensation shall not be applicable in events of Force Majeure identified under the PPA, affecting supply of solar power by SPD.

Excess Generation

While the SPD would be free to install DC solar field as per his design of required output, including his requirement of auxiliary consumption, he will not be allowed to sell any excess power to any other entity other than CoPA.

In case at any point of time, the peak of capacity reached is higher than the rated capacity and causes disturbance in the system at the point where power is injected, the SPD will have to forego the excess generation and reduce the output to the rated capacity to ensure compliance with grid requirement. While the SPD would be free to install DC solar field of his design of required output, as per the load data provided by CoPA, including his requirement of auxiliary consumption, he will not be allowed to sell any excess power to any other entity other than buying utility.

OFFTAKE CONSTRAINTS DUE TO TRANSMISSION INFRASTRUCTURE/ GRID UNAVAILABILITY & BACKDOWN

- a) Generation compensation in off take constraints due to Transmission infrastructure not complete/ready (Transmission constraint)

After the scheduled commissioning date, if the Project is ready in all respects including the dedicated transmission line to be established by the SPD to connect to the grid, but the necessary power evacuation/ transmission infrastructure is not ready, for reasons not attributable to the Solar Power Developer, leading to off take constraint, the provision for generation compensation is as follows:

Transmission Constraint	Provision for Generation Compensation
If the plant is ready but the necessary power evacuation/ transmission infrastructure is not ready, leading to off take constraint.	a. The normative CUF of 28% (Twenty Eight Percent) for the period of grid unavailability, shall be taken for the purpose of calculation of generation loss.

However, it is clarified that if the project is ready for commissioning prior to the Scheduled commissioning date, but the off take is constrained because of inadequate/ incomplete power evacuation infrastructure, no compensation shall be permissible.

- b) **Compensation in off take constraint due to Grid Unavailability:**

During the operation of the project, there can be some periods where the project can generate power but due to temporary transmission unavailability the power is not evacuated, for reasons not attributable to the Solar Power Developer. In such cases the generation compensation will be addressed by CoPA.

Duration of Grid unavailability	Provision for Generation Compensation
Grid unavailability in a contract year as defined in the PPA: (only period from 8 am to 6 pm to be counted):	<p>Generation Loss = [(Average Generation per hour during the Contract Year) × (number of hours of grid unavailability during the Contract Year)]</p> <p>Where, Average Generation per hour during the Contract Year (kWh) = Total generation in the Contract Year (kWh) ÷ Total hours of generation in the Contract Year.</p>

c) Off take Constraints due to Back down:

The SPD and CoPA shall follow the forecasting and scheduling process as per the regulations in this regard by the CERC. The Government of India, as per Clause 5.2(u) of the Indian Electricity Grid Code (IEGC), provides for status of “must-run” to solar power projects. Accordingly, no solar power plant, duly commissioned, should be directed to back down by a Discom/ Load Dispatch Centre (LDC). In case such eventuality of Back down arises, including non-dispatch of power due to non-compliance with “Order No. 23/22/2019-R&R dated 28.06.2019 of Ministry of Power regarding Opening and maintaining of adequate Letter of Credit (LC) as Payment Security Mechanism under Power Purchase Agreements by Distribution Licensees” and any clarifications or amendment thereto, except for the cases where the Back down is on account of events like consideration of grid security or safety of any equipment or personnel or other such conditions, the SPD shall be eligible for a Minimum Generation Compensation, from the Procurer, in the manner detailed below.

Duration of Back down	Provision for Generation Compensation
Hours of Backdown during a monthly billing cycle.	<p>Minimum Generation Compensation = 100% of [(Average Generation per hour during the month) × (number of back down hours during the month)]X PPA Tariff</p> <p>Where, Average Generation per hour during the month (kWh) = Total generation in the month (kWh) ÷ Total hours of generation in the month.</p>

The Generation Compensation is to be paid as part of the energy bill for the successive month after receipt of Regional Energy Accounts (REA)/SEA/JMR. No Trading Margin shall be applicable on this Generation Compensation .

9. CLEARANCES REQUIRED FROM THE STATE GOVERNMENT AND OTHER LOCAL BODIES

The Solar Power Developers (SPDs) are required to obtain all the necessary approvals, grid connectivity approval from KSEBL, PPA approval from KSERC, clearances and permits including Environmental Clearance and Connectivity Approval, as required for setting up the Solar Power Projects. All the charges for obtaining such approvals, clearances and permits shall be borne by the SPD only.

The clearances, as applicable for the Project, shall be required to be submitted to CoPA prior to commissioning of the Project. In case of any of the clearances being not applicable for the said Project, the SPD shall submit an undertaking in this regard, and it shall be deemed that the SPD has obtained all the necessary approvals, clearances and permits for establishing and operating the Project. Any consequences contrary to the above shall be the responsibility of the SPD. Any neglect or omission or failure on the part of the bidder in obtaining necessary clearances and reliable information upon the forgoing or any other matter affecting the bid shall not relieve him from any risks or liabilities or the entire responsibility for completion of the work in accordance with the bid.

CoPA shall arrange the connectivity procedures/ Protocol as per technical requirement issued by CEA from time to time. However SPD has to support and provide necessary materials, manpower and shall bear all the expenses in respect to get the connectivity.

10. EARNEST MONEY DEPOSIT (EMD)

All bids must be accompanied by a bid bond (EMD) of an amount equal to **2%** of PAC (Estimated Cost). EMD shall be furnished in the form of Account Payee Demand Draft/ Banker's Cheque/ Fixed Deposit Receipt /Bank Guarantee from a Commercial Bank in favour of "FA&CAO, Cochin Port Authority", payable at Cochin or online payment in an acceptable form safeguarding the purchaser's interest in all respects. The exemption shall be granted as per GFR 2017.

The EMD shall be exempted for MSME Vendors registered under NSIC/ UAM/MSME. In order to avail the exemption in EMD in case of consortium/ JV, all the members should be registered as MSME Vendors under NSIC/ UAM/ MSME Category.

11. PERFORMANCE BANK GUARANTEE (PBG)

Bidders selected by CoPA based on this RfS shall submit Performance Bank Guarantee for a value @ 4% of the Estimated Cost within 21 days of issuance of Letter of Acceptance (LoA) or before signing of PPA, whichever is earlier. It may be noted that successful Bidders shall submit the Performance Bank Guarantee according to the Format 7.3 B for a value @ 4% of the Estimated Cost with a validity period from the date of submission of the PBG until 6 (six) months from the Effective Date of the PPA. On receipt and after successful verification of the Performance Bank Guarantee in the acceptable form, the BG submitted towards EMD shall be returned by CoPA to the successful Bidder. Non-submission of PBG within the above timelines shall be treated as follows:

- a) Delay upto 01 month from due date of submission of PBG: Delay charges @1% of the PBG amount per month levied on per day basis shall be paid by the Bidder to CoPA in addition to the PBG amount.
- b) Delay beyond 01 month from the due date of submission of PBG: The EMD submitted by the Bidder shall be en-cashed by CoPA and the Project shall stand terminated.
- c) For the purpose of calculation of the above delay charges, 'month' shall be considered as a period of 30 days.
- d) The Bidder shall furnish the PBG from any of the Banks listed at Schedule-2 of draft PPA to CoPA. PBG issued by foreign branch of a bank from bank list given in Schedule- 2 of draft PPA is to be endorsed by the Indian branch of the same bank or State Bank of India (SBI).
- e) The format of the Bank Guarantees prescribed in the Formats 7.3 B (PBG) shall be strictly adhered to and any deviation from the above Formats shall result in rejection of the PBG and consequently, the bid. In case of deviations in the formats of the Bank Guarantees, the corresponding PPA shall not be signed.
- f) The successful Bidders of the Projects selected based on this RfS are required to sign PPA with Cochin Port Authority (CoPA) with provision of separate Escrow account within 01 (One) month after the issuance of LOI. In case, CoPA offers to execute the PPA with the Selected Bidder and if the Selected Bidder does not submit the requisite documents as per Clause No. 14, Section-II, Instructions to Bidders (ITB) or does not meet eligibility criteria upon submission of documents or does not execute the PPA within the stipulated time period, then the Bank Guarantee equivalent to the amount of the EMD shall be forfeited by CoPA from the Bank Guarantee available with CoPA (i.e.EMD or PBG) as liquidated damages not amounting to penalty, the selected Project(s) shall stand cancelled and the selected Bidder expressly waives off its rights and objections, if any, in that respect.
- g) The Bank Guarantees have to be executed on non-judicial stamp paper of appropriate value as per Stamp Act relevant to the place of execution.
- h) All expenditure towards execution of Bank Guarantees such as stamp duty etc. shall be borne by the Bidders.
- i) In order to facilitate the Bidders to submit the Bank Guarantee as per the prescribed format and in line with the requirements, checklist at Annexure-B has been attached. Bidders are advised to take note of the above checklist while submitting the Bank Guarantees. After the bidding process is over, COPA shall release the Bank Guarantees towards EMD of the unsuccessful bidders within 30 days after the issuance of LOI to the successful bidder(s).The PBG of successful bidders/ developers/ SPDs shall be returned to them, immediately after successful commissioning of their projects as per Terms of PPA, after taking into account any liquidated damages due to delays in commissioning as per Clause No.15 ,Section-II, Instructions to Bidders (ITB) of RfS documents.

12. FORFEITURE OF EMD

The EMD shall be forfeited by COPA in following cases:

- a) If the Bidder withdraws or varies the bid after due date and time of bid submission and during the validity of bid;
- b) In case, COPA offers to execute the PPA with the Selected Bidder and if the Selected Bidder does not submit the requisite documents Section-II, Instructions to Bidders (ITB) of RfS documents or does not execute the PPA within the stipulated time period;
- c) If after issuance of LOI, it is found that the documents furnished by the Bidder as part of response to RfS are misleading or misrepresented in anyway;
- d) If the Bidder fails to furnish required Performance Bank Guarantee Section-II, Instructions to Bidders(ITB) of RfS document.

13. POWER PURCHASE AGREEMENT (PPA)

Cochin Port Authority (COPA) shall enter into Power Purchase Agreement (PPA) with Bidders selected based on this RfS. A copy of standard Power Purchase Agreement (PPA) to be executed between COPA and the selected SPD will be made available on website of COPA <https://www.cochinport.gov.in>. The PPA shall be signed within 90 days from the date of issuance of LOI, or within 30 days from date of approval of KSERC.

Note: Any changes in the location of the Project(s) awarded shall not be permitted.

The PPAs shall be valid for a period of 25 years from the Scheduled Commissioning Date (SCD) of the Projects.

The Performance Bank Guarantee as per Clause 11 above, shall be submitted by the SPD prior to signing of PPA. Before signing of PPA with the selected Bidder, COPA will verify the documents furnished by the Bidder at the time of submission of response to RfS including the shareholding of the Project Company along with a copy of complete documentary evidence supported with the original documents. Bidders will be required to furnish the documentary evidence for meeting the RfS Qualification Requirement and financial requirements mentioned at Annexure to BDS respectively. At this stage, the Bidders shall be required to furnish the audited balance sheet of the previous month-end along with complete Bank Statement starting from day 1 of submission of response to RfS till date along with a copy of the documents submitted with ROC which became due during this period, along with all the relevant documents filed with MCA for allotment of Shares are required to be submitted at the time of signing of PPA. If at this stage it is found that the documents furnished by the Bidders are false/ misleading or misrepresented in any way then the provisions contained in this RfS will be applicable.

- a. Power Sale Agreements (PSAs) are not applicable for this project.

The SPDs will be free to reconfigure and repower their plants from time to time during the PPA duration. However, CoPA will be obliged to buy power only within the Capacity Utilization Factor (CUF) range laid down in Power Purchase Agreement (PPA) as per guidelines.

14. FINANCIAL CLOSURE OR PROJECT FINANCING ARRANGEMENTS

The SPD shall achieve Financial Closure as early as four months from the date of LOA. At this stage, the SPDs shall report tie-up of Financing Arrangements for the Projects. In this regard, the SPD shall submit a certificate from all financing agencies regarding the tie-up of funds indicated for the Project. Additionally, the SPD shall furnish documentary evidence towards the following:-

- a) The orders placed/agreements entered into, for supply of plants and equipment for the Project.
- b) Detailed Project Report for each Project.
- c) The details of all planned/ proposed Inverters and modules (manufacturer, model number, data sheet, all technical BIS / IEC certificates as mentioned at Annexure- A along with the link of the certifying authority with ILAC member accredited lab/NABL accredited lab) for the Project, at least 15(Fifteen) days prior to the scheduled Financial Closure date.
- d) Copies of all the clearances required for successful execution of the project.

In case of delay in achieving financial closure due to delay not attributable to the SPD, subsequent extension will be given.

The SPD will have to submit the required documents to CoPA at least 15 (Fifteen) days prior to the scheduled Financial Closure date. In case of delay in submission of documents mentioned above, CoPA shall not be liable for delay in verification of documents and subsequent delay in Financial Closure.

In case the SPD submitted all the requisite documents to the concerned authority within 03 (Three) months from the date of execution of PPA and still awaits for clearance by the Statutory authority, then the delay in obtaining the concerned statutory clearance shall not be attributable to the SPD. The SPD need to submit an undertaking stating the reason for delay along with copy of application and the Financial Closure can be done pending that statutory document. However, the SPD needs to submit the pending statutory clearance document prior to commissioning of the project.

15. COMMISSIONING

The Commissioning of the Projects shall be carried out by the SPDs in line with the procedure elaborated in draft PPA document (Commissioning Procedure at Annexure-A and Appendix-A-1 are for reference). The Chief Mechanical Engineer or his representative shall witness and validate the commissioning procedure at site. Prior to the commissioning and on completion of the project, necessary approval for the solar plant from statutory body such as CEA/SLDC State electrical inspectorate etc shall be obtained by the SPD at its cost and risk. The Commissioning certificates shall be issued by CoPA after successful commissioning.

COMMISSIONING SCHEDULE AND LIQUIDATED DAMAGE FOR DELAY IN COMMISSIONING

The Project shall be commissioned within 12 months from the date of signing of PPA. In this regard, the Chief Mechanical Engineer or his representative will physically inspect and certify successful commissioning of the Project. In case of failure to achieve this milestone, provisions of PPA as mentioned below shall apply:-

- a. Delay up to six months from the SCD: The total PBG amount shall be encashed on per day basis and proportionate to the balance capacity not commissioned. For example, in case of a Project of 50MW capacity, if commissioning of 10 MW capacity is delayed by 18 days from the scheduled date, then the penalty shall be: $PBG \text{ amount} \times (10/50) \times (18/180)$.
- b. The maximum time period allowed for commissioning of the full Project Capacity with encashment of Performance Bank Guarantee shall be limited to 18 months from the Effective Date of the PPA. In case, the Commissioning of the Project is delayed beyond 12 months from the Effective Date of the PPA, the PPA shall be in force from the date of Commissioning of the Project.

For the purpose of calculations for penalty, 'month' shall be considered consisting of 30 days.

Illustration of Liquidated Damages (LD) Calculations:

Consider the SPD has been selected for the implementation of Project of capacity of 1.5 MW at an estimated cost of Rs.6,25,50,000.00

Total Performance Bank Guarantee Amount furnished by the SPD- will be Rs:25.02Lakh.

a) LD Conditions:

- In case of delay upto 6 Months from SCD: Entire PBG amount (i.e. INR 9266.67/MW/Day) shall be encashed as Liquidated Damages for the first six months of delay, calculated on per day basis and proportionate to the capacity not commissioned.

b) Consider that the Project commissioning (for e.g. Project capacity 1.5 MW) has been achieved in the following manner:

Sl. No.	Commissioned Capacity (MW) as on SCD	Capacity remaining Un-commissioned (MW) as on SCD	Date of Commissioning of the respective part	Delay from the Scheduled Commissioning date (days)
1	1	0.5	Scheduled Commissioning date	0
2	0.5	0	Scheduled Commissioning date + 150 Days	150

- i) LD Calculation: In case of above commissioning schedule, for 1.0MW capacity commissioned within SCD (scenario 1) there will be no LD. For balance 0.5MW capacity (scenario 2), the LD calculation for encashment of PBG, shall be done as follows:

Total LD: $(0.5 \text{ MW} \times 150 \text{ days} \times \text{INR } 9266.67) = \text{INR Rs.6,95,000/-}$

Based on the above schedule, total LD payable by the SPD shall be INR 6,95,000/-.

EARLY COMMISSIONING

The SPD is encouraged for full commissioning of the Project even prior to the SCD. In cases of early commissioning, till the SCD, CoPA may purchase the generation @75% (Seventy Five Percent) of the PPA tariff at its sole discretion.

a) Right to Contracted Capacity & Energy / Penalty Clause for not achieving CUF

The SPD will declare the CUF of the project and will be allowed to revise the same once within first year after COD of the project. Thereafter, the CUF for the Project shall remain unchanged for the entire term of the PPA. The declared annual CUF shall in no case be less than 28%. It shall be the responsibility of the SPD, entirely at its cost and expense to install such number of Solar panels and associate equipment (including arrangement of extra Reservoir/land for such installation) as may be necessary to achieve the required CUF, and for this purpose SPD shall make its own study and investigation of the Global Horizontal Irradiance (GHI) and other factors prevalent in the area which have implication on the quantum of generation. SPD shall maintain generation so as to achieve annual CUF within + 10% and -15% of the declared value till the end of 10 years from COD, subject to the annual CUF remaining minimum of 15%, and within +10% and -20% of the declared value of the annual CUF thereafter till the end of the PPA duration of 25 years. The annual CUF will be calculated every year from 1st April of the year to 31st March next year. The compensation due to shortfall in generation shall be applied to the amount of shortfall in generation during the Contract Year. The amount of compensation shall be equal to the compensation payable (including RECs) by CoPA towards non - meeting of RPOs, which shall ensure that the CoPA is offset for all potential costs associated with low generation and supply of power under the PPA, subject to a minimum of 25% (twenty-five percent) of the cost of this shortfall in energy terms, calculated at PPA tariff. The amount being equal to the compensation payable by the CoPA for not meeting RPO is only a measure of damage. It shall not be construed that the compensation is payable by SPD only if the buying Entity are required to pay compensation for such not meeting of RPO or that the buying Entity or the SPD shall be required to prove or establish such payment of compensation for not meeting the RPO. SPD shall agree that the methodology specified herein above for calculation of liquidated damages payable by the SPD for shortfall in generation is a genuine and accurate pre-estimation of the actual loss that will be suffered by buying Entity. SPD shall further acknowledge that a breach of any of the obligations contained herein result in injuries and that the amount of the liquidated damages or the method of calculating the liquidated damages specified in this document is a genuine and reasonable pre-estimate of the damages that may be suffered by buying Entity in each case specified under this Agreement. However, this compensation shall not be applicable in events of Force Majeure identified under the PPA with COPA affecting supply of power by the SPD. Any excess generation over and above 10% of declared annual CUF may be purchased by CoPA at a fixed tariff of 75% (seventy- five percent) of the PPA tariff. However, the SPD shall inform at least 30 days in advance of such excess generation to CoPA, to enable CoPA to take necessary actions for the acceptance of this excess generated energy. CoPA shall be required to

intimate its approval/refusal to the SPD, for buying such excess generation not later than 7 days of receiving the above offer from the SPD. While the SPD would be free to install DC solar field as per his design of required output, including his requirement of auxiliary consumption, he will not be allowed to sell any excess power to any other entity other than CoPA. In case at any point of time, the peak of capacity reached is higher than the rated capacity and causes disturbance in the system at the point where power is injected, the SPD will have to forego the excess generation and reduce the output to the rated capacity.

16. COMMERCIAL OPERATION DATE (COD)

Commercial Operation Date (COD) shall be the date on which the commissioning certificate is issued upon successful commissioning of the full capacity of the Project or the last part capacity of the Project, as the case may be. The 25-year tenure of PPA shall be as per the provisions of PPA. The following milestone dates may therefore be observed and may fall on separate dates:

- (a) Inter connection with Grid: This will be facilitated by the CoPA on the request of the SPD, and on submission of approval certificate from CEA and upon conducting harmonics tests successfully even if the project is only partially ready, to facilitate testing and allow flow of power generated into the grid to avoid wastage of Power.
- (b) Commissioning of the Project: This will be on a date, when the project meets the criteria defined for project commissioning. CoPA may authorize any individual or committee or organization to declare the project commissioned onsite.

17. MINIMUM PAID UP SHARE CAPITAL TO BE HELD BY PROJECT PROMOTER

The Bidder shall provide 1.5MWp Grid connected Floating Solar PV project at the water body near CoPA's walkway avenue between BOT junction and Kannangatt bridge at Willingdon Island. As per the bidding documents, the SPD shall provide at its cost the required 11kV switchgears, transformers, transmission UG cables, metering & Protection devices, SCADA facilities etc. as per standards. Complete information in their bid in reference to this RfS about the Promoters and upon issuance of Letter of Intent (LoI), the SPD shall indicate its shareholding in the company indicating the controlling share holding before signing of PPA with CoPA.

No change in the controlling share holding of the Bidding Company or Bidding Consortium shall be permitted from the date of submission of response to RfS till the execution of the PPA. However, in case the Project is being set up by a listed Company, this condition will not be applicable.

Incase of SPVs: The successful Bidder, if being a single company, shall ensure that its share holding in the SPV/Project Company executing the PPA, shall not fall below 51% at any time prior to 01 (one) year from the COD, except with the prior approval of CoPA. In the event the successful bidder is a consortium, then the combined shareholding of the consortium members in the SPV/Project Company executing the PPA, shall not fall below 51% at any time prior to 01 (one) year from COD, except with the prior approval of CoPA. However, in case the Project is being set up by a listed Company, this condition will not be applicable.

In case of the successful Bidder itself executing the PPA, it shall ensure that its promoters shall not cede Control (Control shall mean the ownership, directly or indirectly, of more than 50% of the voting shares of such Company or right to appoint majority Directors), till 01 (one) year from the COD, except with the prior approval of CoPA. However, in case the Project is being set up by a listed Company, this condition will not be applicable.

In case of companies having multiple promoters (but none of the share holders having more than 50% of voting rights and paid up share capital), it shall be considered as a company under joint control. In such cases, the share holding pattern in the company as submitted at the time of bidding, shall be maintained for a period of 01 (One) year after COD.

Any change in the share holding after the expiry of 01 year from COD can be undertaken under intimation to CoPA. Transfer of controlling share holding of the company developing the project within the same group of companies will however be allowed after COD with the permission of CoPA, subject to the condition that, the management control remains within the same group of companies.

In the event of Change in Shareholding/ Substitution of Promoters triggered by the Financial Institutions leading to signing of fresh PPA with a new entity, an amount of INR 10 Lakh per Transaction as Facilitation Fee (non-refundable) shall be remitted by the developer to CoPA.

18. STRUCTURING OF THE BID SELECTION PROCESS

Single stage, two cover bidding has been envisaged under this RfS. Bidders have to submit both Techno-Commercial Bid and Financial Bid (Tariff) together in response to this RfS online. The preparation of bid proposal has to be in the manner described in Clause No.23, Section-II, Instructions to Bidders (ITB) of RfS.

19. INSTRUCTIONS TO BIDDERS FOR STRUCTURING OF BID PROPOSALS IN RESPONSE TO RfS

The bidder including its Parent, Affiliate or Ultimate Parent or any Group Company shall submit a single response to RfS.

Detailed Instructions to be followed by the bidders for online submission of response to RfS are stated at Annexure - D and Annexure - E

Submission of bid proposals by Bidders in response to RfS shall be in the manner described below:

1. Covering Letter as per Format 7.1.
2. In case of a Bidding Consortium, a Power of Attorney in favour of the Lead Member issued by the other Members of the Consortium shall be provided in original as per format attached hereto as Format 7.2.

In the event any Member of the Bidding Consortium (other than Lead Member) is a foreign entity, it may submit Board Resolutions in place of Power of Attorney for the purpose of fulfilling the requirements under this clause. Provided that such Board Resolutions shall be supported by an unqualified opinion issued by the legal counsel of such foreign entity stating that the Board Resolutions are

incompliance with the applicable laws of the respective jurisdictions of the issuing Company and the authorizations granted therein are true and valid.

3. Earnest Money Deposit (EMD) in DD Drawn in favour of FA&CAO, Cochin Port Authority or as per Clause 10 mentioned above.
4. Board Resolutions, as per prescribed formats enclosed as per Format 7.4 duly certified by the Company Secretary or the Director of the relevant Bidder, as applicable to the Bidder and mentioned hereunder:
 - a. Board resolution from the Bidding Company or the Lead Member of the Consortium, as the case may be, in favour of the person signing the response to RfS and in the event of selection of the Projects and to sign the PPA with COPA. Additionally, Board Resolution from each of the Consortium Members in favour of the person signing Consortium Agreement shall also be submitted.
 - b. Board Resolution from the Bidding Company committing 100% (One Hundred Percent) of the equity requirement for the Project/Board Resolutions from each of the Consortium Members together in aggregate committing to 100% (One Hundred Percent) of equity requirement for the Project (in case of Bidding Consortium); and
 - c. Board Resolutions from each of the Consortium Members and Lead Member contributing such additional amount over and above the percentage limit (specified for the Lead Member and other member in the Consortium Agreement) to the extent becoming necessary towards the total equity share in the Project Company, obligatory on the part of the Consortium pursuant to the terms and conditions in the Consortium Agreement.
5. In case of a Consortium, the Consortium Agreement between the Members in the Consortium as per Format 7.5 along with Board resolution from each Member of the Consortium for participating in Consortium.
6. Format for Financial Requirements as per Format 7.6 along with the certificate from practicing Chartered Accountant/Statutory Auditors showing details of computation of the financial credentials of the Bidder.
7. A disclosure statement as per Format 7.7 regarding participation of any related companies in the bidding process.
8. Format for Technical Criteria as per Format 7.8 (to be filled out separately for each Project)
9. Declaration by the Bidding Company/ Lead Member of Bidding Consortium for the Proposed Technology Tie Up as per Format 7.9 (to be filled out separately for each Project).
10. Pre-contract Integrity Pact as per the format available at CoPA website, www.cochinport.gov.in, in plain white paper.
11. Experience certificate substantiating the compliance of MQC regarding experience, duly certified by notary Public.
12. Profile of the company, concurrent commitments etc
13. Attachments
 - a. Memorandum of Association/ Article of Association needs to be attached

along with the bid. The Bidder should also highlight the relevant provision which identifies the objects relating to Power/Energy/Renewable Energy/Solar Power plant development.

- In case, there is no mention of the above provisions in the MoA/ AoA of the bidding company, the same has to be amended and submitted prior to signing of PPA, if the Bidder is selected as Successful Bidder.
 - If the selected Bidder wishes to execute the project through a Special Purpose Vehicle (SPV), the MoA/ AoA of the SPV high lighting the relevant provision which highlights the objects relating to Power/Energy/Renewable Energy/Solar Power plant development has to be submitted prior to signing of PPA.
- b. Certificate of Incorporation of Bidding Company/ all member companies of Bidding Consortium.
- c. A certificate of shareholding of the bidding company, its Parent and Ultimate Parent (if any) duly certified by a practicing Chartered Accountant/ Company Secretary as on date within one week prior to the last date of bid submission, along with documents containing information about the promoters, and their share holding in the Bidder (as on a date within one week prior to the last date of bid submission) indicating the controlling share holding at the stage of submission of response to RfS as per Section-II, Instructions to Bidders (ITB) of RfS. CoPA reserves the right to seek additional information relating to shareholding in promoter companies, their parents/ ultimate parents and other group companies to satisfy themselves that RfS conditions have been complied with and the Bidder will ensure submission of the same within the required time lines.
- d. Certified copies of annual audited accounts for the last three financial years, i.e. FY 2019-20, 2020-21 and 2021-22.

20. IMPORTANT NOTES AND INSTRUCTIONS TO BIDDERS

1. Wherever information has been sought in specified formats, the Bidders shall fill in the details as per the prescribed format and shall refrain from any deviations and referring to any other document for providing any information required in the prescribed format.
2. The Bidders shall be shortlisted based on the declarations made by them in relevant schedules of RfS. The documents submitted online will be verified before signing of PPA in terms of Clause No.14, Section-II, Instructions to Bidders (ITB) of RfS.
3. If the Bidder/ Member in a Bidding Consortium conceal any material information or makes a wrong statement or misrepresents facts or makes a misleading statement in its response to RfS, in any manner whatsoever, CoPA reserves the right to reject such response to RfS and/ or cancel the Letter of Award (LoA), if issued, and the Bank Guarantee provided up to that stage shall

- be encashed. Bidder shall be solely responsible for disqualification based on their declaration in the submission of response to RfS.
4. If the event specified at 21.3 is discovered after the Effective Date of PPA, consequences specified in PPA shall apply.
 5. Response submitted by the Bidder shall become the property of the CoPA and CoPA shall have no obligation to return the same to the Bidder. However, the EMDs submitted by unsuccessful Bidders shall be returned as specified in Clause no. 10, Section-II, Instructions to Bidders (ITB) of RfS.
 6. All documents of the response to RfS (including RfS and subsequent Amendments/ Clarifications/Addenda, PPA and PSA) submitted online must be digitally signed by the person authorized by the Board as per Format 7.4.
 7. The response to RfS shall be submitted as mentioned in Clause No. 20, Section-II, Instructions to Bidders (ITB) of RfS. No change or supplemental information to a response to RfS will be accepted after the scheduled date and time of submission of response to RfS. However, CoPA reserves the right to seek additional information from the Bidders, if found necessary, during the course of evaluation of the response to RfS.
 8. The bidder shall make sure that the correct, valid and operative Pass-Phrase to decrypt the relevant Bid-part is submitted in to the 'Time Locked Electronic Key Box (EKB)' after the deadline of Bid submission, and before the commencement of the Online Tender Opening Event (TOE) of Technical bid.
 9. All the information should be submitted in English language only. In case of foreign bidders having documents in other than English language, then the documents shall be translated in English language by certified translator and submitted.
 10. Bidders shall mention the name of the contact person and complete address and contact details of the Bidder in the covering letter.
 11. Response to RfS that are incomplete, which do not substantially meet the requirements prescribed in this RfS, will be liable for rejection by CoPA.
 12. Response to RfS not submitted in the specified formats will be liable for rejection by CoPA.
 13. Bidders delaying in submission of additional information or clarifications sought will be liable for rejection.
 14. Non-submission and/ or submission of incomplete data/ information required under the provisions of RfS shall not be construed as waiver on the part of CoPA of the obligation of the Bidder to furnish the said data/information unless the waiver is in writing.
 15. Only Court in Cochin shall have exclusive jurisdiction in all matters.

21. VALIDITY OF THE RESPONSE TO RfS

The Bidder shall submit the response to RfS which shall remain valid up to 240 (Two Hundred Forty) days from the last date of submission of response to RfS ("Bid Validity"). CoPA reserves the right to reject any response to RfS which does not meet the aforementioned validity requirement.

22. BID PREPARATION COST

The Bidder shall be responsible for all the costs associated with the preparation of the response to RfS and participation in discussions and attending pre-bid meeting(s) etc. CoPA shall not be responsible in any way for such costs, regardless of the conduct or outcome of the bid process

23. CLARIFICATIONS/ PRE BID MEETING/ ENQUIRIES/AMENDMENTS

Clarifications/ Doubts, if any, on RfS document may be emailed and/ or submitted in person/ by post, addressed to the Chief Mechanical Engineer, CoPA on or before the Pre-bid meeting scheduled as per RfS..

CoPA will make effort to respond to the same in the Pre-Bid Meeting to be held as mentioned in the Bid Information Sheet. A compiled list of such questionnaire and CoPA's response will be uploaded in the website www.gem.gov.in. www.cochinport.gov.in & www.eprocure.gov.in .

No separate reply/ intimation will be given for the above, elsewhere.

A Pre-Bid Meeting shall be held as mentioned in the Bid Information Sheet (Link shall be provided to the firms requesting for the same).

Enquiries/ Clarifications may be sought by the Bidder from:

Name of the Authorized Person of COPA:	Contact Details:
Shri V. ThuraiPandian, Chief Mechanical Engineer, Cochin Port Authority, Cochin 9	Phone (Off): 0484-2666639, 0484-2582300 E-mail: cme@cochinport.gov.in
Sri. Ajayakumar R.S. Executive Engineer (Ele)	Phone (Off): 0484-2582305 Email: ajayakumarrs@cochinport.gov.in
Shri. D.Ajith Kumar Executive Engineer (Ele), Project	Phone (Off): 0484-2582320, Email: ajithkumar@cochinport.gov.in

24. RIGHT OF COPA TO REJECT A BID

CoPA reserves the right to reject any or all of the responses to RfS or cancel the RfS or annul the bidding process for any project at any stage without assigning any reasons whatsoever and without thereby any liability.

25. POST AWARD COMPLIANCES

Timely completion of all the milestones i.e. signing of PPA, meeting Financial Closure Requirements/ Conditions Subsequent (PPA), Commissioning etc. will be the sole responsibility of SPD. CoPA shall not be liable for issuing any intimations/reminders to SPDs for timely completion of milestones and/or submission of compliance documents.

Any checklists shared with SPD by CoPA for compliance of above mentioned milestones to be considered for the purpose of facilitation only. Any additional documents required as per the conditions of Guidelines, RfS and PPA must be timely submitted by the SPD.

26. APPLICABLE LAW

The Contract shall be interpreted in accordance with the laws of Cochin

27. SETTLEMENT OF DISPUTE

If any dispute of any kind whatsoever arises between CoPA and Successful bidder in connection with or arising out of the contract including without prejudice to the generality of the foregoing, any question regarding the existence, validity or termination, the parties shall seek to resolve any such dispute or difference by mutual consent.

If the parties fail to resolve, such a dispute or difference by mutual consent, within 45 days of its arising, then the dispute shall be referred by either party by giving notice to the other party in writing of its intention to refer to arbitration as hereafter provided regarding matter under dispute. No arbitration proceedings will commence unless such notice is given.

In case the contractor is a public sector enterprise or a Government department:

In case the Contractor is a Public Sector Enterprise or a Government Department, the dispute shall be referred for resolution in Permanent Machinery for Arbitration (PMA) of the Department of Public Enterprise, Government of India. Such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary / Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusive. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.

In case the contractor is not a public sector enterprise or a Government department.

In all other cases, any dispute submitted by a party to arbitration shall be heard by an arbitration panel composed of three arbitrators, in accordance with the provisions set forth below.

CoPA and the Contractor shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the two arbitrators do not succeed in appointing a third arbitrator within Thirty (30) days after the latter of the two arbitrators has been appointed, the third arbitrator shall, at the request of either party, be appointed by the Appointing Authority for third arbitrator which shall be the President, Institution of Engineers.

If one party fails to appoint its arbitrator within thirty (30) days after the other party has named its arbitrator, the party which has named an arbitrator may request the Appointing Authority to appoint the second arbitrator.

If for any reason an arbitrator is unable to perform its function, the mandate of the Arbitrator shall terminate in accordance with the provisions of applicable laws as

mentioned in Clause 27 (Applicable Law) and a substitute shall be appointed in the same manner as the original arbitrator.

Arbitration proceedings shall be conducted with The Arbitration and Conciliation Act, 1996. The venue of arbitration shall be Cochin.

The decision of a majority of the arbitrators (or of the third arbitrator chairing the arbitration panel, if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction as decree of the court. The parties thereby waive any objections to or claims of immunity from such enforcement.

The arbitrator(s) shall give reasoned award.

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the agreement unless they otherwise agree.

Cost of arbitration shall be equally shared between the Successful bidder or Contractor and CoPA

28. FORCE MAJEURE

Notwithstanding the provisions of clauses contained in this RFS document; the contractor shall not be liable to forfeit (a) Security deposit for delay and (b) termination of contract; if he is unable to fulfill his obligation under this contract due to force majeure conditions.

For purpose of this clause, "Force Majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable, either in its sovereign or contractual capacity. Such events may include but are not restricted to Acts of God, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes etc. Whether a "Force majeure" situation exists or not, shall be decided by COPA and its decision shall be final and binding on the contractor and all other concerned.

In the event that the contractor is not able to perform his obligations under this contract on account of force majeure, he will be relieved of his obligations during the force majeure period. In the event that such force majeure extends beyond six

29. OTHER CONDITIONS

The Successful bidder shall not transfer, assign or sublet the work under this contract or any substantial part thereof to any other party without the prior consent of COPA in writing.

The Successful bidder shall not display the photographs of the work and not take advantage through publicity of the work without written permission of CoPA and KWA.

The Successful bidder shall not make any other use of any of the documents or information of this contract, except for the purposes of performing the contract.

a. Successors and Assignees

In case CoPA or Successful bidder may undergo any merger or amalgamation or a scheme of arrangement or similar re-organization & this contract is assigned to any entity (ies) partly or wholly, the contract shall be binding mutatis mutandis upon the successor entities & shall continue to remain valid with respect to obligation of the successor entities.

b. Severability:

It is stated that each paragraph, clause, sub-clause, schedule or annexure of this contract shall be deemed severable & in the event of the unenforceability of any paragraph, clause sub-clause, schedule or the remaining part of the paragraph, clause, sub-clause, schedule annexure & rest of the contract shall continue to be in full force & effect.

c. Counterparts

This contract may be executed in one or more counterparts, each of which shall be deemed an original & all of which collectively shall be deemed one of the same instrument.

30. CONDITIONS FOR BID SUBMISSION BY JV

Companies/Contractors may jointly undertake contract/contracts. Each entity would be jointly and severally responsible for completing the task as per the contract, however declaration of the Lead member to be indicated by bidders, however JV has to designate in their MOU. The firms with at least 26% equity holding each are allowed to jointly meet the legibility criteria.

Bid submitted by an unincorporated Joint Venture of companies (JV) /Consortium of companies (Consortium), shall comply with the following requirements:

- a) There shall be a Joint Venture Agreement between the constituent firms specific for the contract package for which the bids are submitted. The JV Agreement shall include among other things, the joint venture's objectives, the proposed management structures, the proposed distribution of responsibilities both financial as well as technical for execution of the work, the contribution of each partner to joint venture operation, the commitment of all partners to jointly and severally liable for due performance, recourse/ sanctions within the joint venture in the event of default or withdrawal of any partner and arrangements for providing the required indemnities.
- b) The most experienced partner will be nominated as the Lead Partner and his nomination shall be evidenced by submitting power of attorney signed by the legally authorized signatories of all the partners.
- c) The Lead Partner of the joint venture will provide suitable experienced personnel for at least 3 (three) positions in the assignment during the whole period of contract execution and a statement to this effect should be included in the Joint Venture Agreement.
- d) The bid and in the case of the successful bidder, the Agreement, shall be signed and / or executed in such a manner for making it legally binding on all partners (including operative parts of the ensuing Contract in respect of Agreement of Arbitration, etc.). The Contract shall be signed by legally authorized signatories of all partners.
- e) The Lead Partner shall be authorized to incur liabilities and to receive instructions for and on behalf of the partners of the Joint venture and entire execution of the Contract including payment shall be carried out exclusively through the Lead Partner. A Statement to this effect should be included in the Joint Venture Agreement.
- f) All partners of the Joint Venture shall be liable jointly and severally for the execution of the Contract in accordance with the Contract terms, and a Statement to this effect should be included in the Joint Venture Agreement.
- g) Bid Security as required can be furnished by any partner but it shall be in the name of Joint venture.
- h) Performance Guarantee, as required, will be furnished by all partner(s), out of their accounts, in proportion of their participation in joint venture.
- i) Joint Venture Agreement shall contain a clause to the effect that there shall be a

separate JV Bank Account (distinct from the Bank Account of the individual partners) to which the individual partners shall contribute their share capital and/or working capital.

- j) Joint Venture Agreement shall also contain a clause to the effect that the financial obligation of the JV shall be discharged through the said JV Bank Account only and also all payment received by JV from the Employer shall be through that account only.
- k) Participation by a firm in more than one JV / Consortium is not permissible. A firm who submits bid on individual capacity is not eligible to be a partner of a JV / Consortium. In case a firm's name appears in more than one bid then both application may be rejected.
- l) Each partner must submit the complete documentation, or portions applicable thereto, required qualifying the firm for bidding.
- m) All the partners of the JV/Consortium shall be jointly and severally liable for due performance, recourse/sanctions within the joint venture in the event of default of any partner and arrangements for providing the required indemnities.
- n) Notwithstanding demarcation or allotment of work among the partners, each partner shall be liable for non performance of the whole contract irrespective of their demarcation or share of work.
- o) The Lead Partner shall be authorized to act on behalf of the JV/Consortium.
- p) All the correspondences between the Employer and the contractor shall be routed through the Lead Partner.
- q) In the event of default by the Lead Partner, it shall be construed as default of the Contractor; and Employer will take action under relevant clause(s) of the Bid Document and/or General Terms and Conditions of Contract.
- r) A legally binding Joint Venture/Consortium Agreement signed by authorized signatories of all the partners of the JV/Consortium, as per the proforma at *Annexure-13* shall be enclosed with the bid.
- s) In case, the Joint Venture/Consortium Agreement enclosed with the bid is not acceptable to the Employer, the JV / Consortium will modify the agreement so as to be acceptable to the Employer.
- t) Power of attorney duly executed and signed by legally authorized signatories of all the partners, authorizing the Lead Partner (a) to submit bid, negotiate and conclude contract and incur all liabilities therewith on behalf of the partner(s) of the JV / Consortium during the bidding process; and (b) in the event of a successful bid, to incur liabilities and receive instructions for and on behalf of the partner(s) of the JV / Consortium and to carry out the entire execution of the contract including payment, exclusively through Lead Partner, as per the proforma at *Annexure-14*, which shall be duly authenticated by a notary public or equivalent certifying authority, shall be enclosed with the bid.
- u) An undertaking that all the partners are jointly and severally liable to the Employer for the performance of the contract shall be enclosed with the bid.
- v) In the event of any partner leaving the JV, it shall be intimated to the Employer within 30 days by other partner(s). Failure to do so shall be construed as default of the contractor and the Employer may take action under relevant clause(s) of the Bid Document and/or General Terms and Conditions of Contract
- w) The contractor shall not alter its composition or legal status without the prior written permission of the Employer. Failure to do so shall be construed as default of the contractor and the Employer may take action under relevant clause(s) of the Bid Document and/or General Terms and Conditions of Contract.

Number of partners in JV/Consortium shall be limited to maximum of three.

31. PRE CONTRACT INTEGRITY PACT

The bidders have to execute an “Integrity Pact” (IP) as per the format available in CoPA’s website www.cochinport.gov.in, prepared in plain white paper. Integrity pact shall cover entire activities of this tender from bidding stage to the completion of defect liability period during various phases of this tender. The Tenderer should sign and submit the “Integrity Pact” to be executed between the Tenderer and Cochin Port Authority along with the Tender in a separate envelope super scribing “Integrity Pact”. Tenders not accompanied with IP will be rejected. The IP would be implemented through the following panel of Independent External Monitors (IEM) for this tender:

- 1) Shri. M J Joseph, ICAS (Rtd.)
37, Da Costa Square, 3rd Cross, Cooke Town
Bangalore – 560 084
Email: joseph.iem@cochinport.gov.in
- 2) Shri. Punati Sridhar, IFoS(Retd)
8C, Block -4, 14-C Cross,
MCHS Colony, HSR 6th Sector,
Bangalore -560102
Email ID :sridhar.iem@cochinport.gov.in

For full details of the scheme of IP, you may visit the website of Central Vigilance Commission, New Delhi.

SIGNATURE OF BIDDER

SECTION - III

QUALIFYING REQUIREMENTS FOR BIDDERS (QR)

Short listing of Bidders will be based on meeting the following Criteria:

A GENERAL ELIGIBILITY CRITERIA

1. General

- The Bidder should be either a Joint Venture (JV)/ Consortium / Private Ltd. Company / Public Ltd. Company / Proprietary Firm.
- A copy of Certificate of Registration / Incorporation, Memorandum of Article of Association, Partnership deed etc. as applicable shall be furnished in support of their claim.
- In case of Bid submitted by JV/Consortium, the minimum eligibility criteria except financial turnover can be fulfilled collectively by the partners of the JV/ Consortium.
- In the case of Bid submitted by JV/Consortium, the Lead partner of the JV shall meet the minimum eligibility criteria of financial turnover.

2. Technical Eligibility Criteria

The tenderers should have the experience of having successfully completed similar works during the last 7 (seven) years ending on the last date of the previous month in which the tender has been floated and should be either of the following:

- a. One (1) similar completed work costing not less than **Rs. 5,00,40,000/-** (80% of estimated cost) (or installed 1.20MWp capacity plant) OR
- b. Two (2) similar completed works, each single contract costing not less than **Rs.3,12,75,000/-** (50% of estimated cost) (or installed 0.75 MWp capacity plant)/- OR
- c. Three (3) similar completed works, each single contract costing not less than **Rs.2,50,20,000/-** (40% of estimated cost) (or installed 0.60 MWp capacity plant)

- Note:-
- (i) Similar works means "Site Survey, Design, Engineering, Manufacture, Supply, Storage, Civil work, Erection, Testing & Commissioning of Solar Power Plants in a single contract or cumulative contracts".
 - (ii) The list of projects commissioned during last 7 years ending 30/04/2023, indicating whether the project is grid connected, along with a copy of the Commissioning certificate and Work order/ Contract Agreement/ from the Client/Owner shall be submitted in support of the claim.
 - (iii) The estimated amount of Rs.6,25,50,000/- has been arrived from the Benchmark cost fixed by KSERC as per the revised Regulations (Renewable and Net metering)(first amendment) Regulations 2022. Since, as per Regulation there is no capacity range available above 500kW, we have considered the capacity range of 101-500kW, which is Rs.4.17Crore per MW, for calculation of estimate amount.

3. Financial Eligibility Criteria

Average Financial turnover of the tenderer during the last 3 financial years ending 31st March 2022, shall not be less than Rs.1,87,65,000/-. The bidder would be required to submit annual audited accounts for the last 3 financial years, up to FY 2021-22, showing annual turnover from the Chartered Accountant. For meeting the above financial eligibility criteria, if the data is provided by the Bidder in USD, equivalent Indian Rupees of Net Worth and other financial parameters will be calculated by the Bidder using Reserve Bank of India's reference rates prevailing on the date of closing of the accounts for the respective financial year. For currency other than USD, Bidders shall convert such currency into USD as per the exchange rates certified by their banker prevailing on the relevant date and used for such conversion.

4. The Bid Bond (EMD) shall be remitted as per the Instruction to Bidders (ITB) of SBD.
5. The Chief Mechanical Engineer of Cochin Port Authority reserves the right to reject/ cancel/ postpone /annul any one or all tenders at any stage of the tender, which will be binding on all bidders.
6. All correspondence with regard to the above shall be to the following address. (By Post/e-mail/In Person)
 - a) Name of bid documentation issuance officer : V. Thuraipandian
 - b) Designation of the officer: Chief Mechanical Engineer
 - c) Address: Office of the Chief Mechanical Engineer, 1st floor, Main administrative building, Cochin Port Authority, Cochin 682 009.
 - d) Telephone- 0091 484 2666639, 04842582300, 2582305, 2582320
 - e) Fax: 0091 484 2666639
 - f) E mail ID- cme@cochinport.gov.in
7. In the case of Bid submitted by JV / Consortium, the lead partner of the JV shall meet the Minimum Eligibility Criteria of Financial Turnover.

SECTION - IV

DEFINITIONS OF TERMS

"ACT" or "ELECTRICITY ACT, 2003" shall mean the Electricity Act, 2003 and include any modifications, amendments and substitution from time to time;

"AFFILIATE" shall mean a Company that, directly or indirectly,

- i. controls, or
- ii. is controlled by, or
- iii. is under common control with, a Company developing a Project or a Member in a Consortium developing the Project and control means ownership, directly or indirectly, of more than 50% (fifty percent) of the voting shares of such Company or right to appoint majority Directors;

"APPROPRIATE COMMISSION" shall mean as defined in the PPA;

"BIDDER" shall mean Bidding Company (including a foreign company) or a Bidding Consortium submitting the Bid. Any reference to the Bidder includes Bidding Company/ Bidding Consortium, Member of a Bidding Consortium including its successors, executors and permitted assigns and Lead Member of the Bidding Consortium jointly and severally, as the context may require; foreign companies participating in the bidding process shall be registered as companies as per the rules of their country of origin;

"BIDDING CONSORTIUM" or **"CONSORTIUM"** shall refer to a group of Companies that have collectively submitted the response in accordance with the provisions of this RfS under a Consortium Agreement;

"BLOCK" shall mean a minimum capacity to be installed at a single location, which shall be not be less than 0.75 MW. The Blocks shall be configured in line with Clause 3 of Section-II (ITB) of the RfS;

"CAPACITY UTILIZATION FACTOR (CUF)" shall have the same meaning as provided in CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 as amended from time to time;

"CHARTERED ACCOUNTANT" shall mean a person practicing in India or a firm whereof all the partners practicing in India as a Chartered Accountant(s) within the meaning of the Chartered Accountants Act, 1949.

For Bidders incorporated in countries other than India, "Chartered Accountant" shall mean a person or a firm practicing in the respective country and designated/registered under the corresponding Statutes/ laws of the respective country;

"COMPANY" shall mean a body corporate incorporated in India under the Companies Act, 1956 or the Companies Act, 2013, as applicable;

"COMMERCIAL OPERATION DATE (COD)" shall mean the date as defined in Clause no. 16, Section-II, Instructions to Bidders (ITB) of RfS;

"CONTRACTED CAPACITY" shall mean the A Capacity in MW contracted with CoPA for supply by the SPD to CoPA at the Delivery Point from the Solar Power Project;

“CONTRACT YEAR” shall mean the period beginning from the Effective Date and ending on the immediately succeeding 31st March and thereafter each period of 12 months beginning on 1st April and ending on 31st March provided that:

- (a) in the financial year in which the Scheduled Commissioning Date would occur, the Contract Year shall end on the date immediately before the Scheduled Commissioning Date and a new Contract Year shall commence once again from the Scheduled Commissioning Date and end on the immediately succeeding 31st March, and there after each period of 12(Twelve)Months commencing on 1st April and ending on 31st March, and
- (b) provided further that the last Contract Year of this Agreement shall end on the last day of the Term of this Agreement;

“CONTROL” shall mean the ownership, directly or indirectly, of more than 50% (fifty percent) of the voting shares of such Company or right to appoint majority Directors;

“CONTROLLING SHAREHOLDING” shall mean more than 50% of the voting rights and paid up share capital in the Company/ Consortium;

STATE TRANSMISSION UTILITY (STU)” shall mean the State Transmission Utility, M/s Kerala State Electricity Board(KSEBL)

“DAY” shall mean calendar day;

“EFFECTIVE DATE” shall mean the date as on from the date of issuance of Letter of Acceptance Intent (LOA), which shall be indicated in the Power Purchase Agreement(PPA) executed by both the parties;

“EQUITY” shall mean Net Worth as defined in Companies Act, 2013;

“FINANCIAL CLOSURE” or “PROJECT FINANCING ARRANGEMENTS” means arrangement of necessary funds by the Solar Power Developer either by way of commitment of funds by the Company from its internal resource and/or tie up of funds through a bank/ financial institution by way of sanction of a loan or letter agreeing to finance. For details kindly refer Clause no. 14, Section-II(ITB);

“FLOATING SOLAR” means a floating solar array or floating solar farm, refers to an array of photovoltaic panels on a structure that floats on a body of water, typically a reservoir or lake;

“LEAD MEMBER OF THE BIDDING CONSORTIUM” or “LEAD MEMBER”: There shall be only one Lead Member, having the shareholding of not less than 51% in the Bidding Consortium.

“GROUP COMPANY” of a Company means

- a) a Company which, directly or indirectly, holds 10% (Ten Percent) or more of the share capital of the Company or;
- b) a Company in which the Company, directly or indirectly, holds 10% (Ten Percent) or more of the share capital of such Company or;
- c) a Company in which the Company, directly or indirectly, has the power to direct or cause to be directed the management and policies of such Company whether through the ownership of securities or agreement or any other arrangement or otherwise or;

- d) a Company which, directly or indirectly, has the power to direct or cause to be directed the management and policies of the Company whether through the ownership of securities or agreement or any other arrangement or otherwise or;
- e) a Company which is under common control with the Company, and control means ownership by one Company of at least 10% (Ten Percent) of the share capital of the other Company or power to direct or cause to be directed the management and policies of such Company whether through the ownership of securities or agreement or any other arrangement or otherwise;
- f) Provided that a financial institution, scheduled bank, foreign institutional investor, Non-Banking Financial Company, and any mutual fund shall not be deemed to be Group Company, and its shareholding and the power to direct or cause to be directed the management and policies of a Company shall not be considered for the purposes of this definition unless it is the Project Company or a Member of the Consortium developing the Project;

“INTER-CONNECTION POINT/DELIVERY/METERING POINT” shall mean the point at 11kV at the 110KV substation, where the power from the Solar Power Projects is injected into the identified termination point (including the dedicated transmission line connecting the solar power Projects with the substation systems such as UG cables, switch gears, metering panels etc) as specified in the RfS document. Metering shall be done at this interconnection point where the power is injected into. For interconnection with grid and metering, the SPDs shall abide by the relevant CERC/ SERC Regulations, SLDC rules, Grid Code, CEA Communication & Cyber Security Regulations and Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended and revised from time to time.

“JOINT CONTROL” shall mean a situation where a company has multiple promoters (but none of the shareholders has more than 50% of voting rights and paid up share capital);

Note: The share holding of the Lead member in the Project Company (Special Purpose Vehicle) cannot be changed till 01 (One) year after the Commercial Operation Date (COD) of the Project;

“LETTER OF AWARD” or “LoA” shall mean the letter issued by Cochin Port Authority (CoPA) to the selected Bidder for award of the Project;

“LIMITED LIABILITY PARTNERSHIP” or “LLP” shall mean a Company governed by Limited Liability Partnership Act 2008 or as amended;

“LLC” shall mean Limited Liability Company;

“MEMBER IN A BIDDING CONSORTIUM” or “MEMBER” shall mean each Company in a Bidding Consortium. In case of a Technology Partner being a member in the Consortium, it has to be a Company;

“MONTH” shall mean calendar month;

“NET-WORTH” means the Net-Worth as defined section 2 of the company Act, 2013;

“PAID-UP SHARE CAPITAL” shall mean the paid-up share capital as defined in Section 2 of the Company Act, 2013;

“PARENT” shall mean a Company, which holds not more than 50% voting rights and paid up share capital, either directly or indirectly in the Project Company or a Member in a Consortium developing the Project;

“PGCIL” means Power Grid Corporation of India Limited;

“PPA” shall mean the Power Purchase Agreement signed between the SPD and CoPA with provision of separate Escrow account according to the terms and conditions of the standard PPA enclosed with this RfS;

“PACKAGE” shall mean cumulative installation of 1.50 MW, to be interconnected at a single point. A Project may be divided into 02 Packages by the Bidder and shall be configured in line with Clause 3 of Section-II (ITB) of the RfS;

“POWER PROJECT” or “FLOATING SOLAR POWER PROJECT” or “PROJECT” shall mean the solar power generation facility having separate points of injection in to the grid at Inter-connection/Delivery/Metering Point, as illustrated in Clause no. 3 of Section II (ITB) of the RfS, a Project may comprise of 2 packages each of 0.75MWp with separate meters. However the injection point to the grid is a single point where power from 2 sources shall be synchronized to a single unit and connected to CoPA’s grid through a common grid meter and CT/PT units. The payment shall be made based on the energy shown in the common grid meter. The Project and/ or Package(s) shall include all units and auxiliaries such as water supply, treatment or storage facilities, bay(s) for transmission system in the switchyard, dedicated transmission line up to the Delivery Point and all the other assets, buildings/structures, equipment, plant and machinery, facilities and related assets required for the efficient and economic operation of the power generation facility, whether completed or at any stage of development and construction or intended to be developed and constructed or the purpose of supply of power to CoPA;

“PROJECT CAPACITY” shall mean the maximum A Capacity at the delivery point that can be scheduled on which the Power Purchase Agreement shall be signed;

“PROJECT COMMISSIONING”: The Project will be considered as commissioned if all equipment as per rated project capacity has been installed and energy has flown into grid, in line with the Commissioning procedures defined in the RfS / PPA;

“PROJECT DEVELOPER” or “DEVELOPER” or “SOLAR POWER DEVELOPER (SPD)” shall mean the Bidding Company or a Bidding Consortium participating in the bid and having been selected and allocated a project capacity by CoPA (through a competitive bidding process), including the SPV formed by the selected bidder/ consortium for the purpose of setting up of project and signing of PPA with CoPA;

“RfS DOCUMENT” shall mean the bidding document issued by CoPA including all attachments, clarifications and amendments thereof vide RfS No.GEM/B/... M dt:00/00/2023.

“COPA” shall mean **Cochin Port Authority**;

“SELECTED BIDDER” or “SUCCESSFUL BIDDER” shall mean the Bidder selected pursuant to this RfS to set up the Project and supply electrical output as per the terms of PPA;

“SOLAR PV PROJECT” shall mean the Solar Photo Voltaic Power Project that uses sunlight for direct conversion in to electricity through Photo Voltaic Technology;

“STATE TRANSMISSION UTILITY” or “STU” shall mean the Kerala State Electricity Board or the Government Company notified by the respective State Government under Sub-Section I of Section 39 of the Electricity Act, 2003;

“TOE” shall mean Tender Opening Event.

"ULTIMATE PARENT" shall mean a Company, which owns more than 50% (Fifty Percent) voting rights and paid up share capital, either directly or indirectly in the Parent and Affiliates;

"KSEBL" shall mean Kerala State Electricity Board Limited;

"CERC" Means Central Electricity Regulatory Commission

"KSERC" Means Kerala State Electricity Regulatory Commission

"WEEK" shall mean calendar week;

SECTION - V

BID EVALUATION AND SELECTION OF PROJECTS

1 BIDEVALUATION

Bid evaluation will be carried out considering the information furnished by Bidders as per provisions specified in Section-II, Instructions to Bidders (ITB) of this RfS.

The evaluation process comprises the following four steps:

Step I - Responsiveness check of Techno Commercial Bid

Step II -Evaluation of Bidder's fulfillment of Eligibility Criteria

Step III -Evaluation of Price Bid and approval of the price/levellised tariff quoted by the successful bidder by the KSERC after conducting Reverse Auction.

Step IV -Successful Bidders(s) selection

The detailed evaluation procedure and selection of bidders are described in subsequent clauses in this Section.

2 TECHNO-COMMERCIAL EVALUATION OF BIDDERS

Each Bid shall be checked for compliance with the submission requirements set forth in this RfS before the evaluation of Bidder's fulfillment of Eligibility Criteria is taken up. During the examination of the bids, CoPA may seek clarifications/shortfall documents from the Bidders if required to satisfy themselves for meeting the eligibility conditions by the Bidders. Bidders shall be required to respond to any clarifications/ additional documents sought by CoPA within 07 (Seven) Days from the date of such intimation from CoPA. All correspondences in this regard shall be made through the mail only. The bidders shall send replies to the clarifications by mail attaching the documents as requested within the time given for replies.

Responsiveness check of Techno Commercial Bid

The Techno Commercial Bid submitted by Bidders shall be scrutinized to establish responsiveness to the requirements laid down in the RFS, Section III Eligibility Criteria. Any of the following may cause the Bid to be considered "Non-responsive", at the sole discretion of CoPA.

- (1) Bids that are incomplete, i.e. not accompanied by the Prequalification documents like Previous Work orders, Completion/Performance certificates and Financial Turn over certificates.
- (2) Bid not signed by authorized signatory and /or stamped in the manner indicated in this RFS;
- (3) Material inconsistencies in the information /documents submitted by the Bidder, affecting the Eligibility Criteria;
- (4) Information not submitted in the formats specified in this RFS;
- (5) Bid being conditional in nature;
- (6) Bid having Conflict of Interest;
- (7) More than one Member of a Bidding Company using the credentials of the same Parent Company /Affiliate;
- (8) Bidder delaying in submission of additional information or clarifications sought by CoPA, as applicable;

(9) Bidder makes any misrepresentation.

Each Bid shall be checked for compliance with the submission requirements set forth in this RFS before the evaluation of Bidder's fulfillment of Eligibility Criteria is taken up.

A. Evaluation of Bidder's fulfillment of eligibility criteria

Evaluation of Bidder's Eligibility will be carried out based on the information furnished by the Bidder as per the prescribed Formats and related documentary evidence in support of meeting the Eligibility Criteria as specified in Section III Eligibility Criteria

B. EVALUATION OF PRICE BID

The Price Bid of only the Qualified Bidders shall be opened in the GeM portal, on a date as may be intimated by CoPA to the Bidders through e-mail. The evaluation of Price Bid shall be carried out based on the information furnished in the BoQ. The Price bids shall be evaluated as follows:

- a. The lowest tariff among the competitive bidders
- b. The CoPA reserves the right to conduct the Reverse auction among the Pre-qualified bidders whose financial bids have been opened in order to explore the possibility of determining lowest tariff.

C. REVERSE AUCTION

CoPA shall conduct the Reverse Auction among the pre-qualified and the bidders whose financial bids are opened. The reverse auction will be conducted in the following situations.

In the case of the tariff, determined through tender process, is to be reduced/ revised as per KSERC's approval/ directions.

At least one week prior to reverse auction, an advance intimation regarding the date and time of the reverse auction will be informed to the Bidders among the Pre-qualified bidders whose financial bids have been opened.

Prior to the start of the Reverse auction, the lowest tariff of the Bidder will be displayed in the GeM Portal which will be the Starting bid price.

The minimum decrement value for tariff will be informed to the bidders while at the time of information of Reverse auction.

Bidders can only quote any value lower than the Starting bid price declared by the COPA.

During reverse auction, the Bidder shall not have the option to change the Scope or Capacity or any of the parameters contained in the Original Tender.

In the Bidder's bidding window, the following information can be viewed by the Bidder:

- a. The start price of the Bid.
 - b. The list of all the Bidders with their following details: Pseudo Identity, last quoted tariff and project capacity
- D.** The initial auction period will be of 01 (One) Hour with a provision of auto extension by eight Minutes from the scheduled/ extended period will be allowed by the system, this extension of eight minutes will be automatically given till such time when there is no bids during the eight minutes period and after which the Reverse auction will be closed and no further bids will be accepted.

SECTION - VI

OTHER PROVISIONS

1 ROLE OF STATE NODAL AGENCIES

It is envisaged that the CoPA shall arrange project implementation team, with project coordinator who will provide necessary support to facilitate the required approvals and sanctions in a time bound manner so as to achieve commissioning of the Projects within the scheduled Time line. This may include facilitation in the following areas:

- Coordination among various State and Central agencies for speedy implementation of projects
- Support during commissioning of projects and issue of commissioning certificates.
- The cost involved for getting approvals, statutory clearance etc shall be borne by the SPD

2 INTELLECTUAL PROPERTY/ COPYRIGHT AND PATENT

- i) The copyright in all drawings, documents and other materials containing data and information furnished to the Employer by the Contractor here in shall remain vested in the Contractor or, if they are furnished to the Employer directly or through the Contractor by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party. The Employer shall however be free to reproduce all drawings, documents, specification and other material furnished to the Employer for the purpose of the contract including, if required, for operation and maintenance of the facilities.
- ii) The Contractor shall indemnify the Employer against third party claims of infringement of patent, trademark or industrial design rights arising from use of goods or any part thereof in India.
- iii) Any IPR related issue should be taken care by the SPD. COPA will not be responsible.
- iv) The technology to be used for PV Modules, anchoring etc., shall be the latest in the market and got approved from the Engineer in charge of the Project.

SECTION - VII

SAMPLE FORMS & FORMATS FOR BID SUBMISSION

FORMATS FOR BID SUBMISSION

The following formats are required to be submitted as part of the RfS. These formats are designed to demonstrate the Bidder's compliance with the Qualification Requirements set forth in Section - III and other submission requirements specified in the RfS.

- 1) Format of Covering Letter (Format 7.1)
- 2) Format for Power of Attorney (Format 7.2)
- 3) Details of past experience of contractors for similar works (Format 7.14)
- 4) Details of proposed approach and methodology (Format 7.17)
- 5) Technical Requirements for Grid Connected Solar PV Projects (Annexure-A)
- 6) Integrity pact (Annexure F as per CoPA format available in the website)

COVERING LETTER

**(The Covering Letter should be submitted on the Letter Head of the Bidding Company/
Lead Member of Consortium)**

Ref.No.

Date:

From:(Insert name and address of Bidding Company/Lead Member of Consortium)

Tel.#:

Fax#:

E-mail address#

To

The Chief Mechanical Engineer

Cochin Port Authority

Sub: Response to RfS No. -----for Selection of Solar Power Developers for Setting up
of 1.5 MW Grid Connected Floating Solar Power Projects at Backwaters of Cochin
Port Authority.

Dear Sir/ Madam,

We, the undersigned.....[insert name of the ' Bidder'] having read, examined and understood in detail the RfS including Qualification Requirements in particular, terms and conditions of the standard PPA for supply of power for 25 years to CoPA, here by submit our response to RfS.

We confirm that in response to the aforesaid RfS, neither we nor any of our Ultimate Parent Company/ Parent Company/ Affiliate/ Group Company has submitted response to RfS other than this response to RfS, directly or indirectly, in response to the aforesaid RfS (as mentioned in Format 7.7 under Disclosure). We also confirm that we including our Ultimate Parent Company/ Parent Company/ Affiliate/ Group Companies directly or indirectly have not submitted response to RfS for more than cumulative capacity of 1.5 MW, including this response toRfS.

We are submitting RfS for the development of following Solar PV Project(s): -

Project No.	Capacity (MW)	Location of Project	Interconnection Point Details	Proposed CUF	Project Preference*

*The preferences of the Projects shall be considered only for the last successful bidder whose total quoted capacity is more than the balance capacity. In this case, allocation will be done as described in Section V of the RfS.

(Note: The Bidder must ensure the project capacity mentioned should be more than or equal to 0.75 MW and less than or equal to 1.5 MW for each project. Delete/Insert rows as applicable)

- 1..... We give our unconditional acceptance to the RfS, dated [Insert date in dd/mm/yyyy], standard PPA documents attached there to, issued by COPA. In token of our acceptance to the RfS, PPA documents along with the amendments and clarifications issued by COPA, the same have been digitally signed by us and enclosed with the response to RfS. We shall ensure that the PPA is executed as per the provisions of the RfS and provisions of PPA and shall be binding on us. Further, we confirm that the Project shall be commissioned within 06 months of the Effective Date of PPA.
2. Earnest Money Deposit (EMD): - (Please read Section-II, ITB carefully before filling)
We have enclosed EMD of INR (Insert Amount), in the form of Bank Guarantee no..... [Insert bank guarantee number] dated [Insert date of bank guarantee] as per Format 7.3A from[Insert name of bank providing bank guarantee] and valid up toin terms of, Section-II,ITB of this RfS. The total capacity of the Solar PV Project offered by us is MW [Insert cumulative capacity proposed].
3. We hereby declare that in the event our Project(s) get selected and we are not able to submit Bank Guarantee of the requisite value(s) towards PBG within due time as mentioned in, Section-II,ITB of this RfS on issue of LoA by CoPA for the selected Projects and/ or we are not able to sign PPA within the prescribed timelines with CoPA for the selected Projects, CoPA shall have the right to encash the EMD submitted by us and return the balance amount (if any) for the value of EMD pertaining to unsuccessful capacity.
4. We have submitted our response to RfS strictly as per Section-VII (Sample Forms and Formats) of this RfS, without any deviations, conditions and without mentioning any assumptions or notes in the said Formats.

5. We hereby declare that during the selection process, in the event our bid happens to be the last bid in the list of successful bids and COPA offers a capacity which is less than our quoted capacity due to overall bid capacity limit, we shall accept such offered capacity.
6. Acceptance:
We hereby unconditionally and irrevocably agree and accept that the decision made by CoPA in respect of any matter regarding or arising out of the RfS shall be binding on us. We hereby expressly waive and withdraw any deviation and claims in respect of this process.
7. Familiarity with Relevant Indian Laws & Regulations:-
We confirm that we have studied the provisions of the relevant Indian Laws and Regulations as required to enable us to submit this response to RfS and execute the PPA, in the event of our selection as Successful Bidder.
8. In case of our selection as the Successful bidder under the scheme and the project being executed by a Special Purpose Vehicle (SPV) incorporated by us which shall be our 100% subsidiary, we shall infuse necessary equity to the requirements of RfS. Further we will submit a Board Resolution prior to signing of PPA with CoPA, committing total equity infusion in the SPV as per the provisions of RfS.
9. We hereby undertake that in the event of our project being selected under the RfS, we shall be solely responsible for getting the connectivity prior to commissioning of the Project. In the event of delay in commissioning with the grid beyond 06 months, the provisions of the RfS/ relevant articles of PPA shall be applied on such projects. Further, the project shall not be considered as commissioned unless the connectivity with grid is established.
10. We are submitting our response to the RfS with formats duly signed as desired by you in the RfS online for your consideration.
11. It is confirmed that our response to the RfS is consistent with all the requirements of submission as stated in the RfS, including all clarifications and amendments and subsequent communications from COPA.
12. The information submitted in our response to the RfS is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our response to the RfS.
13. We confirm that all the terms and conditions of our Bid are valid upto -----(Insert date in dd/mm/yyyy) for acceptance [i.e. a period of 240 (Two Hundred Forty) Days from the last date of submission of response to RfS].
14. Contact Person
Details of the representative to be contacted by COPA are furnished as under:
Name :
Designation :
Company :
Address :

Phone Nos. :
Mobile Nos. :
Fax Nos. :
E-mail address :

15. We have neither made any statement nor provided any information in this Bid, which to the best of our knowledge is materially inaccurate or misleading. Further, all the confirmations, declarations and representations made in our Bid are true and accurate. In case this is found to be incorrect after our selection as Successful Bidder, we agree that the same would be treated as a Seller's event of default under PPA and consequent provisions of PPA shall apply.

Dated the day of , 2023

Thanking you,
We remain,
Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

PROFORMA OF POWER- OF-ATTORNEY/LETTER OF AUTHORITY

(To be submitted on Non-judicial Stamp Paper of appropriate value)

To

The Chief Mechanical Engineer,
Cochin Port Authority,
Cochin 682009.
Kerala, India.

Dear Sir,

We _____
do hereby confirm that Mr./Ms./Messrs _____ [INSERT
NAME AND ADDRESS], whose signature is given below, is /are authorized to
represent us to bid, negotiate and conclude the agreement on our behalf with you
against Tender for "-----"

(Tender No.....).

We confirm that we shall be bound by all and whatsoever our said agents shall commit.

Signature of the authorized person :

Name & Designation :

Yours faithfully,

Signature, name and seal of the certifying authority

FORMAT FOR POWER OF ATTORNEY
(Applicable Only in case of Consortiums)

(To be provided by each of the other members of the Consortium in favor of the Lead Member)

(To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper of Appropriate Value)

KNOW ALL MEN BY THESE PRESENTS THAT M/s..... having its registered office at,,and M/s..... having its registered office at, (Insert names and registered offices of all Members of the Consortium) the Members of Consortium have formed a Bidding Consortium named (insert name of the Consortium if finalized) (hereinafter called the 'Consortium') vide Consortium Agreement dated..... and having agreed to appoint M/s..... as the Lead Member of the said Consortium do hereby constitute, nominate and appoint M/s..... a company incorporated under the laws ofand having its Registered/ Head Office atas our duly constituted lawful Attorney (hereinafter called as Lead Member) to exercise all or any of the powers for and on behalf of the Consortium in regard to submission of the response to RfS No.....

We also authorize the said Lead Member to undertake the following acts:

- i) To submit on behalf of Consortium Members response to RfS.
- ii) To do any other act or submit any information and document related to the above response to RfS Bid.

It is expressly understood that in the event of the Consortium being selected as Successful Bidder, this Power of Attorney shall remain valid, binding and irrevocable until the Bidding Consortium achieves execution of PPA.

We as the Member of the Consortium agree and undertake to ratify and confirm all whatsoever the said Attorney/ Lead Member has done on behalf of the Consortium Members pursuant to this Power of Attorney and the same shall bind us and deemed to have been done by us.

IN WITNESS WHEREOF M/s....., as the Member of the Consortium have executed these presents on this..... day of under the Common Seal of our company.

For and on behalf of Consortium Member

M/s.....

----- (Signature of person authorized by the board) (Name
Designation Place: Date:)

Accepted

(Signature, Name, Designation and Address
of the person authorized by the board of the Lead Member)

Attested

(Signature of the executants)

(Signature & stamp of Notary of the place of execution)

Place:

Date:

Lead Member in the Consortium shall have the controlling shareholding in the Company as defined in Section-IV, Definition of Terms of the RfS.

FORMAT FOR EARNEST MONEY DEPOSIT (EMD)

(To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper of
Appropriate Value)

Reference:

Bank Guarantee No.:.....

Date:

In consideration of the ---- [Insert name of the Bidder] (hereinafter referred to as 'Bidder') submitting the response to RfS interalia for selection of the Project/ Projects of the cumulative capacity of -----MW [Insert cumulative Project capacity proposed] for supply of power there from on long term basis, in response to the RfS No. dated issued by Cochin Port Authority (hereinafter referred to as CoPA) and CoPA considering such response to the RfS of [insert the name of the Bidder as per the terms of the RfS, the [insert name & address of bank] hereby agrees unequivocally, irrevocably and unconditionally to pay to CoPA at [Insert Name of the Place from the address of CoPA] forthwith on demand in writing from CoPA or any Officer authorized by it in this behalf, any amount upto and not exceeding Rupees [Insert amount not less than that derived on the basis of 1 to 5% of the estimate value]__only, on behalf of M/s..... [Insert name of the Bidder].

This guarantee shall be valid and binding on this Bank upto and including ----- [insert date of validity in accordance with Clause No.--, Section-II, ITB of this RfS] and shall not be terminable by notice or any change in the constitution of the Bank or the term of contractor by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to INR.....(Indian Rupeesonly). Our Guarantee shall remain in force until.... [insert date of validity in accordance with Clause No. --, Section-II, ITB of this RfS]. CoPA shall be entitled to invoke this Guarantee till[insert date of validity in accordance with Clause No.--, Section-II, ITB of this RfS].

The Guarantor Bank hereby agrees and acknowledges that the CoPA shall have a right to invoke this BANK GUARANTEE in part or in full, as it may deem fit.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand by CoPA, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to CoPA.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by [Insert name of the Bidder] and/or

any other person. The Guarantor or Bank shall not require CoPA to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against CoPA in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at New Delhi shall have exclusive jurisdiction.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor or Bank and accordingly CoPA shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the Bidder, to make any claim against or any demand on the Bidder or to give any notice to the Bidder or to enforce any security held by CoPA or to exercise, levy or enforce any distress, diligence or other process against the Bidder.

The Guarantor Bank acknowledges that this BANK GUARANTEE is not personal to CoPA and may be assigned, in whole or in part, (whether absolutely or by way of security) by CoPA to any entity to whom CoPA is entitled to assign its rights and obligations under the PPA.

Notwithstanding anything contained herein above, our liability under this Guarantee is restricted to INR ----- (Indian Rupees Only) and it shall remain in force until [Date to be inserted on the basis of Clause No. --, Section-II, ITB of this RfS].

We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if CoPA serves upon us a written claim or demand.

Signature:

Name:

Power of Attorney No.:

For

[Insert Name and Address of the Bank]

Contact Details of the Bank: E-mail ID of the Bank:

Banker's Stamp and Full Address. Dated this day of _ ,20

PROFORMA OF IRREVOCABLE BANK GUARANTEE FOR PERFORMANCE GUARANTEE

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to Kerala)

In consideration of the ---- [Insert name of the Bidder] (hereinafter referred to as selected Successful Bidder(SB)) submitting the response to RfS for the capacity of MW under Floating solar PV Project in response to the RfS No _ dated..... issued by Cochin Port Authority (hereinafter referred to as CoPA) and COPA considering such response to the RfS of[insert the name of the Successful Bidder] (which expression shall unless repugnant to the context or meaning thereof include its executers, administrators, successors and assignees) and selecting the Solar Power Project of the Solar Power Developer and issuing Letter of allocation No ----- to-----[insert the name of the Successful Bidder(SB)) as per terms of RfS and the same having been accepted by the selected SB or a Project Company, M/s ----- {a Special Purpose Vehicle (SPV) formed for this purpose}, if applicable]. As per the terms of the RfS, the.....[insert name & address of bank] hereby agrees unequivocally, irrevocably and unconditionally to pay to COPA at_ [Insert Name of the Place from the address] of the COPA forthwith on demand in writing from COPA or any Officer authorized by it in this behalf, any amount upto and not exceeding Rupees [Total Value] only, on behalf of M/s.....Bidder(SB)/ Project Company] [Insert name of the selected Successful bidder

This guarantee shall be valid and binding on this Bank up to and including.....[insert date of validity] and shall not be terminable by notice or any change in the constitution of the Bank or the term of contract or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to Rs. (Rs. only) Our Guarantee shall remain in force until[insert date of validity) COPA shall be entitled to invoke this Guarantee till[Insert date which is 30 days after the date in the preceding sentence].

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand Cochin Port Authority, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to Cochin Port Authority.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by -----[Insert name of the Successful Bidder(SB)/ Project Company as applicable] and/or any other person. The Guarantor Bank shall not require COPA to justify the invocation of this BANKGUARANTEE, nor shall the Guarantor Bank have any recourse against COPA in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at Ernakulam shall have exclusive jurisdiction.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger,

amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly COPA shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the Successful Bidder(SB) / Project Company , to make any claim against or any demand on the Successful Bidder(SB)/ Project Company or to give any notice to the Successful Bidder(SB)/ Project Company or to enforce any security held by COPA or to exercise, levy or enforce any distress, diligence or other process against the Successful Bidder(SB)/ Project Company.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rs.(Rs. _____only) and it shall remain in force until We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if COPA serves upon us a written claim or demand.

Signature_____

Name

Power of Attorney No.

Email ID

For

[Insert Name of the Bank]
Stamp and Full Address. Dated this day of____

Banker's
, 20__

Witness:

1..... Signature

Name

Address

1. Signature Name and Address

FORMAT FOR BOARD RESOLUTIONS

The Board, after discussion, at the duly convened Meeting on [Insert date], with the Consent of all the Directors present and in compliance of the provisions of the Companies Act, 1956 or Companies Act 2013, as applicable, passed the following Resolution:

1. **RESOLVED THAT** Mr/Ms....., be and is hereby authorized to do on our behalf, all such acts, deeds and things necessary in connection with or incidental to our response to RfS vide RfS No.....for 'Selection of 1.5 MW(50MW x 03) Grid Connected Floating Solar Power Projects' in Backwaters of Cochin Port Authority, India, including signing and submission of all documents and providing information/response to RfS to Solar Energy Corporation of India Limited (COPA), representing us in all matters before COPA, and generally dealing with COPA in all matters in connection with our bid for the said Project. **(To be provided by the Bidding Company or the Lead Member of the Consortium)**
2. **FURTHER RESOLVED THAT** pursuant to the provisions of the Companies Act, 1956 or Companies Act, 2013, as applicable and compliance thereof and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded to invest total equity in the Project. **(To be provided by the Bidding Company)**

[Note: In the event the Bidder is a Bidding Consortium, in place of the above resolution at Sl. No. 2, the following resolutions are to be provided]

FURTHER RESOLVED THAT pursuant to the provisions of the Companies Act, 1956 or Companies Act, 2013, as applicable and compliance thereof and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded to invest (----%) equity [Insert the % equity commitment as specified in Consortium Agreement] in the Project. **(To be provided by each Member of the Bidding Consortium including Lead Member such that total equity is 100%)**

FURTHER RESOLVED THAT approval of the Board be and is hereby accorded to participate in consortium with M/s -----[Insert the name of other Members in the Consortium] and Mr/ Ms....., be and is hereby authorized to execute the Consortium Agreement. **(To be provided by each Member of the Bidding Consortium including Lead Member)**

And

FURTHER RESOLVED THAT approval of the Board be and is hereby accorded to contribute such additional amount over and above the percentage limit (specified for the Lead Member in the Consortium Agreement) to the extent becoming necessary towards the total equity share in the Project Company, obligatory on the part of the Consortium pursuant to the terms and conditions contained in the Consortium Agreement dated.....executed

by the Consortium as per the provisions of the RfS. **[To be passed by the Lead Member of the Bidding Consortium]**

3. **NOTUSED**

Certified True Copy

(Signature, Name and Stamp of Company Secretary) Notes:

- 1) This certified true copy should be submitted on the letterhead of the Company, signed by the Company Secretary/Director.
- 2) The contents of the format may be suitably re-worded indicating the identity of the entity passing the resolution.
- 3) This format may be modified only to the limited extent required to comply with the local regulations and laws applicable to a foreign entity submitting this resolution. For example, reference to Companies Act, 1956 or Companies Act, 2013 as applicable may be suitably modified to refer to the law applicable to the entity submitting the resolution. However, in such case, the foreign entity shall submit an unqualified opinion issued by the legal counsel of such foreign entity, stating that the Board resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing Company and the authorizations granted there in are true and valid.

Certified True Copy

(Signature, Name and Stamp of Company Secretary) Notes:

- 1) This certified true copy should be submitted on the letterhead of the Company, signed by the Company Secretary/Director.
- 2) The contents of the format may be suitably re-worded indicating the identity of the entity passing the resolution.
- 3) This format may be modified only to the limited extent required to comply with the local regulations and laws applicable to a foreign entity submitting this resolution. For example, reference to Companies Act, 1956 or Companies Act, 2013 as applicable may be suitably modified to refer to the law applicable to the entity submitting the resolution. However, in such case, the foreign entity shall submit an unqualified opinion issued by the legal counsel of such foreign entity, stating that the Board resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing Company and the authorizations granted there in are true and valid

FORMAT FOR CONSORTIUM AGREEMENT

(To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper of Appropriate Value)

THIS Consortium Agreement (“Agreement”) executed on this Day of Two Thousand Twenty Three between M/s..... [Insert name of Lead Member] a Company incorporated under the laws of and having its Registered Office

At(hereinafter called the “**Member-1**”, which expression shall include its successors, executors and permitted assigns) and M/s.... a Company incorporated under the laws of and having its Registered Office at (hereinafter called the “**Member-2**”, which expression shall include its successors, executors and permitted assigns), M/s..... a Company incorporated under the laws ofand having its Registered Office at (hereinafter called the “**Member-n**”, which expression shall include its successors, executors and permitted assigns), [The Bidding Consortium should list the details of all the Consortium Members] for the purpose of submitting response to RfS and execution of Power Purchase Agreement (in case of award), against RfS No. dated issued by Cochin Port Authority (COPA), a Company incorporated under the Companies Act, 2013, and having its Registered Office at D-3, 1stFloor, Wing-A, Prius Platinum Building, District Centre, Saket, NewDelhi-110017

WHEREAS, each Member individually shall be referred to as the “Member” and all of the Members shall be collectively referred to as the “Members” in this Agreement.

WHEREAS COPA desires to purchase Power under the said RfS.

WHEREAS, COPA had invited response to RfS vide its Request for Selection (RfS) No....

WHEREAS the RfS stipulates that in case response to RfS is being submitted by a Bidding Consortium, the Members of the Consortium will have to submit a legally enforceable Consortium Agreement in a format specified by COPA where in the Consortium Members have to commit equity investment of a specific percentage for the Project.

NOW THEREFORE, THIS AGREEMENT WITNESSTH AS UNDER:

In consideration of the above premises and agreements all the Members in this Bidding Consortium do hereby mutually agree as follows:

1. We, the Members of the Consortium and Members to the Agreement do hereby unequivocally agree that Member-1(M/s), shall act as the Lead Member as defined in the RfS for self and agent for and on behalf of Member-2, ----, Member-n and to submit the response to the RfS.
2. The Lead Member is hereby authorized by the Members of the Consortium and Members to the Agreement to bind the Consortium and receive instructions for and on their behalf.

3. Notwithstanding anything contrary contained in this Agreement, the Lead Member shall always be liable for the equity investment obligations of all the Consortium Members i.e. for both its own liability as well as the liability of other Members.
4. The Lead Member shall be liable and responsible for ensuring the individual and collective commitment of each of the Members of the Consortium in discharging all of their respective equity obligations. Each Member further undertakes to be individually liable for the performance of its part of the obligations without in any way limiting the scope of collective liability envisaged in this Agreement.
5. Subject to the term so this Agreement, the share of each Member of the Consortium in the issued equity share capital of the Project Company is/shall be in the following proportion:

Name	Percentage
Member 1	---
Member 2	---
Member n	---
Total	100%

We acknowledge that after the execution of PPA, the controlling shareholding (having not less than 51% of the voting rights and paid-up share capital) in the Project Company developing the Project shall be maintained for a period of 01 (One) Year after commencement of supply of power.

6. The Lead Member, on behalf of the Consortium, shall inter alia undertake full responsibility for liaising with Lenders or through internal accruals and mobilizing debt resources for the Project, and ensuring that the Seller achieves Financial Closure in terms of the PPA.
7. In case of any breach of any equity investment commitment by any of the Consortium Members, the Lead Member shall be liable for the consequences thereof.
8. Except as specified in the Agreement, it is agreed that sharing of responsibilities as aforesaid and equity investment obligations there to shall not in any way be a limitation of responsibility of the Lead Member under these presents.
9. It is further specifically agreed that the financial liability for equity contribution of the Lead Member shall not be limited in any way so as to restrict or limit its liabilities. The Lead Member shall be liable irrespective of its scope of work or financial commitments.
10. This Agreement shall be construed and interpreted in accordance with the Laws of India and courts at New Delhi alone shall have the exclusive jurisdiction in all matters relating thereto and arising there under.
11. It is hereby further agreed that in case of being selected as the Successful Bidder, the Members do hereby agree that they shall furnish the Performance Guarantee in

favour of COPA in terms of the RfS.

- 12. It is further expressly agreed that the Agreement shall be irrevocable and shall form an integral part of the Power Purchase Agreement (PPA) and shall remain valid until the expiration or early termination of the PPA in terms thereof, unless expressly agreed to the contrary by COPA/COPA.
- 13. The Lead Member is authorized and shall be fully responsible for the accuracy and veracity of there presentations and information submitted by the Members respectively from time to time in the response to RfS.
- 14. It is hereby expressly understood between the Members that no Member at any given point of time, may assign or delegate its rights, duties or obligations under the PPA except with prior written consent of COPA/COPA.
- 15. This Agreement
 - a) has been duly executed and delivered on behalf of each Member hereto and constitutes the legal, valid, binding and enforceable obligation of each such Member;
 - b) sets forth the entire understanding of the Members hereto with respect to the subject matter hereof; and
 - c) may not be amended or modified except in writing signed by each of the Members and with prior written consent of COPA/COPA.
- 16. All the terms used in capitals in this Agreement but not defined herein shall have the meaning as per the RfS and PPA.

IN WITNESS WHEREOF, the Members have, through their authorized representatives, executed these present on the Day, Month and Year first mentioned above.

For M/s [Member1]

(Signature, Name & Designation of the person authorized vide Board Resolution Dated)

Witnesses:

1)Signature-----

2) Signature -----

Name: Address:

Name: Address:

For M/s [Member2]

(Signature, Name & Designation of the person authorized vide Board Resolution Dated)

Witnesses:

1) Signature-----

Name:

Address:

For M/s _____[Members]

(Signature, Name & Designation of the
person authorized vide Board
Resolution Dated
)

2) Signature -----

Name:

Address:

Witnesses:

1) Signature-----

Name:

Address:

(2) Signature -----

Name:

Address:

FORMAT FOR FINANCIAL CAPABILITY

(To be submitted on the letterhead of Bidding Company)

To,

Cochin Port Authority
W/Island
Kochi-682009

Dear Sir,

Sub: Bid for "-----" in response to the RfS No-----

a. We submit our Bid(s) for the total capacity of kW (Insert total offered capacity in kW and submit details of our Financial Eligibility Criteria

We certify that the Financially Evaluated Entity (ies) had an Annual Turnover as follows:

The maximum Annual turnover of RupeesCrore per MW in any one of the last 3 financial years preceding the Bid Deadline subject to the condition that the Bidder should at least have completed one financial year .

OR

Net worth of Rs.....Crore computed as per instructions provided in Clause 2.4.3. (Strike Out whichever Is Not Applicable)

Financial eligibility criteria

Name of Financially Evaluated Entity*	Relationship with Bidding Company**	Financial year	Year of Incorporation of the Bidding company	***Total Maximum Annual Turnover (Rs. Crore)	Net worth as per Clause 2.4.3 (in Rs. Crore)

* The Financially Evaluated Entity may be the Bidding Company itself.

** The column for "Relationship with Bidding Company" is to be filled only in case financial capability of Parent Company and/or Affiliate has been used for meeting Qualification Requirements.

*** Bidder shall furnish maximum annual turnover in any of the last three financial years.

Yours faithfully

(Signature and stamp (on each page) of Authorized Signatory of Bidding Company.

Name:

.....

Date:.....

Place:.....

(Signature and stamp (on each page) of Chartered Accountant/Statutory Auditors of Bidding Company.

Name: Date: Place:

.....

Notes:

Audited consolidated annual accounts of the Bidder may also be used for the purpose of financial criteria provided the Bidder has at least 26% equity in each company whose accounts are merged in the audited consolidated accounts and provided further that the financial capability of such companies (of which accounts are being merged in the consolidated accounts) shall not be considered again for the purpose of evaluation of the Bid.

FORMAT FOR DISCLOSURE

(This should be submitted on the Letter Head of the Bidding Company/ Each Member of the Consortium)

DISCLOSURE

Ref. No.

Date:

From: (Insert name and address of Bidding Company)

Tel. #:

Fax #:

E-mail address#

To

Cochin Port Authority
W/Island

Sub: Response to RfS No. -----for Selection of Solar Power Developers for -----

Dear Sir/ Madam,

We hereby declare and confirm that only we are participating in the RfS Selection process for the RfS No. and that our Parent, Affiliate or Ultimate Parent or any Group Company with which we have direct or indirect relationship are not separately participating in this selection process.

We further declare that the above statement is true & correct. Wear aware that if at any stage it is found to be incorrect, our response to RfS will be rejected and if LoI has been issued or PPA has been signed, the same will be cancelled and the bank guarantees will be encashed and recoveries will be effected for the payments done.

Dated the day of , 20....

Thanking you,

We remain,

Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

FORMAT FOR TECHNICAL CRITERIA

(This should be submitted on the Letter Head of the Bidding Company/ Lead Member of Consortium)

Ref. No.

Date:

From: (Insert name and address of Bidding Company)

Tel.#:

Fax#:

E-mail address#

To

Cochin Port Authority

W/Island

Sub: Response to RfS No. ---- Dated ---- for Selection of Solar Power Developers for-----

Dear Sir/ Madam,

We hereby undertake to certify in line with **Clause No.--, Section-II, ITB** under the title "Financial Closure" that the following details shall also be furnished within **06 (Six) months** of effective date of the PPA.

- 1.0 Evidence of achieving complete tie-up of the Project Cost through internal accruals or through a Financing Agency.
- 2.0 Evidence of clear possession of the required water body for the Project along with following documentary evidence:-
 - i) Ownership or lease hold rights (as per Section-II, ITB) in the name of the Solar Power Developer and possession of 100% of the area of location required for the Project.
 - ii) Certificate by the concerned and competent revenue/ registration authority for the acquisition/ ownership/ righttouse/ vesting of the area in the name of the Solar Power Developer.
 - iii) Sworn affidavit/ any other agreement from the authorized signatory of the SPD listing the details of the location and certifying that total area required for the Project is under clear possession of the SPD.
 - iv) A certified English translation from an approved translator in case above

documents are in languages other than English and Hindi.

Failure or delay on our part in achieving the above conditions shall constitute sufficient grounds for encashment of our Performance Bank Guarantee.

Dated the day of , 20....

Thanking you,

We remain,

Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name
Power of Attorney/ Board Resolution/ Declaration.

**DECLARATION BY THE BIDDER FOR THE
PROPOSED TECHNOLOGY TIE-UP UNDER PART-B**

1	Name of Bidding Company/ Lead Member of Bidding Consortium	
2	Name of the Technology Partner (if any)	
3	Project Location	
4	Capacity Proposed MW
5	Technology Proposed to be adopted for the Project	
6	Estimated Annual Generation of Electrical Energy	kWh
7	Brief about the Proposed Technology	
	Crystalline Silicon Solar Cells and Modules	
	Concentrator PV Modules	
	Thin Film Modules	
	Any Other Technology	

Dated the_ day of , 20....

Thanking you,
We remain, Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

Selection of Solar Power Developers for-----

ORGANIZATION DETAILS

S. No	Particulars	Details
1	Name of the Company	
2	Registered Office Address	
3	Telephone, Telex, Fax No	
4	E-mail	
5	Web site	
6	Authorized Contact Person(s) with name, designation Address and Mobile Phone No., E-mail address/ Fax No. to whom all references shall be made	
7	Year of Incorporation	
8	Bidding company PAN Number	
9.	Bidding company TAN Number	
10.	Have the bidder/ Company ever been debarred By any Govt. Dept. / Undertaking for undertaking any work.	
11.	Reference of any document information attached by the Bidder other than specified in the RFP.	
12.	Whether the Bidder wishes to form a Project Company for execution of work	Yes/No/May be
13.	Bidding company is listed in India	Yes/No
14.	Details of the Ownership structure (Details of persons owning 10% or more of the Total Paid up equity of the Bidding Company in the Format as below	
15.	Bid Bond Bank guarantee No	
16.	Validity of Bid Bond	
17.	<ul style="list-style-type: none"> • Banker E-mail ID, • FAX No of the banker • Correspondence address & Pin Code 	

(Signature of Authorized Signatory) With Seal

Selection of Solar Power Developers for-----

Tenderer shall furnish Details of “eligibility works experience” as per Minimum Eligible Criteria (MEC) of Instruction to Tenderer and certificates in the following format (Client Certificates/work completion certificates or any other documentary evidences with respect to the eligibility work)

ELIGIBLE ASSIGNMENT DETAILS FOR MQC

Assignment Number :

Description	Bidder to fill up the details here
Name and Address of the Client	
Title of the Eligible Assignment	
Date of completion of the Eligible Assignment	
Project Completion Cost	
Reference No. of the enclosed Client Completion Certificate/ Documentary Evidence for having successfully completed the Eligible assignment	
Name, telephone no, telefax no and email address of the client’s representative	
Description and Scope of Work	

Instructions:

- i) Bidders are expected to provide information in respect of Eligible Assignments in this Section. The assignments cited must comply with the Minimum eligibility of the Instructions to Tenderers”.
- ii) A separate sheet should be filled for each of the eligible assignments.
- iii) The details are to be supplemented by documentary proof from the respective client /owner for having carried out such assignment duly certified by clients/ owner.
- iv) The works indicated in this Annexure- 4 will be only being considered for evaluation. Mere submission of work completion certificate will not be considered as Eligible Assignments
- v) Original or notary certified copy of completion certificates of each work issued by the owner/ the responsible officers of the owner under whom he has executed

such contracts shall be attached. The certificate shall invariably contain the following among other things.

- a) Details of work involved specifying the nature of work
 - b) The completion cost of the work and
 - c) Date of commencement ; and
 - d) Date of completion of the work.
- vi) If the experience in similar works is as a member of joint venture, notary attested copy of joint venture agreement in this respect shall be attached.
 - vii) If the experience in similar works is as a subcontractor, notary attested copy(s) of approval issued by the Employer(s) authorizing as a sub-contractor; in proof of the claim of the tenderer as a sub-contractor shall be attached.
 - viii) If the experience in similar work is in works executed in private sectors/organizations, the Form 26AS with notary attested copy(s) work order and completion certificate.
 - ix) The tenderer is also obliged to produce the original of the certified copy(s) on request by the department.

Signature
(Authorized Signatory)

Format 7.14

Selection of Solar Power Developers for_____

DETAILS OF PAST EXPERIENCE OF CONTRACTORS FOR SIMILAR WORKS

Sl. No.	Name & Location of Project	Owner's Complete address including TeleFax No. with contact Person	Value of Contract	Duration of Contract			Details of work including major items of work involved	Reference No. & Date of letter of intent & completion certificate enclosed
				Comment date	Scheduled completion date	Actual completion date		
1	2	3	4	5	6	7	8	9

Note: Bidder to enclose completion certificate issued by owner, certified by a Notary public or equivalent certifying authority.

SIGNATURE OF TENDERER

Certificate of Relationship of Parent Company or Affiliate with the Bidding Company

To,

Cochin Port Authority
W/Island
Kochi-682009

Dear Sir,

Sub: Bid for Implementation of 1.5MWp floating solar system at Cochin Port Authority

We hereby certify that M/s.....M/s.....M/s.....are the Affiliate(s) /Parent Company of the Bidding Company as per the definition of Affiliate/Parent Company as provided in this RFS and based on details of equity holding as on seven (7) days prior to the Bid Deadline.

The details of equity holding of the Affiliate/Parent Company/Bidding Company or vice versa as on seven (7) days prior to the Bid Deadline are given as below:

Name of Bidding Company/ applicant company	Name of the Affiliate of the Bidding company/ Applicant company/ Name of the Parent Company of the Bidding Company	Name of the Company having common control on the Affiliate and the Bidding Company	Percentage of Equity Holding of Parent Company in the Bidding Company/ Applicant company

*Strike out whichever is not applicable.

(Insert Name and Signature of Statutory Auditor or practicing Company Secretary of the Bidder)

Undertaking from the Financially Evaluated Entity or its Parent Company/ Ultimate Parent Company

(On the Letter Head of the Financially Evaluated Entity or its Parent Company/Ultimate Parent Company)

Name:

Full Address:

Telephone No.:

E-mail address:

Fax/No.:

To

Cochin Port Authority

W/Island

Kochi-682009

Dear Sir,

We refer to the RFP No.....dated.....for “-----”

“We have carefully read and examined in detail the RFP, including in particular, Clauseof the RFP, regarding submission of an undertaking, as per the prescribed Format of the RFP.

We confirm that M/s.....(Insert name of Bidding Company/) has been authorized by us to use our Technical and or financial capability for meeting the Technical and or Financial Eligibility as specified in Clause....of the RFP referred to above.

We have also noted the amount of the Performance Guarantee required to be submitted as per Clause....of the RFP the(Insert the name of the Bidding Company) in the event of it being selected as the Successful Bidder”.

In view of the above, we hereby undertake to you and confirm that in the event of failure of.....(Insert name of the Bidding Company) to submit the Performance Guarantee in full or in part at any stage, as specified in the RFP, we shall submit the Performance

Guarantee not submitted by(Insert name of the Bidding Company)".

We have attached hereto certified true copy of the Board Resolution Whereby the Board of Directors of our Company has approved issue of this Undertaking by the Company.

All the terms used herein but not defined, shall have the meaning as ascribed to the said terms under the RFP.

Signature of Managing Director/ Authorised signatory

Common seal ofhas been affixed in my/our presence pursuant to Board of Director's Resolution dated.....

WITNESS

..... (Signature)
Name..... Designation.....

..... (Signature)
Name..... Designation.....

Selection of Solar Power Developers for-----

DETAILS OF PROPOSED APPROACH & METHODOLOGY

Bidder shall furnish a detailed method statement (Technical Note) for carrying out of the works, along with a construction programme [Preferably in MS project / Primavera] showing sequence of operation and the time frame for various segments of temporary and permanent works.

Signature
(Authorized Signatory)

Selection of Solar Power Developers for -----

DECLARATION

We M/s (Name & address of the bidder) hereby declare that:-

1. All details regarding construction plant, temporary work and personnel for site organization considered necessary and sufficient for the work have been furnished in the Annexure 7 and that such plant, temporary works and personnel for site organization will be available at the site till the completion of the respective work.
2. No conditions are incorporated in the financial bid. In case any conditions are specified in the financial bid, the tender will be rejected summarily without making any further reference to the bidder.
3. We have not made any payment or illegal gratification to any persons/ authority connected with the bid process so as to influence the bid process and have not committed any offence under PC Act in connection with the bid.
4. We disclose with that we have * made / not made payments or propose to be made to any intermediaries (agents) etc in connection with the bid.
5. We do hereby confirm that no changes have been made in the tender document downloaded and submitted by us for the above bid. Port Tender document will be treated as authentic tender and if any discrepancy is noticed at any stage between the Port's tender document and the one submitted by the tenderer, the Port's document shall prevail.

Signature
(Authorised Signatory)

*** Note: Delete whichever is not applicable.**

DETAILS OF THE PARTY OPTING FOR REFUND OF EMD THROUGH E-PAYMENT SYSTEM

Name of the Party :

Bank A/c No :

Account type : (Savings / Current / Overdraft)

Bank Name :

Branch :

IFSC Code Number : (11 digit code)

Centre (Location) :

FAX No. :

E-Mail ID : (For forwarding information of remittance)

Mobile No :

Signature
(Authorized Signatory)

Format 7.20

FORMAT FOR FURNISHING BANK INFORMATION FOR e-PAYMENT

1	Name and full address of the beneficiary	
2	Credit Account No. (Should be full 14 digit)	
3	Account Type (SB or CA or OD)	
4	Name of the Bank	
5	Branch (Full address with telephone No.)	
6	MICR code (Should be 9 digit)	
7	Telephone/Mobile/Fax No. of the beneficiary	Telephone :
		Mobile :
		Fax :
8	Cancelled Cheque	

Signature with seal
(Authorised Signatory)

TECHNICAL SPECIFICATION OF GRID CONNECTED FLOATING SOLAR PV POWER SYSTEM AND OTHER COMPONENTS

The proposed project shall be commissioned as per the technical specifications given below:

1. DEFINITION

The Grid Connected Floating Solar Photo Voltaic (PV) power plant of 1.5 MWp capacity consists of PV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter and Controls & Protections, interconnect cables and switches. PV Array shall be mounted on a suitable structure. The design and commissioning also shall be as per latest IEC/BIS standards.

2. SITE DETAILS AND SITE ASSESSMENT

The following are some of the technical measures required to ensure quality of the major components used in grid connected solar power Projects:

- a) The 1.5 MW Floating Solar Power Plant shall be installed at the Backwaters near CoPA's Walkway Avenue between BOT junction and Kannangatt bridge at W/Island, Cochin Port Authority, Kerala.
- b) Claims and objections due to ignorance of site condition will not be considered after submission of the bid. Bidder shall fully acquaint himself to the nature of work, location and other environmental conditions and necessary statutory approvals required for the commissioning of the 1.5 MWp floating solar project. The bidder shall be deemed to have independently obtained all the necessary information required for the submission of the bid.
- c) Bidder should have visited and carefully examined the site and surroundings for development of Floating Solar PV project.
- d) Bidder should acquaint himself of the statutory requirements / approvals essentially required for the successful implementation of the Floating Solar PV project from the authorities like KSERC, CEA , KCZMA and shall coordinate with Statutory Authorities along with CoPA and CoPA will issue necessary authorization/ letters to approach the statutory authorities.

3. FLOATING SOLAR SYSTEM

3.1. SYSTEM DESCRIPTION:

A Grid Connected Floating Solar Photovoltaic (FSPV) System shall consist of mainly the following components but not limited to any other components and accessories required to install and commission the same.

- a) Solar panels consisting of adequate capacity of solar PV Modules of suitable rating.
- b) Module mounting structure.
- c) Floating system.

- d) Mooring and anchoring system.
 - e) String monitoring units/ Junction boxes.
 - f) Grid interactive Power Conditioning Unit with (PCU) of suitable rating along with MPPT mechanism.
 - g) Inverter rated Transformer
 - h) 11kV Transmission line
 - i) Metering system.
 - j) Earthing system and lightning protection
 - k) IR/UV protected Cable and other accessories. DC and AC power cables of appropriate size with cable termination kit
 - l) 11kV Breaker panel with necessary protection and metering
 - m) The solar PV Project shall be compatible with the proposed Supervisory Control and Data Acquisition (SCADA) and should be integrated with the software.
 - n) Indoor 11kV switchgear panels including Vacuum Circuit Breakers, Current Transformers, Voltage Transformers, Relays and other accessories for complete protection at the point of interconnection.
 - o) ABT / SMART meters with all necessary metering rated CTs and PTs at the interconnecting substation as per CEA metering regulation 2006 as amended time to time and state metering code
 - p) Any other equipment/ material, not mentioned but required to complete the solar power plant facilities in all respect.
- A. The design of Floating Solar system shall be certified by the Third Party accredited agencies competent to approve the design.
 - B. The floating system shall be designed in such a way that it shall appropriately incorporate walking platforms for regular maintenance and inspection.
 - C. Appropriate anchoring/ mooring system shall be designed to keep the floating platforms in position in order to adopt tidal waves, wind and water level variations of the location. The same shall be designed to ensure that the Floating PV panels along with mounting structure always float on the surface of water.

3.2 SOLAR PHOTOVOLTAIC MODULES (PVMODULES)

- 1) The Design requirements of Photo Voltaic arrays PV including DC array wiring, electrical protection devices and earthing provisions shall confirm to IEC 62548.
- 2) Modules installed shall use RF identification tag and contain the following information.
 - a) Name of the manufacturer of the PV module.
 - b) Name of the manufacturer of Solar Cells.
 - c) Month & year of the manufacture (separate for solar cells and modules)
 - d) Country of origin (separately for solar cells and module)
 - e) Unique Serial No and Model No of the module
 - f) Valid certification of PV module.

- 3) Use of advanced cell technologies
 - a) The Contractor shall try to maximize the output within the allocated area. The contractor shall employ the latest technology.
 - b) Based on the technology employed, the contractor has to design Electrical System Features, Architecture and Structural requirement and the same shall be approved by CoPA Engineers.
 - c) Standards and Codes

The PV Modules used in the grid solar power projects shall normally qualify the latest edition of the following IEC PV module qualification test/ equivalent BIS standards as specified below: -

Standard	Description
IEC 63049	Defines the process starting from shipments of components to the installation site and includes the transport, unpacking, racking, construction, module installation process and operation and maintenance of the PV system,
IEC 62446 - 1	Defines the information and documentation required to hand over the customer following the installation of Grid connected PV system. It also describes the commissioning tests, inspection criteria and documentation for the safe installation and correct operation of the system.
IEC 61829	ON-SITE measurement of Current-Voltage characteristics. This standard specifies procedures for on site measurement of flat plate Photo Voltaic array characteristics, the accompanying meteorological conditions and translating to Standard Test Conditions (STC) or other selected conditions. Measurement of PV array Current-Voltage (I-V) characteristics under actual on - site conditions.
IEC 62446-2	System maintenance. Defines Preventive, Corrective and performance related Maintenance requirements and recommendations for Grid connected PV Systems. The procedure covers Basic maintenance of the System components and connections for reliability, safety and Fire prevention.
IEC 61724 - 1	Out lines Terminology, Equipment and Methods for Performance monitoring and Analysis of Photo Voltaic (PV) Systems. Monitoring of Bifacial Systems. Irradiance Sensor requirements. Soiling measurement based on latest technology.
IEC 61724 - 2	Photo Voltaic System Performance – Part – 2. Capacity Evaluation method. Defines the procedure for comparing the measured power produced against the expected power from a PV System.

3.3 FLOATING DEVICE

- a) The floatation device should be manufactured from appropriate thermoplastic with suitable UV stabilizer or thermoset plastic with suitable UV stabilizer or any other suitable material which shall not effect the water quality or contaminate the water. The life of floatation device shall be able to sustain for a minimum period of 25 years without any discoloration.
- b) Float system should be designed to withstand the maximum wind speed of the location as per Wind Zone Map of India and shall be able to withstand the weight of O&M Personnel, carrying Tools, the forces of nature such as wind, waves and water flow etc.
- c) The material used for floatation device shall be chemically resistant to acid, lye, petrol and mineral oil etc.
- d) The floatation device, when installed in the backwaters shall not restrict the air flow around the panels. In order to facilitate this, the design of the floatation device shall be such that appropriate voids and shall form an integral part of the floatation device design.
- e) The Solar System shall confirm to the below mentioned standards, but not limited and is free to adopt better standards established and acceptable to the employer.

Standards and Codes:-

Sl. No.	Standards	Description
1	ASTM D1693 (or equivalent ISO Standards)	Test for Environmental Stress Cracking of HDPE
2.	ISO16770	Stress cracking resistance of HDPE
3.	ASTM D790 (or equivalent ISO Standards)	Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
4.	ISO 178	Plastics -- Determination of flexural properties
5.	ASTM D638, ISO 527	Standard Test Method for Tensile Properties of Plastics
6.	ASTM D695, ISO 604	Standard Test Method for Compressive Strength Properties of Plastics
7.	ISO16770	Full Notch Creep Test (FNCT)
8.	ASTM D2565 (or equivalent ISO Standards)	Standard Practice for Xenon-Arc Exposure of Plastic intended for outdoor Applications
9.	ASTM D4329(or equivalent ISO Standards)	Standard Practice for fluorescent ultraviolet (UV) lamp apparatus exposure of plastics
10.	ASTM G7/G7M-11(or equivalent ISO Standards)	Standard Practice for atmospheric environmental exposure testing of non-metallic
11.	ASTM D1693-15 (or equivalent ISO Standards)	Standard Test Method for Environmental stress cracking of Ethylene plastics
12.	ASTM D5397-07(2012)	Standard Test Method for Environmental stress crack resistance of polyolefin geo-membrane

3.4 ANCHORING / MOORINGSYSTEM

- a) The minimum Life of the Anchoring system shall be 25years.
- b) The Anchors shall be sturdy enough to withstand wind speed at that location
- c) Anchoring system shall be able to withstand the depth/level variation of water level
- d) The materials used in the anchoring system shall not contaminate the back waters or affect the aquatic ecosystem.
- e) The design of anchoring system shall be certified by an accredited national/ international lab to fulfill the above conditions.
- f) The Anchoring/ Mooring system shall comply with latest edition of API RP 2SK or any applicable standards.

3.5 JUNCTION BOXES (JBs)

- a) The junction boxes are to be provided in the PV array for termination of connecting cables. The J. Boxes (JBs) shall be made of GRP/FRP/Powder Coated Aluminum /cast aluminum alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JB's shall be such that input & output termination can be made through suitable cable glands.
- b) Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single / double compression cable glands, Provision for earthing the box must be provided.
- c) Each Junction Box shall have High quality Suitable Capacity Metal Oxide Varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups
- d) Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification

The junction boxes/ enclosures should be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications

3.6 DC DISTRIBUTION BOARD:

- a) DC Distribution Board to receive the DC output from the array field.
- b) DC DBs shall have enclosure of dust & vermin proof conforming to IP 65 protection. The bus bars shall be made of copper of desired size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.

3.7 AC DISTRIBUTION BOARD:

- a) AC Distribution Board (DB) shall control the AC power from PCU/ inverter, and should have necessary surge arrestors.
- b) All switches and the circuit breakers, connectors should conform to IEC 60947/IS60947, part I.
- c) The change over switches, cabling work should be undertaken by the bidder as part of the project.

- d) All the Panels shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubicle type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz .
- e) The panels shall be designed for minimum expected ambient temperature of 50 degrees Celsius, 80 percent humidity and dusty weather.
- f) All indoor panels shall have protection of IP54 or better standards. All outdoor panels shall have protection of IP65 or better standards.
- g) Should conform to latest Indian Electricity Act and rules.
- h) All the 415 or 230 volt AC devices / equipment like bus support insulators, circuit breakers, Surge Protection Devices, Voltage Transformers etc., mounted inside the switchgear shall be suitable for continuous operation .

3.8 POWER CONDITIONERS / INVERTERS

- a) PCU / ARRAY SIZE RATIO:
- b) The combined wattage of all inverters shall be sufficient for achieving 1.5MWp solar generation under Standard Testing Conditions.
- c) Maximum c power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.
- d) PCU/ INVERTER:

As PV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the “Power Conditioning Unit (PCU)”. In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, the power conditioning unit/inverter should also be DG set interactive, if necessary. Inverter output should be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

- Switching devices: IGBT/MOSFET
- Controller Type: Microprocessor /DSP
- Nominal AC output voltage and frequency: 415V, 3 Phase, 50 Hz
- Output frequency: 50 Hz
- Grid Frequency Synchronization range shall be between 49.7Hz to 50.3Hz as per CEA Regulations 2010.
- Ambient temperature considered: -20o C to 50o C
- Humidity: 95 % Non-condensing
- Protection of Enclosure: IP54 (Min.) for indoor / IP-65(Min) for outdoor
- Grid Voltage tolerance: - 20% & + 15 %
- No-load losses: Less than 1% of rated power
- Inverter efficiency (minimum): >93%
- HD: < 3%
- PF: >0.95
- i) PCU/inverter shall be capable of complete automatic operation including wakeup, synchronization & shutdown.
- ii) The output power factor of PCU inverter shall be suitable for all voltage ranges or sink of

- reactive power, inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.
- iii) Built-in meter and data logger to monitor plant performance through external computer shall be provided.
 - iv) The power conditioning units / inverters should comply with applicable IEC/ equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068- 2(1,2,14,30) /Equivalent BIS Std.
 - v) The charge controller (if any) / MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS Std.
 - vi) The PCU/ inverters should be tested from the MNRE approved test centers / NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these shall be approved by any IACS certified testing lab.
- e) **INTEGRATION OF PV POWER WITH GRID:**
 The output power from PV would be fed to the inverters which converts DC produced by PV array to AC and feeds it into the 11kV grid of the 110kV substation of CoPA at Willingdon Island after synchronization. In case of grid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid.
- f) The Power Conditioners/Inverters of the PV power plants must conform to the latest edition of IEC/ equivalent BIS Standards as specified below:

Efficiency Measurements	IEC 61683
Environmental Testing	IEC 60068-2/ IEC 62093
Electromagnetic Compatibility (EMC)	IEC 61000-6-2, IEC 61000-6-4 & other relevant parts of IEC 61000
Electrical Safety	IEC 62103/ 62109-1&2/ IS 16221-1&2
Protection against Islanding of Grid (Anti-Islanding Protection)	IEEE1547/IEC Standards 62116/ UL1741/ IS 16169 Or equivalent BIS
LVRT Compliance (Low voltage Ride Through)	As per the latest CERC Guidelines/ Order/ Regulations
Grid Connectivity	Relevant CERC Regulations (including LVRT Compliance) and Grid Code as amended and revised from time to time.
Rated capacity	Nominal/ Rated output power of the inverter (if different power ratings are mentioned at different temperatures, then power rating at 50 ⁰ C shall be considered) in kW will be considered as inverter rated capacity.
Approved makes	As per MNRE / BIS list of approved makes

3.9 TRANSFORMER & METERING:

- a) Dry/oil type relevant kVA, 415V /11kV, 50 Hz Step up Inverter rated Transformer along with all protections, switch gears, Vacuum circuit breakers, cables etc. along with required civil work. All the SS components shall be of SS304/ SS316 grade.
- b) Transformers having 11 kV at HV side with breaker on LT and HT sides shall be used for stepping up the voltage to 11kV for the Solar Power Plant.
- c) Transformers shall be of reputed make and should have relevant IS or international standards. Transformers shall have all relevant monitoring and protection devices as per the relevant Indian Standards/ International standards.
- d) Rating of each transformer shall be standard type. The transformer manufacturer shall provide test certificates carried out on the transformers as per relevant IS standards. 11 kV Transformer shall conform to IS: 2026.
- e) LV windings voltage is decided based on the inverter output voltage. The rating of transformer (kVA) is decided based on combined rating of Inverters.
- f) The high voltage power from the transformers is routed through 11kV HT cable to 110kV substation
- g) The bidirectional SMART meter (0.2 S class) shall be installed for the measurement of energy.
- h) The bidder shall take approval from CEA (Central Electricity Authority) for the connectivity, technical feasibility, and synchronization of PV plant with distribution network and submit the same to CoPA before commissioning of PV plant.

3.10 PROTECTIONS

The system should be provided with all necessary protections like earthing, Lightning, and grid islanding as follows:

3.10.1 LIGHTNING PROTECTION

The PV power plants shall be provided with lightning & over voltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc. The entire space occupying the PV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per IS/IEC 62305 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

3.10.2 SURGE PROTECTION

Internal surge protection shall consist of three MOV type surge-arrestors connected from +ve and -ve terminals to earth (via Y arrangement)

3.10.3 EARTHING PROTECTION

Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

3.10.4 GRID ISLANDING:

- a) In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as "islands." Powered islands present a risk to workers who may expect the area to be

unpowered, and they may also damage grid-tied equipment. The PV system shall be equipped with islanding protection.

In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.

- b) A manual disconnect 4pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel

3.10.5 HT EQUIPMENT

- a) The 11 kV side equipment and parts shall be earthed as required under provisions of IS 3043. The system shall be designed with appropriate CTs & PTs to have all relevant protection. In addition, CTs and PTs shall also be provided for metering and protection purposes as elsewhere specified.
- b) The HT side shall have the following protections
- c) Over current & earth fault relay with under voltage & over voltage protection under and over frequency protection relays.
- d) Reverse Power Relay shall be provided in 11kV VCB panel.
- e) The Solar PV system and associated power transmission system shall be protected as per relevant Indian Standards.

3.10.6 Earthing

Standards and Codes

Earthing system shall comply with latest revisions and amendments of the relevant IEC standards and IS codes. In particular, Earthing system shall comply with the following standards and codes.

Standard/Code	Description
IS 3043	Code of Practice for Earthing
IEEE 80	IEEE Guide for Safety in AC Substation Grounding
IEEE 142	IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems

3.11 EXPORT OF SURPLUS ENERGY

The surplus energy during any time block can be exported to KSEB Ltd’ Grid.

3.12 CABLES ANDCONNECTORS

All cables and connectors to be used for installation of solar field must be of solar grade which can withstand harsh environment conditions for 25 years and voltages as per latest IEC standards. The Cables of 600-1800 Volts DC for outdoor installations complying with the BIS/International Standards shall be used.

The cables laid in the water area shall be of submarine power cables conforming to IEC63026-2019. Cables should have adequate protection system to withstand the adverse environmental condition of the site.

Cables of appropriate size to be used in the system shall have the following characteristics:

- a) Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
- b) Temp. Range: -10°C to +50°C.
- c) Voltage rating 660/1100VAC.
- d) Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- e) Flexible
- f) Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.
- g) Cable Routing/ Marking: All cable/wires are to be routed through suitable cable tray arrangements to withstand the marine atmosphere tagged and marked with proper manner by good quality ferrule or by other means so that the cable can be easily identified.
- h) The Cable should be so selected that it should be compatible to the life of the solar PV panels i.e. 25years.
- i) The ratings given are approximate. Bidder has to indicate size and length as per system design requirement. All the cables required for the solar plant are to be provided by the bidder. All cable laying schedules/layout drawings shall be got approved prior to installation.
- j) Multi Stranded, annealed high conductivity copper conductor PVC type 'A' pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armored cable for underground laying. All cable trays including covers to be provided. All cables shall conform to latest edition of IEC/ equivalent BIS standards.
- k) Description Standard Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V, UV resistant for outdoor installation IS /IEC 69947.
- l) The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.
- m) The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.

3.13 DANGER BOARDS AND SIGNAGES:

Danger boards should be provided wherever necessary as per Indian Electricity Act/Rules as amended from time to time. The signages shall be provided at appropriate places. Text of the signage shall be approved by the employer.

3.14 FIRE EXTINGUISHERS:

The firefighting system for the proposed power plant for fire protection shall be consisting of:

- a) Portable fire extinguishers in the control room for fire caused by electrical short circuits
- b) Sand buckets in the control room
- c) The installation of Fire Extinguishers should confirm to BIS standards. The fire extinguishers shall be provided in the control room housing PCUs.

3.15 DRAWINGS & MANUALS:

Six sets of Electrical drawings installation and O&M manuals shall be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.

3.16 PLANNING AND DESIGNING:

- a) The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of sunlight.
- b) The bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The bidder submits three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

3.17 DRAWINGS TO BE FURNISHED BY BIDDER AFTER AWARD OF CONTRACT

The Contractor shall furnish the following drawings and submit to CoPA after getting approval from third party inspection agency for approval

- a) General arrangement and dimensioned layout
- b) Schematic drawing showing the requirement of PV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
- c) Structural drawing of the PV Array, Mounting Structure, Anchoring Arrangements and Foundation..
- d) Itemized bill of material for complete PV plant covering all the components and associated accessories.
- e) Layout of solar Power Array
- f) Shadow analysis of the area proposed

3.18 SOLAR PV SYSTEM FOR MEETING THE ANNUAL ENERGY REQUIREMENT

Key Performance Indicators

The contractor shall furnish monthly reports on above, without fail.

- 1) PV Array Energy Yield
- 2) Final System Yield
- 3) PV System Efficiency (DC/AC)
- 4) CO2 Savings
- 5) Environment, Health & Safety

3.19 SAFETY MEASURES:

The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA Regulation 2010 as amended from time to time.

3.20 Interface to the SCADA system:

The Solar panel Developer shall provide SCADA accessibility to the solar power plant with SCADA proposed to be installed by CoPA under RDSS so as to monitor, control and rectify the faults immediately. Hardware and software used in solar power plant shall be in compliance with CEA cyber security guidelines/norms for power plant.

3.21 DATA ACQUISITION SYSTEM / PLANT MONITORING

Data Acquisition System shall be provided for each of the solar PV plant. It shall be communicated with the proposed SCADA network of CoPA.

4. SAFE DISPOSAL OF SOLAR PVMODULES

The SPD will ensure that all Solar PV modules, floats, and other components from their plant after their 'end of life' (when they become defective/ non-operational/ non-repairable) are disposed in accordance with the "e-waste (Management and Handling) Rules, 2011" notified by the Government and as revised and amended from time to time.

5. STATUTORY APPROVALS

Any neglect or omission or failure on the part of the bidder in obtaining necessary clearances and reliable information upon the forgoing or any other matter affecting the bid shall not relieve him from any risks or liabilities or the entire responsibility for completion of the work in accordance with the bid.

6. RIGHT OF INSPECTION

- A. COPA reserves the right to inspect the components before dispatch at site.
(or) alternatively give dispatch clearance based on the testing & certification by third party Inspection agency. The cost of third party inspection shall be borne by the solar power developer and the third party inspection agency shall be got approved from CoPA before appointing them.
- B. COPA, reserves the right to witness Third party test been performed by accredited testing laboratory in India.
- C. SPD shall provide access to COPA for monitoring the performance of the grid connected Floating Solar PV Project during the contract period.
- D. The SPDs shall provide access to COPA for installing any additional monitoring equipment to facilitate on-line transfer of data.

7. SUBMISSION DETAILS

The SPD shall provide/submit, free of cost to COPA all the Detailed Engineering Document with detailed specification, schematic drawing, circuit drawing, cable routing plans and test results, manuals for all deliverable items, Operation, Maintenance & Safety Instruction Manual and other information about the project, Bill of material, data etc.

COMMISSIONING PROCEDURE

(This is for Reference Only; The Commissioning Procedure will be guided by as per PPA)

- i) The plant shall be commissioned only on getting statutory approval for energization by CEA and other statutory bodies.
- ii) SPDs shall give to COPA at least 30 (Thirty) Days advance written notice, of the date on which it intends to synchronize the Power Project to the Grid System. The SPD shall be solely responsible for any delay or non-receipt of the notice by the concerned agencies, which may in turn affect the Commissioning Schedule of the Project.
- iii) A Solar PV Project will be considered as commissioned if all equipment as per rated project capacity has been installed and energy has flown into 11 kV grid at 110 KV Substation located at Willingdon Island.
- iv) SPD shall ensure that the equipment up to the rated Capacity has been installed and completed in all respects before the Scheduled Commissioning Date. The same shall be tested and certified by the Engineer in charge of the project.

Documents to be submitted to COPA:

The SPD will have to submit the following documents (duly signed and stamped by authorized signatory) well in advance prior to the scheduled commissioning date. The SPD shall also have to submit the hardcopies to COPA if asked by COPA for verification/ cross check.

1. Invoice(s) of the Major Equipment(s) (including but not limited to PV arrays, modules, Inverters/ PCUs, Transformers/ Cables and for all the equipment installed at the site.
2. All supporting documents towards meeting the technical compliance along with datasheet/warranty certificates/contract agreement etc. as mentioned in Annexure-A (if some documents already verified by MNRE appointed committee prior to Financial Closure, may not be required which shall be updated on CPM portal)
3. Plant Layout clearly mentioning the details of rows and number of modules in each row.
4. Documents to be submitted to CEA for online application for the approval of 1.5 MWp Solar plant, CEA inspection report along with all annexure/ attachments and CEA compliance report ,Energisation report to CEA. .
5. SPD shall ensure Connectivity to the grid.
6. Supporting document for "Consent to Operate"
7. Snap Shots of the Plant from various angles shall be taken for covering installation of important components of the solar power plant and made part of Installation Report.
8. Reading of all the inverters (instantaneous and total generation) along with its serial number of a particular date.

9. After the submission of the documents by SPD, COPA shall verify the documents and intimate/reply with remarks. In case any additional supporting/revised documents are asked by COPA, the same have to be submitted by the SPD.
10. After the proposed commissioning date the Engineer-in charge will visit the site within 07 working days to verify the technical compliance on site as per the information submitted by the SPD. In case any deviation/ discrepancy has been observed from the information submitted by the SPD, the same shall be rectified and witnessed by the engineer - in charge and certified.
11. SPD shall have to furnish the required plant related data to COPA's designated server in suitable formats for accessibility. Additionally, SPD shall also provide the login details/SCADA login to COPA for online real time data monitoring. CEA cyber security rules shall be complied with before connecting the plant data to CoPA server.
12. Early Commissioning of a Solar Project prior to the scheduled commissioning date is permitted on acceptance of power by COPA. Inorder to facilitate this, SPDs shall inform COPA well in advance the date on which it intends to synchronize the Power Project to the Grid System. The SPD shall be required to give an advance notice of at least 30 days prior to the proposed commissioning date.
13. Meter Reading shall be taken at the 110 KV Substation at the time of connectivity of the Project with Grid. This shall include information of respective meters installed at delivery/interconnection point.
14. Solar Power Developers would be required to plan commissioning/synchronization with grid at least 10 (Ten) Days ahead of the last permissible date for commissioning.

INSTALLATION REPORT

(To be provided by SPD and to be submitted at least 10 days prior to Commissioning Date which shall be verified by the Chief Mechanical Engineer or his representative.)

Sr. No.	Capacity of the Project (MW)	
	Capacity already commissioned (MW)	
	Capacity proposed to be commissioned (MW)	
I.	Technology used (please specify along with capacity of each type)	
II.	Rating of each module (Wp)	
III.	Angle from horizontal at which array is installed	
IV.	Number of modules installed of each type	
V.	Source(s) of the cells installed of each type	
VI.	Source(s) of the Modules installed of each type	
VII.	Number of PCUs/ Inverters installed	
VIII.	Source of the PCUs/ Inverters (Name of supplier with address)	
IX.	Rating of PCUs/ Inverters	
X.	Date of Installation of Full Capacity (as per Capacity proposed to be Commissioned)	
	PV Arrays	
	PCUs/ Inverters	
	Transformers	

SAMPLE CONNECTIVITY REPORT

(To be provided by concerned CTU/ STU/ Transmission Utility/ DISCOM)

This is in compliance to the office order of the-----, DISCOM,<Place>issued vide office order <No.><dated>,the committee constituted vide said order has completed the work for commissioning of <kV> Bay & Metering Equipment to inter connect the <MW> Solar Power Generation Plant (having <technology>)with Grid installed at <Village>, <Tehsil>, <District> in the <State> on <date>, under Rf SNo.....dated.....

The details of Solar Power Plant are as under:

Sl. No	Name of Solar Power Developer & Location	Capacity Mentioned in PPA	Connectivity	Details of Solar Power Plant (Transformer, Inverter, Switchgear) Modules,
1	<M/s> <Village> <Tehsil> <District.	<> MW	Metering Detail at Delivery Point (<Village>) S.No. of <kV> CT i) <R- Phase> ii) <Y-Phase> iii) <B- Phase> S.No. of < kV> PT i) <R- Phase> ii) <Y-Phase> iii) <B Phase> S.No. of Main<ABT> Meter>S.No. of Check <ABT Meter>S.No. of Standby <ABT Meter> Metering Equipment installed at Receiving end on dated: <> 132 kV GSS, <>, <>, (<Distt.>)	A) Transformer <Make/Type:> <Sr. No.> B) Inverters <Make/Type:> <Sr. No.> C) Modules <Make:> <W>, < W > <Total: Nos.> D) Switchgear Panels <Make/Type:> <Sr. No.> Protection Provided: Under/Over voltage, Over current & Earth fault.

The Commissioning date of various equipment is as under:

<kV> line from --- to -----, completed on date -----.

Line Bay at < kV > GSS, ----- charged for ---- on -----.

<kV> line charged from -----to----- on date ----.

Main & check metering commissioned on.... (initial record of Main/Check meters at the time of

Commissioning is to be taken and enclosed) Complete system commissioned on date-----

The Joint Inspection Report of metering arrangement & copy of permission of Electrical Inspector is enclosed herewith.

SAMPLE SYNCHRONIZATION CERTIFICATE

It is certified that----MW (Capacity)Floating Solar Photovoltaic Power project of M/s
-----,
Village-----Tehsil/Taluka-----,District-----was Grid connected on.....(Date)at---
-
Hrs.

It is further certified that the Project was synchronized and supply of power into the grid
from the Project connected on.....(Date)at Hrs.

The above certificate is issued on the basis of MRI record.

NB:

- (i) The above certificate shall be issued by concerned STU/ SLDC/ KSEBL /CoPA
- (ii) Copy of duly signed MRI is to been closed.

**SAMPLE COMMISSIONING
CERTIFICATE OF FLOATING SOLAR POWER PROJECT**

This is to certify that <M/s> having its registered office at has successfully commissioned

Capacity < MW > out of total <MW> installed Capacity on (Date) of their Solar PV Power Generation Project at Village -----, Tehsil/ Taluka ----- & Dist. -----

The Commissioning Certificate has been issued on the basis of the following documents enclosed:

- (i) Installation Report including Snap shots of the Project from various angles
- (ii) Electrical Inspector Report
- (iii) Connectivity Report
- (iv) Synchronization Certificate including MRI record

CHECK LIST FOR BANK GUARANTEES

Sl. no.	Details of Checks	Yes/ No
1.	Is the BG on non-judicial Stamp paper of appropriate value, as per applicable Stamp Act of the place of execution	
2.	Whether date, purpose of purchase of stamp paper and name of the purchaser are indicated on the back of Stamp Paper under the Signature of Stamp vendor? (The date of purchase of stamp paper should be not later than the date of execution of BG and the stamp paper should be purchased either in the name of the executing Bank or the party on whose behalf the BG has been issued.	
3.	In case of BGs from Banks abroad, has the BG been executed on Letter Head of the Bank endorsed by the Indian branch of the same bank or SBI, India?	
4.	Has the executing Officer of BG indicated his name, designation and Power of Attorney No./Signing Power no. on the BG?	
5.	Is each page of BG duly signed/ initialed by executants and whether stamp of Bank is affixed thereon? Whether the last page is signed with full particulars including two witnesses under seal of Bank as required in the prescribed proforma?	
6.	Do the Bank Guarantees compare verbatim with the Proforma prescribed in the Bid Documents?	
7.	Are the factual details such as Bid Document No./ Specification No./ LOI No. (if applicable)/ Amount of BG and Validity of BG correctly mentioned in the BG	
8.	Whether overwriting/ cutting, if any, on the BG have been properly authenticated under signature & seal of executant?	
9.	Whether the BG has been issued by a Bank in line with the provisions of Bidding documents?	
10.	In case BG has been issued by a Bank other than those specified in Bidding Document, is the BG confirmed by a Bank in India acceptable as per Bidding documents?	

Notes:

1. The Stamp Paper should be in the name of the Executing Bank and of appropriate value.
2. The Performance Bank Guarantee shall be executed by any of the Bank from the List of Banks enclosed.

LIST OF BANKS

1. SCHEDULED COMMERCIAL BANKS	3. FOREIGN BANKS
SBI AND ASSOCIATES	24. A B BANK
1. State Bank of India	25. SHINHAN BANK
	26. CTBC BANK Co. Ltd.
NATIONALISED BANKS	27. MIZUHO BANK, Ltd.
1. Allahabad Bank	28. Krung Thai Bank Public Company Ltd.
2. Andhra Bank	29. Antwerp Diamond Bank N.V
3. Bank of India	30. Australia And New Zealand Banking Group Limited
4. Bank of Maharashtra	31. Sumitomo Mitsui Banking Corporation
5. Canara Bank	32. American Express Banking Corporation
6. Central Bank of India	33. Common Wealth Bank of Australia
7. Corporation Bank	34. Credit Suisse A.G
8. Dena Bank	35. FirstRand Bank Ltd.
9. Indian Bank	36. Industrial And Commercial Bank of China Ltd.
10. Indian Overseas Bank	37. JSC VTB Bank
11. Oriental Bank of Commerce	38. National Australia Bank
12. Punjab National Bank	39. Rabobank International
13. Punjab & Sind Bank	40. Sberbank
14. Syndicate Bank	41. USB AG
15. Union Bank of India	42. United Overseas Bank Ltd.
16. United Bank of India	43. Westpac Banking Corporation
17. UCO Bank	44. Woori Bank
18. Vijaya Bank	45. Doha Bank Qsc
19. Bank of Baroda	4. SCHEDULED PRIVATE BANKS
2. OTHER PUBLIC SECTOR BANKS	1. Federal Bank Ltd.
1. IDBI Bank Ltd.	2. ING Vysya Bank Ltd.
3. FOREIGN BANKS	3. Axis Bank Ltd.
1. Bank of America NA	4. ICICI Bank Ltd.

2. Bank of Tokyo Mitsubishi UFJ Ltd.	5. HDFC Bank Ltd.
3. BNP Paribas	6. Yes Bank Ltd.
4. Calyon Bank	7. Kotak Mahindra Bank
5. Citi Bank N.A.	8. IndusInd Bank Ltd.
6. Deutsche Bank A.G	9. Karur Vysya Bank
7. TheHongKong and ShanghaiBanking Corpn. Ltd.	10. Catholic Syrian Bank
8. Standard Chartered Bank	11. City Union Bank
9. Societe Generale	12. Dhanlaxmi Bank. Ltd
10. Barclays Bank	13. Jammu & Kashmir Bank Ltd
11. Royal Bank of Scotland	14. Karnataka Bank Ltd
12. Bank of Nova Scotia	15. Laxmi Vilas Bank Ltd
13. Development Bank of Singapore (DBS Bank Ltd.)	16. Nainital Bank Ltd
14. Crédit Agricole Corporate and Investment Bank	17. Ratnakar Bank Ltd
15. Abu Dhabi Commercial Bank Ltd	18. South Indian bank Ltd
16. Bank of Bahrain & Kuwait B.S.C	19. Tamilnadu Mercantile Bank Ltd
17. Mashreq Bank p.s.c	20. DCB Bank Ltd
18. HSBC Bank Oman S.A.O.G	21. IDFC Bank
19. Sonali Bank Ltd.	
20. J. P. Morgan Chase Bank, National Association	
21. State Bank of Mauritius Ltd.	
22. BANK of CEYLON	
23. BANK INTERNATIONAL INDONESIA	

Annexure - D

**SPECIAL INSTRUCTIONS TO BIDDERS FOR
e-TENDERING AND REVERSE AUCTION**

GENERAL

The Special Instructions (for e-Tendering) supplement 'Instructions to Bidders', as given in these Rfs Documents. Submission of Online Bids is mandatory for this RfS.

e-Tendering is a new methodology for conducting Public Procurement in a transparent and secured manner. Now, the Government of India has made e-Tendering mandatory. Suppliers/ Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, Cochin Port Authority(COPA)has decided to use the Portal of Government e-Marketing (<https://gem.gov.in/>).

Benefits to Suppliers are outlined on the Home-page of the portal.

INSTRUCTIONS

Tender Bidding Methodology:

1. View Notice Inviting Tender (NIT) on e tender portal
2. Download Tender Documents from e tender portal
3. Clarification to Tender Documents
 - a) Query to COPA(Optional)
 - b) View response to queries posted by COPA
4. Bid-Submission one tender portal
5. Respond to COPA Post-TOE queries
6. 'e-Reverse Auction' if necessary. Participate in reverse auction if invited

Some Bidding Related Information for this Tender

The entire bid-submission would be online on e tender portal. Broad outline of submissions are as follows:

- Submission of Bid-Parts
- Envelope I(Technical-Bid)
- Envelope II(Financial-Bid)
- Submission of digitally signed copy of Tender Documents/Addendum

In addition to the above, the bidders are required to submit certain documents physically offline also as per Clause No.23.a,Section-II,ITBof RfS Documents, failing which the technical bids will not be opened.

Note:

1. The Bidder should also upload the scanned copies of all the above mentioned

original documents as Bid-Annexures during Online Bid-Submission.

2. Submit your bids well in advance of tender submission deadline on ETS (There could be last minute problems due to internet timeout, breakdown, etc.)

ADDITIONAL DO'S AND DON'TS FOR BIDDERS PARTICIPATING IN e-REVERSEAUCTION

1. Get your organization's concerned executives trained for e-Reverse Auction related processes on ETS well in advance of the start of e-Reverse Auction.
2. For responding to any particular e-Reverse Auction, the e-Reverse Auction (ie its Reverse Auction Search Code or RASC) has to be obtained to the authorized person assigned by the bidder
3. It is important for each bidder to thoroughly read the 'rules and related criterion' for the e- Reverse Auction as defined by the Buyer organization.
4. It is important to digitally-sign your 'Final bid' after the end of e-Reverse Auction bidding event.

Minimum Requirements at Bidder's End

- Computer System with good configuration (Min PIV, 1 GB RAM, Windows 7 and above)
- Broadband connectivity
- Microsoft Internet Explorer 7.0 or above
- Registration to GeM portal

Annexure - E

TERMS & CONDITIONS OF REVERSE AUCTION (If same price is quoted by more than 1 bidder in the ON LINE price bids)

After opening of Financial bids and short-listing of bidders based on the tariff and

total capacity of project of qualified Project(s), COPA shall resort to “REVERSE AUCTION PROCEDURE”. Reverse Auction shall be conducted as per methodology specified in Section-V and other provisions of Reverse Auction in RfS Documents and their subsequent Addenda/ Amendments/ Clarifications. Bidders in their own interest, are advised to go through the documents in entirety. The Terms & Conditions and Business Rules mentioned hereunder are in brief and may not give complete explanations. Further these are supplementary in nature.

1. Bidders shall ensure online submission of their ‘Bid Price’ within the auction period.
2. Business rules for Reverse Auction like event date, time, bid decrement, extension etc. shall be intimated later on, for compliance.
3. Bidders should acquaint themselves of the ‘Business Rules of Reverse Auction’, which is enclosed separately in the RfS document.
4. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant COPA guidelines, shall be initiated by COPA
5. The Bidder shall not divulge either his Bids or any other exclusive details of COPA to any other party.
6. Period of validity of Prices received through Reverse Auction shall be same as that of the period of validity of bids offered.
7. Bidders should also note that:
 - a) Although extension time is ‘8’minutes,there is a time lag between the actual placing the bid on the local computer of the bidder and the refreshing of the data on to the server for the visibility to the Owner. Considering the processing time for data exchange and the possible network congestion, bidders must avoid the last minute hosting of the Financial Bid during reverse auction.
 - b) Participating bidder will agree to non-disclosure of trade information regarding the purchase, identity of COPA, bid process, bid technology, bid documentation and bid details.
 - c) It is brought to the attention of the bidders that the bid event will lead to the final price of bidders only.
 - d) Technical and other non-commercial queries Order finalization and post order activities such issue of LOI, signing of PPA etc. (not impacting price) can only be routed to the COPA contact personnel indicated in the RfS document.
 - e) In case of any problem faced by the bidder during Reverse Auction and for all Bidding process related queries, bidders are advised to contact the

persons of M/s GEM indicated in Annexure - D of the RfS document.

- f) Bidders are advised to visit the auction page and login into the system well in advance to identify/rectify the problems to avoid last minute hitches.
 - g) COPA will not be responsible for any PC configuration/software/hardware related issues, telephone line glitches and breakdown/ slow speed in internet connection of PC at Bidder's end.
8. No queries shall be entertained while Reverse Auction is in progress.

BUSINESS RULES OF REVERSE AUCTION

Reverse Auction shall be conducted as per methodology specified in Section - V and other provisions of Reverse Auction in RfS documents and their subsequent Amendments/ Clarifications/ Addenda. Bidders, in their own interest, are advised to go through the documents in entirety.

The following would be parameters for e-Reverse Auction:

Sl. No.	Parameter	Value
1.	Date and Time of Reverse-Auction Bidding Event	To be intimated Later to Eligible Bidders
2.	Duration of Reverse-Auction Bidding Event	1 Hour
3.	Automatic extension of the 'Reverse-Auction closing Time', if last bid received is within a 'Predefined Time-Duration' before the 'Reverse-Auction Closing Time'	Yes
3.1	Pre-defined Time-Duration	8 minutes
3.2	Automatic extension Time-Duration	8 minutes
3.3	Maximum number of Auto-Extension	Until there is no bid during the 8 minutes.
4.	Entity-Start-Price	Lowest tariff quoted among the Bidders.

Online Reverse Auction shall be conducted by COPA on pre-specified date and time, while the bidders shall be quoting from their own offices/place of their choice. Internet connectivity shall have to be ensured by bidders themselves.

During the Reverse Auction, any requests for extension of time will not be considered by COPA. Bidders are therefore requested to make all the necessary arrangements/alternatives whatever required so that they are able to participate in the Reverse Auction successfully. Failure of power or loss of connectivity at the premises of bidders during the Reverse Auction cannot be the cause for not participating in the Reverse Auction. COPA shall not be responsible for such eventualities.

Bidders are advised to get fully trained and clear all their doubts such as refreshing of Screen, capacity/ no. of projects being auctioned, auction rules etc.

COPA reserves the right to cancel/reschedule/extend the Reverse Auction process/tender at any time, before ordering, without assigning any reason.

COPA shall not have any liability to bidders for any interruption or delay in access to the auction website irrespective of the cause. In such cases, the decision of COPA shall be binding on the bidders.

Other terms and conditions shall be as per bidder's techno-commercial offers and as per the RfS document and other correspondences, if any, till date.

Annexure - F

Guidelines issued by Govt. of Kerala for the installation of Energy Solar system

The bidding guidelines dated 3rd August 2017, notified by the Central Government and its amendments for the procurement of power from grid connected solar projects is applicable

for the procurement of 1.5MWp grid connected solar plant at Willingdon Island of M/s.CoPA.

Department of Electrical Inspectorate
Office of the Chief Electrical Inspector
Housing Board Buildings,
Shanthi Nagar
Thiruvananthapuram- 695 001
Phone: 0471 2331104 , 0471 2331159
Email :cei@ceikerala.gov.in
Web site: www. ceikerala.gov.in

File No. B2 - 13958 / 2017 / CEI Thiruvananthapuram,
2018.

Date: 24 / 07 /

CIRCULAR

Subject: Installation of Solar Energy System - guide lines issued – regarding

Reference: 1. Circular No.B4-1750/14/CEI dated 09/01/2015.

2. Circular No. B4-1750/14/CEI dated 10/05/2016.

3. Letter No.B2-4335/16/CEI dated 10.05.2016.

4. Minutes of "Solar connect-distributed power generation through grid connected rooftop solar power plant programme stakeholders meeting" convened by the Additional Chief Secretary, Power department on 02/11/2016.

5. Provisions of the Electricity Act 2003, KSERC(Renewable energy and Net Metering Regulations) 2020.

6. Ministry of New and Renewable Energy (MNRE) notification dt:5/3/2020 dt:5/3/2020 as amended from time to time

6. Provisions of the Electricity Act 2003, KSERC(Renewable energy and Net Metering Regulations) 2020./ (First amendment) Regulation 2022

7. MNRE Draft Quality Control Manual for Grid Connected Rooftop Solar PV System Dtd- 20/09/2022 as amended from time to time.

8. MNRE 's ALLM list dated 24/04/2023 as amended from time to time.

For the effective implementation of Kerala Solar Energy Policy, 2013 the following guide lines are issued.

A. Guidelines for scrutiny / inspection of Solar Energy System

1. The minimum qualification for carrying out the installation work of a solar energy system shall be a A-Class Contractor licensee and depending up on the capacity of installation, eligible contractors can carry out the work. The bidder should possess valid 'A Class' Electrical Contractor's License issued by any State/ Central licensing authority **or** the bidder should carry out the maintenance/electrical works through a licensed A Class contractor depending on the category of electrical installations. An undertaking to this effect shall be submitted in a stamp paper of Rs. 200/- while submitting the bid.
2. Verify whether the inverter is grid tied or not.
3. Inverter capacity shall be selected based on the solar PV generation, so that maximum generation can be utilized.
4. Solar PV module details such as number of modules, wattage, number of cells, voltage, current etc. shall be verified.
5. It has to be verified whether PV module shall be MNRE approved or not. If MNRE approved, their certificate of approval shall be verified. Otherwise certificate from MNRE approved lab shall be obtained.
6. It shall be verified that harmonics are within specified limit for grid tied systems.
7. Solar inverter details and its specifications shall be verified.
8. In the grid System, ensure that there is no back feeding to the grid when grid supply is off and anti islanding protection shall be ensured. Certificate from the manufacturer shall be obtained.
9. The adequacy of cable size for solar PV system shall be verified and ensured.
10. It shall be ensured that energy meter is provided for recording the solar energy generated.
11. If it is grid tied, it shall be ensured that Bi-directional meter (Net meter) is provided at the interconnection point to record the import and export of energy.
12. Solar panel supporting structures, inverter neutral, body etc. shall be earthed as per standards.
13. Breakers having adequate rating and surge protection device (SPD) shall be provided in the array junction box.
14. It shall be ensured that whether indicating meters are provided in DC and AC DBs .
15. Battery and inverter shall be segregated properly with fire proof partition.
16. If the proposed installation is having a DG set, reverse power relay shall be provided to avoid back feeding to DG set, if necessary.
17. While issuing sanction for energisation for Solar Energy System, following conditions are to be included in addition to normal conditions.
 - a) Consent from licensee shall be obtained (In case of grid tied system).
 - b) The whole installation should be in conformity with Central Electricity Authority (Technical Standards for connectivity of the distributed generation resources) Regulations, 2013 and Kerala State Electricity Regulatory Commission (Grid interactive distributed solar energy system) Regulations, 2014.

B. Important extracts of Central Electricity Authority (Technical Standards for connectivity of the distributed generation resources) Regulation, 2013(For information only)

- 5.11(1) Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519
- 5.11(2) The distributed generating resource shall not inject direct current greater than 0.5 % of the full rated output at the interconnection point
- 5.11(3) The distributed generating resource shall not introduce flicker beyond the limits specified in IEC 61000
- 7. The equipment of the generating station shall meet the following requirements.
 - (a) Circuit breakers or other interrupting equipment shall be suitable for their intended application with the capability of interrupting the max available fault current expected at their location.
 - (b) Distributed generation resource and associated equipment shall be designed so that the failure of any single device or component shall not potentially compromise the safety and reliability of the electricity system.
 - (c) Paralleling device of distributed generation resource shall be capable of withstanding 220 % of the nominal voltage at the interconnection point.
- 8. Every time the generating station is synchronised to the electricity system, it shall not cause voltage fluctuation greater than ± 5 % at the point of connection 9. Provide a manually operated isolating switch between the distributed generation resource and the electricity system which shall meet following requirements.
 - (a) Allow visible verification that separation has been accomplished.
 - (b) Include indicators to clearly show open and closed positions.
 - (c) Be capable of being reached quickly and conveniently 24 hrs a day by licensee's personnel without requiring clearance from the applicant.
 - (d) Be capable of being locked in the open position.
 - (e) May not be rated for load break nor may have features of over current protection
 - (f) Be located at a height of at least 2.44 m above the ground level.

The SPD shall be conversant with KSERC (Renewable energy and net metering regulation) 2020& its First amendment in 2022 as amended from time to time. The SPD shall comply with the above regulation for implementing the solar project.

C. Important extracts of Kerala State Electricity Regulatory Commission (Grid interactive distributed solar energy system) Regulation, 2014 (For information only)

- 4(2)(c) The solar energy system installed by the consumer shall be connected with interlocking system and operated safely in parallel with the distribution system of the licensee.
- 8(b) The interconnection of the solar energy system with the distribution system of the licensee conforms to the relevant provisions of the Central Electricity

Authority (Measures relating to Safety and Electric Supply) Regulations, 2010

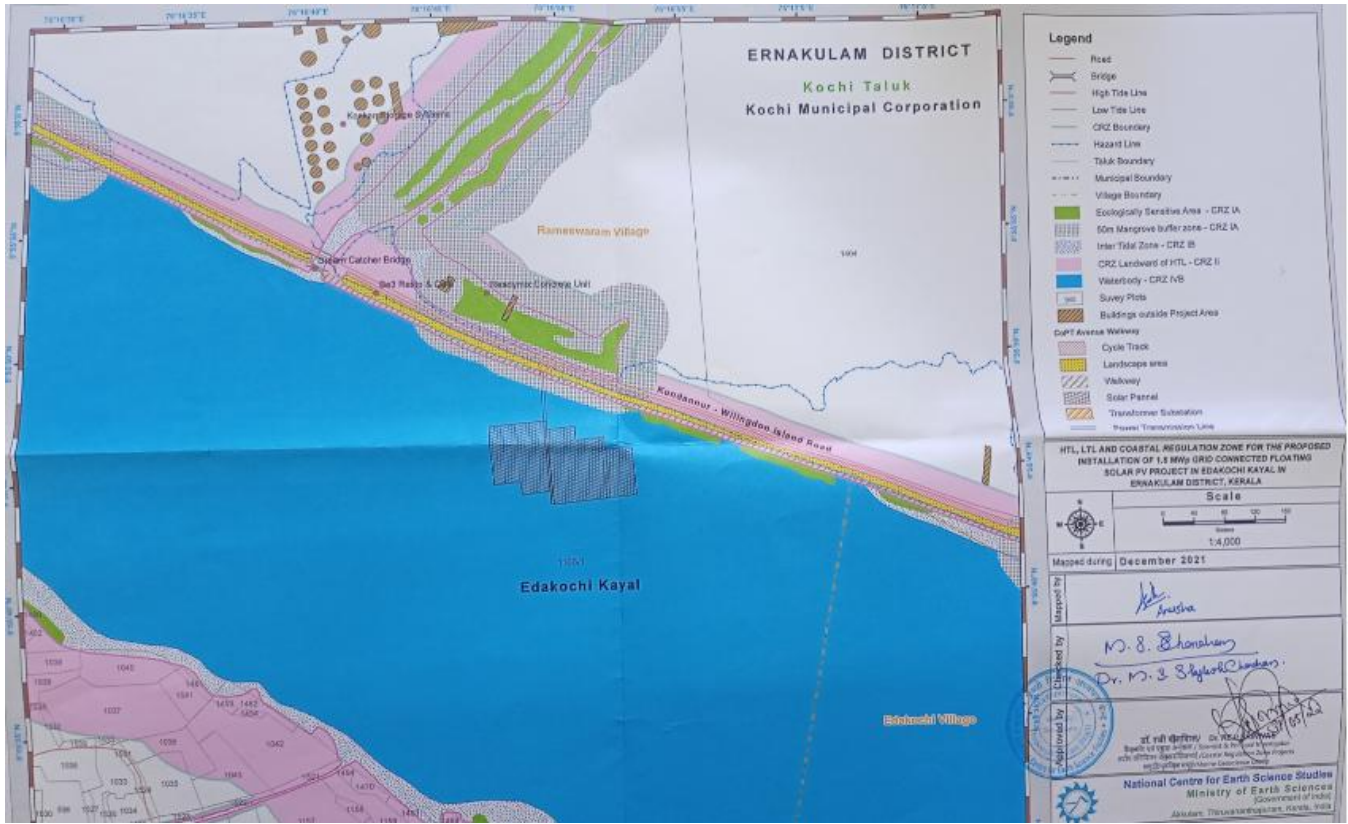
- 8(c) The net meter and solar meter installed conform to the standards, specifications and accuracy class as provided in the Central Electricity Authority (Installation & Operation of Meters) Regulation, 2006.
- 9(1) The net meter shall be installed at the interconnection point of the eligible consumer with the network of the distribution licensee.
- 9(2) Solar meter shall be installed at the delivery point of the solar energy system to measure the solar electricity generated.
- 9(4) The meters shall be tested, installed and sealed.
- 11 The eligible consumer shall comply with the specifications and standards and install grid - tied inverter, manually operated isolating switch and associated equipment with sufficient safe guards to prevent injection of electricity from his solar energy system to the distribution system of the licensee when the distribution system is de-energised.
- 13(12)
- a. PV Module: Irradiance measurement, angle of inclination, temperature of the PV module and VI characteristics using PV Array Tester.
 - b. Solar Inverter: Efficiency, input voltage, output voltage, power, THD, DC injection flicker etc. and anti-islanding protection.

Sd/-

Location Map-1



CRZ Map



Location Map-2



**DRAFT POWER PURCHASE AGREEMENT (PPA) BETWEEN
(-----.) SOLAR POWER DEVELOPER (SPD)**

AND

COCHIN PORT AUTHORITY

FOR

“Implementation of 1.5 MWp Grid connected Floating Solar PV Project at Willingdon Island, Cochin Port Authority, including Operation and Maintenance for 25 years under RESCO model”

This Power Purchase Agreement (PPA) is executed on ____ (date), ____ (month), ____ (year) at Kochi between Authorized Representative of Purchaser i.e. THE BOARD OF MAJOR PORT AUTHORITY FOR COCHIN PORT commonly known as COCHIN PORT AUTHORITY, a Body Corporate under the Major Port Authorities Act, 2021, with its Administrative Office at Willingdon Island, Cochin-682009, having PAN Card No. AAALC1134F (hereinafter referred to as "Purchaser/Power Purchaser") AND M/s ----- (CIN No.-----), a company incorporated under the Companies Act, 1956 having its registered office at -----(hereinafter referred to as "Solar Power Developer (SPD) " which expression shall, unless repugnant to the meaning or context hereof, be deemed to include its successors and assignees. The Purchaser and Solar Power Developer are each individually referred to as a "Party" and collectively as the "Parties".

Whereas :

- A. The Solar Power Developer (hereinafter referred to as 'SPD') has been selected in the Tariff based Competitive Bidding Process conducted by Cochin Port Authority (herein after referred to as CoPA) for **“Implementation of 1.5 MWp Grid Connected Floating Solar PV Project at Cochin Port Authority, Willingdon Island, including Operation and Maintenance for 25 years under RESCO model”** and for supply of such electricity to the Cochin Port Authority under a Power Purchase Agreement to be entered into between SPD and Purchaser.

SPD is Private Ltd. Company / Public Ltd. Company / Proprietary Firm/ the Lead Partner representing through Joint venture / Consortium registered as Private Ltd. Company / Public Ltd. Company / Proprietary Firm.

- B. CoPA has issued the Letter of Award No. dt. in favour of the SPD for the Site survey, design, development and implementation of the 1.5MWp grid connected Floating Solar Power Project for Cochin Port Authority at Willingdon Island, Cochin, Kerala as per the terms and conditions contained in the RfS, draft of this Power Purchase Agreement circulated at the time of the bidding and other bidding documents as well as the conditions contained in the Letter of Award;
- C. CoPA has agreed to purchase such Solar Power from the SPD as the Purchaser as per the provisions of the RfS. Accordingly, CoPA has agreed to sign this Power Purchase Agreement with the SPD to purchase such power as per the provisions of the RFS;
- D. In terms of the RfS and the Bidding Documents, the SPD has furnished the Performance Bank Guarantee for a sum of Rs 25,02,000/- (4% of the estimated cost of Rs.6,25,50,000/-) in favour of CoPA as per the format provided as a part of the Bidding Documents.;
- E. The SPD has fulfilled the terms of the bidding and the terms of the Letter of Award for signing this Power Purchase Agreement as a definitive agreement for implementation of the grid connected Floating Solar Power Project of 1.5MWp in the Backwaters near CoPA's Walkway Avenue between BOT junction and Kannangatt bridge of Cochin Port Authority at W/Island, Kerala for generation and sale of electricity by the SPD to CoPA.
- F. The parties have agreed to execute this Power Purchase Agreement in terms of the provisions of the RfS, the bidding documents and the Letter of Award in regard to the terms and conditions for implementation of the Grid connected Floating Solar Power Project of 1.5MWp in the Backwaters near CoPA's Walkway Avenue between BOT junction and Kannangatt bridge at W/Island, Cochin, Kerala and for generation and supply of electricity by the SPD to CoPA.

Now therefore, in consideration of the promises and mutual agreements, covenants and conditions set forth herein, it is hereby agreed by and between the Parties as follows:

TABLE OF CONTENTS		
SL. No.	Description	Page No
1	DEFINITIONS AND INTERPRETATION	
2	EFFECTIVE DATE	
3	TERMS AND TERMINATION	
4	CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF THE SYSTEM	
5	SYSTEM OPERATIONS	
6	DELIVERY OF SOLAR POWER	
7	TARIFF AND PAYMENTS	
8	GENERAL COVENANTS	
9	REPRESENTATIONS & WARRANTIES	
10	TAXES AND GOVERNMENTAL FEES	
11	FORCE MAJEURE	
12	DEFAULT	
13	LIMITATIONS OF LIABILITY	
14	ASSIGNMENT & NOVATION	
15	CONFIDENTIALITY	
16	INDEMNITY	
17	MISCELLANEOUS	
18	Schedule 1 Description of the Premises	
19	Schedule 2 Fees	
20	Schedule 3 Purchase Value	
21	Schedule 4 Particulars of the Project	
22	Schedule 5 Government approvals	
23	Schedule 6 RFP	
24	Schedule 7 Bank Details	

1. DEFINITIONS AND INTERPRETATION

1.1. Definitions

The terms used in this Agreement, unless as defined below or repugnant to the context, shall have the same meaning as assigned to them by the Electricity Act, 2003 and the rules or regulations framed there under, including those issued / framed by the Appropriate Commission (as defined hereunder), as amended or re-enacted from time to time.

"Actual Monthly Production" means the amount of energy recorded by the Main Metering System during each calendar month of the Term, pursuant to Section 5.2;

"Affiliate" means with respect to any specified Person, any other Person, directly or indirectly controlling, controlled by or under common control with such specified Person.

"Agreement" means this Power Purchase Agreement, including the schedules, amendments, modifications and supplements made in writing by the Parties from time to time.

"Appropriate Commission" Unless otherwise stated, Appropriate Commission shall mean KSERC / CERC;

"Applicable Law" means, with respect to any Person, any constitutional provision, law, statute, rule, regulation, ordinance, treaty, order, decree, judgment, decision, certificate, holding, injunction, registration, license, franchise, permit, authorization, guideline, Governmental Approval, consent or requirement or any Governmental Authority in India having jurisdiction over such Person or its property, enforceable by law or in equity, including the interpretation and administration thereof such Governmental Authority.

"Assignment" has the meaning set forth in Section 14.1

"Business Day" means any day other than Sunday or any other day on which banks in Kerala are required or authorized by Applicable Law to be closed for business:

"Capacity Utilization factor or "CUF" means same meaning as provided in CERC (Terms and conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 as amended from time to time/ KSERC (Renewable Energy and Net Metering) Regulation 2020 /and KSERC (Renewable Energy and Net Metering) (First Amendment) Regulations 2022 as amended from time to time. However, for avoidance of any doubt, it is clarified that the CUF shall be calculated on the Contracted Capacity;

In any Contract Year, if 'X' MWh of energy has been metered out at the Delivery Point for 'Y' MW Project capacity, $CUF = (X \text{ MWh} / (Y \text{ MW} * 8760)) * 100\%$;

"CERC" means the Central Electricity Regulatory Commission of India, constituted under sub-section (1) of Section 76 of the Electricity Act, 2003, or its successors;

"Commissioning" The Project will be considered as commissioned if all equipment as per rated Project Capacity has been installed and energy has flown into grid, in line with the Commissioning procedures defined in the PPA

"Commercial Operation Date (COD)" means the date on which the commissioning certificate is issued upon successful commissioning (as per provisions of this Agreement) of the project or the last part capacity of the Project as the case may be;

"Consents, Clearances and Permits" shall mean all authorization, licenses, approvals, registrations, permits, waivers, privileges, acknowledgements, agreements or concessions required to be obtained from or provided by any concerned authority for the purpose of setting up of the generation facilities and / or supply of power.

Contracted Capacity" shall mean 1.5 MW contracted with CoPA for supply by the SPD to CoPA at the Delivery Point from the Solar Power Project. It shall be equal to the Project Capacity as defined.

"Delivery Point" means the point or points at the voltage level of 11 kV at the 110 kV Substation of CoPA, including the dedicated transmission line connecting the floating solar power Project with the substation system as specified in the RfS document. Metering shall be done at this interconnection point where the power is injected into. For interconnection with grid and metering, the SPD shall abide by the relevant CERC / KSERC Regulations, Grid Code and Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended and revised from time to time or orders passed thereunder by the Appropriate Commission or CEA. All charges and losses related to Transmission of power from project up to Delivery Point (including but not limited to open access, transmission, wheeling, Unscheduled Interchange, Scheduling, Reactive power charges etc.) as notified by the competent authority / regulator shall be borne by the SPD and beyond the Delivery Point all charges and losses as notified by the competent authority / regulator from time to time shall be borne by CoPA and shall be recovered from the SPD (as applicable);

"Dispute" has the meaning set forth in Section 17.7.2;

"Disruption Period" has the meaning set forth in Section 5.3.3.

"Major or Distribution Licensee (KSEBL)" means the electric distribution company providing supply to the Cochin Port Authority. Cochin Port Authority is the local minor distribution licensee at W. Island.

"Due Date" has the meaning set forth in Section 7.

"Energy Accounts" shall mean the energy accounts as specified / issued by the appropriate agency for each Month (as per their prescribed methodology), including the revisions and amendments thereof.

"Effective Date" has the meaning set forth in Section 2.

"Estimated Remaining Payments" means as of any date, the estimated remaining Solar Power Payments to be made through the end of the applicable Term, as reasonably determined by the SPD in accordance with Section 7.1;

"Expiry Date" Shall mean the date occurring twenty-five (25) years from the Scheduled Commissioning Date subject to that the supply of power shall be limited for a period of 25 years from the Scheduled Commissioning Date unless extended by the Parties as per this Agreement;

"Floating Solar Power" shall mean power generated from the Floating Solar Photovoltaic Power Project

"Force Majeure Event" has the meaning set forth in Section 11.1.

"Governmental Approval" means any approval, consent, franchise, permit, certificate, resolution, concession, license or authorization issued by or on behalf of any applicable Governmental Authority for the purpose of setting up of the Project and / or for sale and purchase of Solar Power of the Project pursuant to the Agreement.

"Governmental Authority" means any central, state, regional, district, town, city or municipal government, whether domestic or foreign, or any department, agency, bureau, or other administrative, regulatory or judicial body of any such government.

"Indemnified Persons" means the Purchaser Indemnified Parties or the Solar Power Developer-indemnified Parties, as the context requires.

"Insolvency Event" means with respect to a Party, that either such party has (A) applied for or consented to the appointment of or the taking of possession by a receiver, custodian, trustee, administrator, liquidator on the likes of itself or of all or a substantial part of its assets or business; (B) been unable to pay its debts as such-debts become due; (C) made a general assignment for the benefit of its creditors, (D) commenced a voluntary proceeding under any insolvency or bankruptcy law; (E) filed a petition seeking to take advantage of any other law relating to the bankruptcy, insolvency, reorganization, winding up or composition or readjustment of debts; or (F) taken any corporate or other action for the purpose of effecting any of the foregoing; or

It is clarified that a dissolution or liquidation will not be an Insolvency Event if such dissolution or liquidation is for the purpose of a merger, consolidation or reorganization, and the resulting company retains credit worthiness similar to the dissolved or liquidated entity and expressly assumes all obligations of the dissolved and liquidated entity under this Agreement and is in a position to the perform them.

"Installation Work" means the construction and installation of the System and the Start-up, testing and acceptance (but not the operation and maintenance) thereof; all performed by or for the SPD at the Premises.

"Interconnection Facilities" shall mean the single Point at the voltage level of 11kV at the 110kV Sub-station of CoPA including the dedicated transmission line connecting the floating solar power Project with the substation system as specified in the RfS document. Metering shall be done at this interconnection point where the power is injected into. For interconnection with grid and metering, the SPD shall abide by the relevant CERC / KSERC) Regulations, Grid Code and Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended and revised from time to time.

"Invoice Date" has the meaning set forth in Section 7.2.

"Losses" means all losses, liabilities, claims, demands, suits, causes of action, judgments, awards, damages, cleanup and remedial obligations, interest, fines, fees, penalties, costs and expenses (including all attorneys' fees and other costs and expenses incurred in defending any such claims or other matters or in asserting or enforcing and indemnity' obligation)

"Main Metering System" means all meter(s) and metering devices required in compliance with CEA/ KSERC/ KSEBL provided by the SPD at the Delivery point for measuring and

recording the delivery and receipt / export of solar energy.

"Metering Date" means the first Business day of each calendar month subsequent to the month in which the Solar Power is generated by the Solar Power Developer. The billable units shall be equal to the difference between the meter reading on the Metering Date and the meter reading on the previous month's Metering Date.

"Party" or Parties" has the meaning set forth in the preamble to this Agreement.

"Performance Ratio" (PR) means the ratio of plant output versus installed plant capacity at any instance with respect to the radiation measured. $PR = (\text{Measured output in kW} / \text{Installed plant capacity in kW} \times 1000 \text{ W/m}^2 / \text{Measured radiation intensity in W/m}^2)$.

"Person" means an individual, partnership, corporation, Limited Liability Company, business trust, Joint Stock Company, trust, unincorporated association, joint venture, firm, or other entity, or a Governmental Authority.

"Power Project" or "Project" shall mean the floating solar power generation facility having single point of injection into the grid at Interconnection/ Delivery/ Metering Point. The Project shall include all units and auxiliaries such as water supply, dedicated transmission line up to the Delivery Point and all the other assets, buildings/structures, equipment, plant and machinery, facilities and related assets required for the efficient and economic operation of the power generation facility, whether completed or at any stage of development and construction or intended to be developed and constructed for the purpose of supply of power to CoPA;

"SPD Default" has the meaning set forth in Section 12.1.

"SPD Indemnified" has the meaning set forth in Section 16.2.

"Premises" means the premises described in Schedule 1 to this Agreement. For the avoidance of doubt, the Premises include, the entirety of any and underlying real property located at the address described in Schedule 1 to this Agreement.

"Project Capacity" shall mean the maximum AC capacity of the Project at the point of injection on which the Power Purchase Agreement has been signed.

"Purchase Date" means the date on which title to the System transfers to the Purchaser pursuant to the Purchaser exercising its purchase option under Section 3.2.

"Purchase Price" means the fee payable by Power Purchaser to the SPD under the circumstances described in Section 3.2.

"Purchaser Default" has the meaning set forth in Section 12.2.

"Purchaser Indemnified Parties" has the meaning set forth in Section 16.1.

"Representative" has the meaning forth in Section 15.1.

"Scheduled Complete Date" has the meaning set forth in Section 4.1(f).

"Solar Photo voltaic Project" or "Solar PV Project" shall mean the solar photovoltaic power project that uses sunlight for conversion into electricity and that is being setup by the SPD to provide Solar Power to CoPA per the terms and conditions of this Agreement;

"Solar Power" means the supply of electrical energy output from the System.

"Solar Power Payment" has the meaning set forth in Section 7.1.

"System" includes the integrated assembly of photovoltaic panels, mounting, assemblies, inverters, converters, metering, lighting fixtures, transformers, ballasts, disconnects, combiners, switches, wiring devices and wiring, and all other material comprising the Installation Work.

"System Operations" means the Solar Power Developer's operation; maintenance and repair of the System performed in accordance the requirement herein.

"Tariff" means the price per kWh as approved by the KSEERC set forth in Schedule 2: Fees hereto.

"Term" has the meaning set forth in Section 3.1

1.2. Interpretation

Unless otherwise stated, all references made, in this Agreement to "Sections", "Clauses" and "Schedules" shall refer respectively to Sections, Clauses and Schedules of this Agreement. The Schedules to this Agreement form an integral part of this Agreement and shall have effect as though they were expressly set out in the body of this Agreement.

In the Agreement, unless the context otherwise requires (i) words imparting singular connotation shall include plural and vice versa: (ii) the words "include", "includes", and "including" mean include, includes and including "without limitation" and (iii) the words "hereof", "hereto", "herein" and "hereunder" and words of similar import refer to the Agreement as a whole and not to any particular provision of the Agreement.

This Agreement and other documents such as Request for Selection Documents, Guidelines including subsequent clarifications, amendments and further clarifications in regard to the tender shall be read in conjunction with each other and interpreted in harmonious manner. However, in case of any mismatch/contradiction between provisions of different documents, following shall be the order of precedence:

1. Power Purchase Agreement
2. RfS Documents

2. Effective Date

2.1 This Agreement shall be effective on the day that falls one Business Day after the date of signing of this Agreement. This Agreement shall come into effect within 90 days from the date of LoA or within one month from approval of PPA by KSEERC, and such date shall be referred to as the Effective Date, complying with the orders of the Hon'ble Kerala State Electricity Regulatory Commission. The entire Project shall have a single Effective Date of the PPA and single milestones for achieving Financial Closure and Commissioning, irrespective of the configuration of the Packages. (Project can be at single location or may be sub-divided into two numbers of "Packages")

No change in the controlling share holding of the Bidding Company or Bidding Consortium shall be permitted from the date of submission of response to Rf Still the execution of the PPA.

- 2.2 The Parties agree that decisions pertaining to adoption of the Tariff and approval of the same, for procurement of contracted capacity, shall be binding on all Parties concerned, as contained in the Electricity Act, 2003 and any amendments thereof / KSERC (Renewable Energy and Net Metering) Regulations 2020 and Renewable Energy and Net Metering (First amendment) Regulations 2022 as amended from time to time.
- 2.3 Notwithstanding the Effective Date, the condition precedent for the enforcement of the obligations of either party against the other under this Agreement shall be that, within 90 days from the date of submission of petition to the Appropriate Commission, the Buying Entity shall obtain all requisite approvals including approval of PPA (including adoption of tariff) from Kerala State Electricity Regulatory Commission (KSERC) and on the terms and conditions contained in this Agreement. The Parties agree that in the event, the order of adoption of tariff and the approval of PPA, as mentioned above is not issued by the KSERC within the time specified above, the provisions of Article 2.4 shall apply.
- 2.4 If parties have mutually extended the time period as stipulated under Article 2.1 and the order from the KSERC is issued within 90 days of submissions before Appropriate Commission, no extension for Financial Closure or Scheduled Commissioning Date shall be given. However, if KSERC order is obtained after 90 days of submission of the petition, this shall entail a corresponding extension in Scheduled Financial Closure and the Scheduled Commissioning Date for equal number of days for which the KSERC order has been delayed beyond such 90 days period.
- 2.5 The SPD agrees and undertakes to duly perform and complete all of the following activities including Financial Closure at the SPD's own cost and risk within 90 days from the Effective Date, unless such completion is affected by any Force Majeure event, or for the activities specifically waived in writing by CoPA.
- 2.6 In case of inability of the SPD to fulfill the conditions specified in Article 2.5 due to any Force Majeure event, the time period for fulfillment of the Conditions Subsequent and Financial Closure as mentioned in Article 2.1, shall be extended for the period of such Force Majeure event.
- 2.7 Further, it is presumed, the tariff will be adopted by KSERC within 60 days of from date of submission. However, notwithstanding anything contained in the Guidelines, any delay in adoption of tariff by the KSERC beyond 60 (sixty) days, shall entail a corresponding extension in the deadline.

3. TERMS AND TERMINATION

3.1. Term of agreement

3.1.1 The term of the Agreement shall commence on the Effective Date and shall continue for a period of twenty-five (25) years from the Commercial Operations Date (the "Term"), unless and until terminated earlier pursuant to the provisions of the Agreement.

3.1.2 Early Termination

This Agreement shall terminate before the Expiry Date if either CoPA or SPD terminates the Agreement, pursuant to Article 12 of this Agreement.

3.1.3 *Survival*

The expiry or termination of this Agreement shall not affect any accrued rights, obligations and liabilities of the Parties under this Agreement, including the right to receive penalty as per the terms of this Agreement, nor shall it affect the survival of any continuing obligations for which this Agreement provides, either expressly or by necessary implication, which are to survive after the Expiry Date or termination including those under Article 11 (Force Majeure), Article 12 (Events of Default and Termination), Article 13 (Liability), Article 16 (Indemnity), Article 17 (Miscellaneous Provisions), and other Articles and Schedules of this Agreement which expressly or by their nature survive the Term or termination of this Agreement shall continue and survive any expiry or termination of this Agreement.

3.2. Purchase Option/ Purchase Obligation

So long as a Purchaser has not committed any default, Purchaser has the option to purchase the System by paying the SPD the Purchase price as approved by the KSERC (Schedule III to this Agreement). To exercise its purchase option, the Purchaser shall, not less than Ninety (90) days prior to the proposed Purchase Date, provide written notice to the SPD of Purchaser's intent to exercise its option to purchase the System on such purchase date: In the event Purchaser confirms its intention to exercise the purchase option in writing to the Solar Power Developer, (i) Purchaser shall pay the applicable purchase price to the SPD on the Purchase Date, and such payment shall be made in accordance with any written instructions delivered to Purchaser by the SPD for payments under the Agreement, and (ii) the Parties shall promptly execute all documents necessary to (A) cause title to the System to pass to Purchaser on the Purchase Date, free and clear of all liens and (B) assign all vendor warranties for the System to Purchaser. Upon execution of the documents and payment of the applicable purchase price in each case as described in the preceding sentence, this agreement shall terminate automatically and the Purchaser shall become the owner of the System. Notwithstanding such termination, the SPD shall offer its operations and maintenance ("O&M") services to the Purchaser and the Parties may enter into an O&M agreement in this regard. The terms and conditions of the O&M agreement will be negotiated in good faith between the Parties.

3.3. Conditions of the Agreement prior to installation

In the event that any of the following events or circumstances occur prior to the Commercial Operation Date, the SPD may terminate the Agreement, in which case neither Party shall have any liability to the other except for any such liabilities that may have accrued prior to such termination.

There has been a material adverse change in the rights of Purchaser to occupy the Premises or the SPD to install the System at the Premises.

The SPD has determined that there are easements, Capacity Cost Recovery (CCRs) or other liens or encumbrances that would materially impair or prevent the installation, operation, maintenance or removal of the System. If any dispute arises before commercial operation date, the same shall be resolved under Clause 17.7.

4. CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF THE SYSTEM

- 4.1 a) The SPD will cause the Project "Conduct Site Survey, Design, obtain Statutory Approvals, Engineering, Manufacture, Supply, Storage, Civil work, Erection, obtain CEA approval, Testing & Commissioning of 1.5 MWp Grid Connected Floating Solar PV Project, in the Backwaters near CoPA's Walkway Avenue between BOT junction and Kannangatt bridge at W/Island, Cochin Port Authority, Kerala, Power Transmission to 11kV grid of Port's 110kV substation at Willingdon Island, including Operation & Maintenance (O & M) of the project for a period of 25 (Twenty Five) Years under RESCO Model after Operational Acceptance in accordance with **RfS No -----** and the sanction letter issued by COCHIN PORT AUTHORITY. The SPD shall provide to the Purchaser a bill of materials listing the major equipment constituting the System. Such bill of materials shall be provided within 30 days of the Commercial Operation Date.
- b) The SPD shall have the access as reasonably permitted by the Purchaser to perform the Installation Work at the Premises in a manner that minimizes inconvenience to and interference with the use of the Premises to the extent commercially practical.
- c) It is agreed between the Parties that the SPD shall commission the System with a capacity of **1.5 MWp**.

The project site shall be either a single module of 750 Mtrs long along the canal shore with 20 mtrs width towards water body (Total area 15000 Sqmtr) or 2 segments on both sides of small culvert each having 375 Mtrs long on both sides with 20 metres towards water body and so on.

The SPD may however, set up the cumulative Project capacity at a single location, or he may configure the "Project" as being sub-divided into two numbers of "Packages", being set up at multiple locations as approved by the Cochin Port Authority.

- d) The SPD shall provide and lay the dedicated electrical cables for transmission of Solar Power from the System up to the Delivery Point. The transmission of power up to the point of interconnection where the metering is done for energy accounting shall be the responsibility of the SPD at his own cost. The SPD shall supply and lay 11 kV cables, supply and install necessary switchgears including VCB panels compatible to interface with SCADA to connect the solar plant to the 11 kV grid of Cochin Port at 110 kV substation with necessary switchgears/ VCB panels, necessary protection relays, monitoring panels, metering arrangement etc., with any modifications of existing 11kV grid for enabling the connectivity. At the 11kV side, the AC output shall be 1.5MWp at standard test conditions, complying with Central Electricity Authority Regulations relating to Construction Standards, Technical Standards, Safety Regulations, Grid Connectivity and Communication and State Load Dispatch Centre (SLDC) norms. Transmission or distribution of Solar Power beyond this point will be the responsibility of the Purchaser. The Delivery Point shall be where the Main Metering System is located. The maintenance of Transmission system up to the designated point as per the applicable terms and conditions shall be the responsibility of the SPD. All costs and charges including but not limited to the losses up to and including at the Interconnection Point associated with this arrangement will also be borne by the SPD.

- e) The SPD shall maintain general cleanliness of area around the Project during construction and operation period of the Project. In case any damages are caused to the equipment / facilities owned by the Purchaser arising from any act or omission of the Solar Power Developer, the same shall be rectified by the SPD at their cost.
- f) The SPD shall, within fifteen (15) working days of the Effective Date, submit to the Purchaser shop drawings of the Project for approval ("Shop Drawings"). The drawings will have to be approved by the Power Purchaser within 3 working days from the date of submission of the drawings. If the Purchaser has any objection/ recommendation in the Shop Drawings, he shall communicate the same to SPD within a period of five (5) working days of the date of submission of the Shop Drawings. Any delay will extend the effective Date and such approval shall not be unreasonably withheld. Subject to any punch-list items which shall be agreed by the Purchaser as not being material to completion of the Project, the SPD agrees that it shall achieve the completion of the Project/ Commissioning of the Project within the scheduled completion period from the Effective Date ("Scheduled Completion Date"). Purchaser shall ensure that sufficient load is available at the Delivery Point to ensure synchronization and drawl of power from System.
- g) If the SPD is unable to commence supply of Solar Power to the Purchaser by the Scheduled Completion Date, other than for the reasons specified in Section 11 and 12 (Force Majeure or Purchaser Default), the SPD or its contractor shall pay to COCHIN PORT AUTHORITY genuine pre-estimated liquidated damages for the delay in such commencement of supply of Solar Power as per the clause of the COCHIN PORT AUTHORITY RfP format as per respective RFP document to this Agreement.
- h) **Acceptance/ Performance Test**

Prior to synchronization of the Power Project, the SPD shall be required to get the Project certified for the requisite acceptance/ performance test as may be laid down by Central Electricity Authority / KSERC or an agency identified by the central government to carry out testing and certification for the Solar power projects.
- i) **Third Party Verification**
 - i. The SPD shall be further required to provide entry to the site of the Power Project free of all encumbrances at all times during the Term of the Agreement to CoPA or a third Party nominated by CoPA for inspection and verification of the works being carried out by the SPD at the site of the Power Project.
 - ii. The third party may verify the construction works/operation of the Power Project being carried out by the SPD and if it is found that the construction works/operation of the Power Project is not as per the Standard norms, it may seek clarifications from SPD or require the works to be stopped or to comply with the instructions of such third party.
- j) The Purchaser shall ensure that all arrangements and infrastructure for receiving Solar Power beyond the Delivery Point are ready on or prior to the Commercial Operation Date and is maintained in such state in accordance with applicable laws through the Term of the Agreement.
- k) SPD shall fulfill all obligations undertaken by it under this Agreement.

- 1) The Cochin Port Authority at its discretion reserves the right to award Repeat order to the successful Bidder / Solar Power Developer to install additional capacity of 25% over and above the present requirement of 1.5 MWp Floating Solar project if the levelized tariff approved by the KSERC and accepted by the Successful Bidder / Solar Power Developer, is found reasonable compared to the Bench mark price for the Kerala Region as may be decided by KSERC and based on the performance of the Solar PV Plant installed by the Solar Power Developer for a period of one year. ie if the Cochin Port wants to install the Additional capacity Grid connected Floating Solar PV Project of a further capacity of 0.375 MWp, the SPD shall carry out the additional capacity plant at the same rates, terms and conditions.

4.2. Approvals and Permits

All approvals, permits and clearances required for setting up of the Project including those required from State Government and local bodies shall be in the scope of the SPD. The SPD appointed shall obtain necessary **CRZ clearance for the project from the concerned authorities like NCESS, KCZMA i.e. Environmental clearance/Approval from statutory bodies and the Clearance from Pollution Control Board and other statutory bodies if any.** All the expenses for obtaining the statutory clearances shall be borne by the SPD. Each of the Parties shall assist the other Party in obtaining all necessary Government Approvals, third party approvals and permits including but not limited to those listed in Schedule 5: Government approvals hereto and any waivers, approvals or releases required pursuant to any applicable CCR.

4.3. Synchronization, Commissioning and Commercial Operation

- 4.3.1 The SPD shall give CoPA advanced preliminary written notice and at least thirty (30) days' written notice, of the date on which it intends to synchronize the Power Project to the Grid System. The Solar Power Project may be synchronized by the SPD to the Grid System when it meets all the connection conditions prescribed in applicable Grid Code then in effect and otherwise meets all other Indian legal requirements for synchronization to the Grid System.
- 4.3.2 The synchronization equipment and all necessary arrangements / equipment including RTU for scheduling of power generated from the Project and transmission of data to the concerned authority as per applicable regulation shall be installed by the SPD at its generation facility of the Power Project at its own cost. The SPD shall synchronize its system with the Grid System only after the approval of synchronization scheme is granted by the head of the concerned substation/Grid System and checking/verification is made by the concerned authorities of the Grid System.
- 4.3.3 The SPD shall immediately after each synchronization/ tripping of generator, inform the sub-station of the Grid System to which the Power Project is electrically connected in accordance with applicable Grid Code under intimation to CoPA. In addition, the SPD will inject in-firm power to grid time to time to carry out operational/ functional test prior to commercial operation.
- 4.3.4 The SPD shall give 10 days advance notice to conduct the testing of the Project and shall conduct testing of the Project in the presence of Purchaser's designated

representative.

4.3.5 If the results of such testing indicate that the System is capable of generating electric energy (at full rated kWp) for 5 continuous hours using such instruments and meters as have been installed for such purposes, then the SPD shall send' a Written notice to Purchaser to that effect, and the date of successful conducting such tests.

5. SYSTEM OPERATIONS

5.1. The SPD as Owner and Operator

The System will be legally and beneficially owned by the SPD and will be operated and maintained and, as necessary, repaired by the SPD at its sole cost and expense. Replacement of spare parts if any shall be the responsibility of SPD for the complete period of Agreement. If any repair or maintenance costs incurred by the SPD as a result of Purchaser's breach of its obligations, such costs shall be reimbursed in full by Purchaser.

Lead Partner representing through Joint venture / Consortium meeting the specified Financial Criteria registered as Private Ltd. Company / Public Ltd. Company / Proprietary Firm and any member of Joint Venture / Consortium meeting the specified Technical Criteria registered as Private Ltd. Company / Public Ltd. Company / Proprietary Firm.

SPD shall not be responsible for any work done by others on any part of the System/Project authorized by the Purchaser and not authorized in advance by the SPD in writing. SPD shall not be responsible for any loss, damage, cost or expense arising out of or resulting from improper operation or maintenance of the System by Purchaser or anyone instructed to do such work by the Purchaser. In the event of a problem with the System, as a result of the Purchaser's actions for which SPD is not responsible as provided in this Agreement, Purchaser may require and pay SPD for diagnosing and correcting the problem at SPD or Solar Power Developer's contractors' standard rates.

No transfer or selling of the plant to the third party is allowed during PPA period without the consent of CoPA and without remittance of necessary fees to CoPA as applicable. If the Project is transferred or sold to a third party during its tenure after commercial operation, CoPA reserves the full right to operate the Solar plant with the other SPD at its discretion.

5.2. Metering

The SPD shall install the Main Metering System with due certification for the measurement of electrical energy produced by the System.

The meter will be read by Solar Power Developer's Personnel on the Metering date. The authorized representative of the Purchaser shall be present at the time of meter reading. Both the Parties shall sign a joint meter reading report. However, in case the Joint meter reading report is not signed in the first three business days of any month due to non-availability of the Purchaser's authorized representative, the report signed by the SPD shall be considered as Joint Meter Reading Report. The Parties agree that such Joint meter reading Report shall be final and binding on the Parties.

The Main Metering System at the Delivery Point and any additional meters required by

Applicable Law shall be tested, maintained and owned by the Solar Power Developer. The SPD shall connect the Solar output to the existing system of the Purchaser as per the requirements and guidelines of the state DISCOM

The Purchaser may, at its own discretion, install a check meter, at its cost, to verify the measurements of the Main Metering System.

The title to the Solar Power supplied by the SPD shall pass to the Purchaser at the Delivery Point.

SPD shall be responsible for transformer etc. "if required" & metering as per respective clause of RFS.

5.3. System Disruptions

5.3.1 Availability of premises: Purchaser will provide full access of the site to SPD for installation, operation and maintenance of solar power plant during the period of Agreement. Power Purchaser will also provide restricted access of the Premises to SPD for operation and maintenance of solar power plant.

5.3.2 Purchaser will not provide/construct any structure within its Premises or around its premises which will cause shades to the solar panels effecting the generation of the energy during the Agreement period.

5.3.3 **Repair and other System Disruptions: In the event that (a) the Purchaser repairs the Premises for any reason not directly related to damage, if any, caused by the System, and such repair required the partial or complete temporary disassembly or movement of the System, or (b) any act or omission of Purchaser or Purchaser's employees, affiliates, agents or subcontractors (collectively, a "Purchaser Act") result in a disruption or outage in System production, and such events attributable to Purchaser (except Force majeure, then, in either case) Purchaser shall (i) pay the SPD for all work required by the SPD to disassemble or move the System and re-assemble the system after completion of the repair work SPD shall inform about the disruption or outage in System production, for reasons attributable to purchaser in writing with date and time of such occurrences, and Purchaser's liability shall start from the date of intimation for above of disruption or outage in system production, on account of Purchaser.**

6. DELIVERY OF SOLAR POWER

6.1 Purchaser Requirement:

6.1.1 Criteria For Generation

The annual Capacity Utilization Factor of Solar PV project shall be 28% as per the KSERC's Order dated 25/04/2023, fixed for the Floating solar PV projects or as revised by the Kerala State Electricity Regulatory Commission from time to time.

The SPD shall be required to meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) during the O&M period of 25 years as stipulated by the KSERC Regulations from time to time.

It shall be the responsibility of the SPD, entirely at its cost and expense to install such number of Solar panels and associated equipment as may be necessary to achieve the required CUF, and for this purpose SPD shall make its own study and investigation of the GHI (Global

Horizontal Irradiance) and other factors prevalent in the area which have implication on the quantum of generation. SPD shall maintain generation so as to achieve annual CUF of 28% or as revised by the Kerala State Electricity Regulatory Commission from time to time, till the end of 25 years from COD (Commercial Operation Date). The annual CUF will be calculated every year from 1st April of the year to 31st March next year. The CUF for the period between COD/commencing date upto 1st April (if any) and 31st March upto final closing date (if any) shall be calculated on pro-rata basis.

6.1.2 Shortfall In Generation

If for any Contract Year, it is found that the SPD has not been able to generate minimum energy corresponding to the value of annual CUF declared in the PPA, on account of reasons solely attributable to the SPD, such shortfall in performance shall make the SPD liable to pay the compensation. * Condition clause no.8 of ITB in bid document

6.1.3. OFFTAKE CONSTRAINTS DUE TO TRANSMISSION INFRASTRUCTURE/ GRID UNAVAILABILITY & BACKDOWN

- a) Generation compensation in offtake constraints due to Transmission infrastructure not complete/ready (Transmission constraint)

After the scheduled commissioning date, if the Project is ready in all respects including the dedicated transmission line to be established by the SPD to connect to the grid, but the necessary power evacuation/ transmission infrastructure is not ready, for reasons not attributable to the Solar Power Developer, leading to offtake constraint, the provision for generation compensation is as follows.

Transmission Constraint	Provision for Generation Compensation
If the plant is ready but the necessary power evacuation/ transmission infrastructure is not ready, leading to offtake constraint.	b. The normative CUF of 28% (Twenty eight Percent) for the period of grid unavailability, shall be taken for the purpose of calculation of generation loss. Corresponding to this generation loss, the excess generation by the SPD in the succeeding 03 (Three) Contract Years, shall be procured by CoPA at the PPA tariff so as to offset this loss.

However, it is clarified that if the project is ready for commissioning prior to the Scheduled commissioning date, but the off take is constrained because of inadequate/ incomplete power evacuation infrastructure, no compensation shall be permissible.

- b) **Compensation in off take constraint due to Grid Unavailability:**

During the operation of the project, there can be some periods where the project can generate power but due to temporary transmission unavailability the power is not evacuated for reasons not attributable to the Solar Power Developer. In such cases the generation compensation will be addressed by CoPA

Duration of Grid unavailability	Provision for Generation Compensation
Grid unavailability in a contract year as defined in the PPA: (only period from 8 am to 6 pm to be counted):	<p>Generation Loss = [(Average Generation per hour during the Contract Year) × (number of hours of grid unavailability during the Contract Year)]</p> <p>Where, Average Generation per hour during the Contract Year (kWh) = Total generation in the Contract Year (kWh) ÷ Total hours of generation in the Contract Year.</p> <p>The excess generation by the SPD equal to this generation loss will be procured by CoPA at the PPA tariff so as to offset this loss in the succeeding 3 (three) Contract Years.</p>

c) Off take Constraints due to Back down:

The SPD and CoPA shall follow the forecasting and scheduling process as per the regulations in this regard by the CERC. The Government of India, as per Clause 5.2(u) of the Indian Electricity Grid Code (IEGC), provides for status of “must-run” to solar power projects. Accordingly, no solar power plant, duly commissioned, should be directed to back down by a DISCOM/ State Load Dispatch Centre (SLDC). In case such eventuality of Backdown arises, including non-dispatch of power due to non-compliance with “Order No. 23/22/2019-R&R dated 28.06.2019 of Ministry of Power regarding Opening and maintaining of adequate Letter of Credit (LC) as Payment Security Mechanism under Power Purchase Agreements by Distribution Licensees” and any clarifications or amendment thereto, except for the cases where the Backdown is on account of events like consideration of grid security or safety of any equipment or personnel or other such conditions, the SPD shall be eligible for a Minimum Generation Compensation, from the Procurer, in the manner detailed below:

Duration of Backdown	Provision for Generation Compensation
Hours of Backdown during a monthly billing cycle.	<p>Minimum Generation Compensation = 100% of [(Average Generation per hour during the month) × (number of backdown hours during the month)] X PPA Tariff</p> <p>Where, Average Generation per hour during the month (kWh) = Total generation in the month (kWh) ÷ Total hours of generation in the month.</p>

The Generation Compensation is to be paid as part of the energy bill for the successive month after receipt of Regional Energy Accounts (REA)/SEA/JMR. No Trading Margin shall be applicable on this Generation Compensation.

6.1.3. Right to Contracted Capacity & Energy/ Penalty Clause for not achieving CUF:

The SPD will declare the CUF of the project and will be allowed to revise the same once within first year after COD of the project. Thereafter, the CUF for the Project shall remain unchanged for the entire term of the PPA. The declared annual CUF shall (* be maintained

at) in no case be less than 28%. It shall be the responsibility of the SPD, entirely at its cost and expense to install such number of Solar panels and associate equipment (including arrangement of extra Reservoir/land for such installation) as may be necessary to achieve the required CUF, and for this purpose SPD shall make its own study and investigation of the Global Horizontal Irradiance (GHI) and other factors prevalent in the area which have implication on the quantum of generation. SPD shall maintain generation so as to achieve annual CUF within + 10% and -15% of the declared value till the end of 10 years from COD, subject to the annual CUF remaining minimum of 15%, and within +10% and -20% of the declared value of the annual CUF thereafter till the end of the PPA duration of 25 years. The annual CUF will be calculated every year from 1st April of the year to 31st March next year. The compensation due to shortfall in generation shall be applied to the amount of shortfall in generation during the Contract Year. The amount of compensation shall be equal to the compensation payable (including RECs) by CoPA towards non - meeting of RPOs, which shall ensure that the CoPA is offset for all potential costs associated with low generation and supply of power under the PPA, subject to a minimum of 25% (twenty-five per cent) of the cost of this shortfall in energy terms, calculated at PPA tariff. The amount being equal to the compensation payable by the CoPA for not meeting RPO is only a measure of damage. It shall not be construed that the compensation is payable by SPD only if the buying Entity are required to pay compensation for such not meeting of RPO or that the buying Entity or the SPD shall be required to prove or establish such payment of compensation for not meeting the RPO. SPD shall agree that the methodology specified herein above for calculation of liquidated damages payable by the SPD for shortfall in generation is a genuine and accurate pre-estimation of the actual loss that will be suffered by buying Entity. SPD shall further acknowledge that a breach of any of the obligations contained herein result in injuries and that the amount of the liquidated damages or the method of calculating the liquidated damages specified in this document is a genuine and reasonable pre-estimate of the damages that may be suffered by buying Entity in each case specified under this Agreement. However, this compensation shall not be applicable in events of Force Majeure identified under the PPA with COPA affecting supply of power by the SPD. Any excess generation over and above 10% of declared annual CUF may be purchased by CoPA at a fixed tariff of 75% (seventy-five percent) of the PPA tariff. However, the SPD shall inform at least 30 days in advance of such excess generation to CoPA, to enable CoPA to take necessary actions for the acceptance of this excess generated energy. CoPA shall be required to intimate its approval/refusal to the SPD, for buying such excess generation not later than 7 days of receiving the above offer from the SPD. While the SPD would be free to install DC solar field as per his design of required output, including his requirement of auxiliary consumption, he will not be allowed to sell any excess power to any other entity other than CoPA. In case at any point of time, the peak of capacity reached is higher than the rated capacity and causes disturbance in the system at the point where power is injected, the SPD will have to forego the excess generation and reduce the output to the rated capacity.

6.1.4 Excess Generation

In case at any point of time, the peak of capacity reached is higher than the rated capacity and causes disturbance in the system at the point where power is injected, the SPD will have to forego the excess generation and reduce the output to the rated capacity to ensure compliance with grid requirement.

While the SPD would be including his requirement of auxiliary consumption, he will not be allowed to sell any excess power to any other entity other than CoPA.

6.1.5 Power Sale Agreements (PSAs) are not applicable for this project.
The SPDs will be free to reconfigure and repower their plants from time to time during the PPA duration. However, CoPA will be obliged to buy power only within the Capacity Utilization Factor (CUF) range laid down in Power Purchase Agreement (PPA) as per guidelines. Any extension of the PPA period beyond 25 years shall be through mutual Agreement between the Solar Power Developer and CoPA subject to the approval of KSERC

6.2. Estimated Annual Production

The annual estimate of Solar Power with respect to the System for any given year as determined pursuant to this Section shall be the "Estimated Annual Production".

6.3. Suspension of Delivery

SPD shall be entitled to suspend delivery of electricity from the System to the Delivery Point for the purpose of maintaining and repairing the System upon giving one week's advance written notice to the Purchaser except in the case 'of emergency repairs. Such suspension of Service shall not constitute a breach of this Agreement provided that the SPD shall use commercially reasonable efforts to minimize any 'interruption in service to the Purchaser. However, any preventive maintenance shall be done during the period when plant is not generating to the extent possible.

7. TARIFF AND PAYMENTS

7.1. Consideration: Purchaser shall pay to the SPD a monthly payment (the "Solar Power Payment") for the Solar Power generated by the System as per the Metering Section 5.2.2 above during each calendar month of the Term equal to the actual Monthly Production as recorded in Joint Meter Reading Report for the System for the relevant month multiplied by the Tariff irrespective of (i) whether any or all units of Solar Power has been drawn, consumed or utilized by Purchaser and / or (ii) whether any Solar Power has been injected, whether inadvertently or otherwise, into the grid of the Distribution Utility. The SPD will bill the Purchaser for each kWh metered as above at the Delivery Point, at the Tariff prevailing at that point of time. As detailed in Schedule 2: Fees, the Tariff will be equal to **Rs. - - -/kWh** tariff as approved by KSERC. The 'year' Considered shall be the financial year which April 1st to 31st March of every year as per **COCHIN PORT AUTHORITY** Schedule 2: Fees provides a detailed year on year tariff schedule.

7.2. Invoice

The SPD shall invoice Purchaser on the first day of each month (each, an "Invoice Date") commencing on the first Invoice Date to occur after the Commercial Operation Date, for the Solar Power Payment in respect of the immediately preceding month. The last invoice shall -include production only through the Expiration Date of this Agreement.

The invoice to the purchaser shall include:

The Solar Power calculations for the relevant billing period.
Supporting data, documents and calculations in accordance with this Agreement.

7.3. Time of payment

Purchaser shall pay all amounts due hereunder within 30 days after the date of the receipt of the invoice via email or post ("Due Date").

7.4. Method of Payment

Purchaser shall make all payments under the Agreement by cheque / demand draft/

electronic funds transfer only in immediately available funds to the' account designated by the SPD from time to time. All payments made hereunder shall be non- refundable, subject to the applicable tax deduction at source, and be made free and clear of any other tax, levy, assessment; duties or other charges and not subject to reduction, set-off, or adjustment of any kind. Further, if any taxes and duties are leviable currently or in future, such taxes and duties shall be paid by the Purchaser over and above the solar electricity tariff mentioned in this agreement. Such taxes and duties could include, but not restricted to Electricity Duty, Tax on Sale of Electricity (TOSE). If the Purchaser deducts any tax at source, the Purchaser will issue a tax credit certificates as per law.

7.5. Late Payment Surcharge/ Early Payment Discount

In case payment of any invoice is delayed by the Purchaser beyond its Due Date, a late payment charges as per KSERC norms shall be paid by the Purchaser

7.6. Disputed Payments

In the event that the Purchaser disputes an invoice, it shall give notice of such a dispute within 15 days of receiving the invoice setting out details of the disputed amount. Disputed bills shall be corrected and settled as per KSERC norms.-

7.7. Change in Law

7.7.1 For the Purpose of this Section 7.7, the term "Change in Law" shall mean the occurrence of any of the following events after the Effective date, resulting into any additional recurring / non-recurring expenditure by the SPD or any income to the Solar Power Developer.

7.7.1.1 The enactment, coming into effect, adoption, promulgation, amendment, modification or repeal (without re-enactment or consolidation) in India, of any Law, including rules and regulations framed pursuant to such Law: or

7.7.1.2 A change in the interpretation of any Law by any Governmental Authority having the legal power to interpret or apply such Law, or any competent court; or

7.7.1.3 The imposition of a requirement, for obtaining any Government Approvals which was not required earlier; or

7.7.1.4. A change in the terms and conditions prescribed for obtaining any Government Approvals or the inclusion of any new terms or conditions for Obtaining such Government Approvals; or

7.7.1.5 Any introduction of any tax made applicable for supply of power by the SPD as per the terms of this Agreement. Any benefit due to change in tax on the sale of solar energy shall be passed on to Purchaser.

Any benefit arising due to change in above Section 7.7.1.1 to 7.7.1.4 shall be passed on to the Purchaser. But not include any change in any withholding tax on income or dividends distributed to the shareholders of the Solar Power Developer.

7.7.2 Application and Principles for computing impact of Change in Law:

While determining the consequence of Change in Law under this Section 7.7, the Parties shall have due regard to the Principle that the purpose of compensating the Party affected by

such change in Law, is to restore through monthly bill payment, to the extent contemplated in this Section 7.7, the affected Party to the same economic position as if such Change in Law has not occurred and such impact shall be mutually decided in writing.

7.7.3 Solar Power Payment Adjustment Payment on account of Change in Law Subject to provisions mentioned above, the adjustment in Solar Power Payment shall be effective from:

The date of adoption, promulgation, amendment, re-enactment or repeal of the Law or Change in Law; or

The date of order/ judgment of the competent court; of tribunal or Governmental Authority, if the Change in Law is on account of a change in interpretation of Law.

8. GENERAL COVENANTS

8.1. Solar Power Developer's Covenants

The SPD covenants and agrees to the following:

Notice of Damage or Emergency: The SPD shall (a) promptly notify Purchaser if it becomes aware of any damage to or loss of the use of the System or that could reasonably be expected to adversely affect the System, (b) immediately notify Purchaser once it becomes aware of any event or circumstance that poses an imminent risk to human health, the environment, the System or the Premises.

System Condition: The SPD shall take all actions reasonably necessary to ensure that the System is capable of providing Solar Power at a commercially reasonable continuous rate: Subject to there being no Purchaser Default, the SPD shall provide 24 x 7 offsite / offsite monitoring and maintenance of the System throughout the period of this agreement at no additional cost.

The System shall meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) as per the daily normalized irradiance levels of the location during the O&M period. PR shall be minimum of 75% at the time of inspection for initial Project acceptance. SPD shall maintain generation so as to achieve annual CUF of 28% or as revised by the Kerala State Electricity Regulatory Commission from time to time, till the end of 25 years from COD (Commercial Operation Date).

Governmental Approvals: SPD shall obtain all required statutory approvals prior to commencing the project. CoPA to export The surplus energy during any time block shall be exported to KSEB Ltd' Grid. M/s.KSEB Ltd. shall account and pay for the energy exported by the CoPA at the tariff approved/ adopted for the 1.5MWp Floating Solar Plant of M/s.CoPA by the Commission. KSEB Ltd. can account such energy against their RPO and CoPA will not be eligible to account the energy against their RPO. While providing the Installation work, solar Power and System Operations, the SPD shall obtain and maintain and secure all Governmental Approval required to be obtained and maintained and secured by the SPD and to enable the SPD to perform such obligations. The SPD shall obtain the CEA approval for energisation of the solar plant on completion of the solar project.

The interconnection of the floating solar system with the network of the distribution licensee shall be made as per the technical standards for connectivity of distributed generated resources regulations of CEA/ KSERC. The interconnection of the floating solar

system shall be as per the capacity approved KSERC at 11 kV level

Health and Safety: The SPD shall take all necessary and reasonable safety precautions with respect to providing the installation Work, Solar Power, and System Operations that shall comply with all Applicable Law pertaining to the health and safety of persons and real and personal property.

8.2. Solar Power Developer's Representatives

During the subsistence of this Agreement, the SPD undertakes to respond to all questions, concerns and complaints of the Purchaser regarding the System in a prompt and efficient manner. The SPD designates the following individual as its representative pertaining to performance of this Agreement till the Commercial Operation Date:

Name:

Telephone:

Email:

The SPD designates the following individuals as its representative and primary point of contact pertaining to performance of this Agreement following the Commercial Operation Date till termination:

Name:

Telephone:.

Email:

8.3. Purchaser's Covenants

Purchaser covenants and agrees to the following:

Notice of Damage or Emergency: Purchaser shall (a) promptly notify the SPD if it becomes aware of any damage to or loss of the use of the System or that could reasonably be expected to adversely affect the System; (b) immediately notify the SPD once it becomes aware of any event or circumstance that poses an imminent risk to human health, the environment, the System or the Premises.

Liens: Purchaser shall not directly or indirectly cause, create, incur, assume or suffer to exist any Liens on or with respect to the System or any interest therein. If Purchaser commits breach of its obligations under this Clause, it shall immediately notify the SPD in writing, and shall promptly cause such Lien to be discharged and released of record without any cost to the Solar Power Developer, and shall indemnify the SPD against all costs and expenses (including reasonable attorneys fees and court costs) incurred in discharging and releasing such Lien.

Consents and Approvals: Purchaser shall ensure that any authorizations required of Purchaser under this Agreement, including those required for installation of System at the Premises and to drawl consume Solar Power are provided in a timely manner. The Purchaser shall cooperate with the SPD to obtain such approvals, permits, rebates or other financial incentives.

Access to Premises Grant of License: Purchaser hereby grants to the SPD a license co-terminus with the Term, containing all the rights necessary for the SPD to use portions of the Premises for the installation, operation and maintenance of the System pursuant to the terms of this Agreement, including ingress and egress rights to the Premises for the SPD and its employees and authorized representatives and access to electrical panels and conduits up to delivery point. Interconnect or disconnect the System with the Premises electrical wiring with the consent and approval of the Purchaser's authorized representative identified by the Purchaser. Photo IDs will be provided by the Solar Power Developer. Power Purchaser will assist in availing permissions to the site.

Security: The building which has enhanced security of Solar Power System Purchaser will keep the premises locked. In spite of these measures, if any damages to the System take place due to theft or vandalism then the same shall be claimed or reimbursed through insurances by Solar Power Developer. In case of theft or acts of vandalism acts, the Purchaser will assist the SPD in procedures of filing FIRs, insurance claims and any other related activities. Whenever, the damages to the System occurs (except due to negligence of Solar Power Developer) then the same shall be jointly assessed by both the Parties and a severity level will be decided, which will further decide the duration offered to the SPD to correct the damage. SPD shall be entitled to any insurance proceeds received for damages in this clause. Purchaser will not conduct activities on, in or about the Premises that have a reasonable likelihood of causing damage, impairment or otherwise adversely affecting the System the SPD shall have access to the Premises and System during the Term of this Agreement, and Purchaser will not interfere or handle any of the Solar Power Developer's equipment or the System without written authorization from the Solar Power Developer.

Temporary storage space during installation: Purchaser shall provide sufficient space at the Premises for the temporary storage and staging of tools, materials and equipment and for the parking of construction crew vehicles and temporary Construction, trailers and facilities reasonably necessary during the Installation Work, System Operations and access for rigging and material handling.

Sunlight Easements: Purchaser will take all reasonable actions as necessary to prevent other building, structures or flora from overshadowing or otherwise blocking access of 'sunlight to the System, including but not limited to-such actions as may be reasonably necessary to obtain a solar access easement for such purpose.

Evacuation: Purchaser shall off take 100% of the Solar Power generated from the Delivery Point to grid connectivity with M/s KSEBL for export of excess solar power and pay all invoices raised by the SPD under this Agreement by the 'Due Date and pay interest on delayed payments, if any, as per KSERC norms

Water: SPD at his own cost shall arrange Raw Water at a given point as per the requirements of the Solar Power Developer, for periodic cleaning of the solar panels

Auxiliary Power: The Purchaser shall provide sufficient auxiliary power to the SPD for the maintenance and operation of its system, if available and possible, at the prevailing rate approved by KSERC.

Relocation: If one or more of the Solar Power Plant panels needs to be temporarily moved or its generation suspended, for any other reason requested by the Power Purchaser, the Power Purchaser will be responsible for pre-agreed costs on actuals only, arising from moving, disassembling and re-installing/ commissioning the Solar Power Plant, as agreed

between the Parties. The SPD will be responsible for providing detailed documentary proof of the actual pre-agreed costs borne for such relocation/disassembling. Within 30 days of these satisfactory documents being provided by the Solar Power Developer, the Purchaser shall reimburse these pre- agreed expenses in full, and delayed payment beyond the date mentioned above will attract Late Payment charges as described in Section 7.6. During any interruption in generation during such relocation, the Purchaser will continue to be billed as per Deemed Generation, during the period of interruption, for the affected Solar Power Plant(s).

9. REPRESENTATIONS & WARRANTIES

Representations and Warranties Relating to Agreement Validity In addition to any other representations and warranties contained in the Agreement, each Party represent and warrants to the other that:

It is duly organized and validly existing and in good standing in the jurisdiction of its incorporation;

It has the full right and authority to enter into, execute, deliver, and perform its obligations under the Agreement.

It has taken all requisite corporate or other action to approve the execution, delivery, and performance of the Agreement;

The Agreement constitutes its legal, valid and binding obligation enforceable against such Party in accordance with its terms;

There is no litigation, action, proceeding or investigation pending or, to the best of its knowledge, threatened before any court or other Governmental Authority by, against, affecting or involving any of its business or assets that could reasonably be expected to adversely affect its ability to carry out the transactions contemplated herein; and

Its execution and performance of the Agreement and the transactions contemplated hereby do not constitute a breach of any term or provision of, or a default under (i) any contract or agreement to which it or any of its Affiliates is a party or by which it or any of its Affiliates or its or their property is bound, (ii) its organizational documents, or (iii) any Applicable Laws.

The Contract shall be interpreted in accordance with the laws of Cochin.

10. TAXES AND GOVERNMENTAL FEES

10.1. Purchaser's obligations

Purchaser shall pay for any taxes, fees or charges imposed or authorized by any Governmental Authority in future (as on date no such taxes/fees/charges are being levied) on sale of the Solar Power to Purchaser pursuant to Section 7. The SPD shall notify Purchaser in writing with a detailed statement of such amounts, which shall be invoiced by the SPD in the monthly bills and payable by Purchaser. Purchaser shall timely report, make filings for, and pay any and all sales, use, income or other taxes, and any other amounts assessed against it due to its purchase of the Solar Power. This Section 10.1 excludes taxes specified in Section 10.2.

10.2. Solar Power Developer's Obligations

The SPD shall be responsible for all income taxes and any and all franchise fees or similar fees assessed against it due to its ownership of the System. The SPD shall not be obligated for any taxes payable by or assessed against Purchaser based on or related to Purchasers

overall income or revenues.

11. FORCE MAJEURE

11.1. Definition

"Force Majeure Event" means any act or event that prevents the affected Party from performing its obligation in accordance with the Agreement, if such act or event is beyond the reasonable control of the affected Party and such Party had been unable to overcome such act or event with the exercise of due diligence (including the expenditure of reasonable sums). Subject to the foregoing conditions, "Force Majeure Event" shall include without limitation the following acts or events: (i) natural phenomena, such as storms, hurricanes, floods, lightning, volcanic eruptions and earthquakes; (ii) explosions or fires arising from lighting or other causes unrelated to the acts or omissions of the Party seeking to be excused from performance; (iii) acts of war or public disorders, civil disturbances, riots, insurrection, sabotage, epidemic, terrorist acts, or rebellion. A Force Majeure Event shall not be based on the economic hardship of either Party. In case of any damage because of force majeure event, the System shall be repaired / commissioned at its own cost by the Solar Power Developer.

11.2. Excused Performance

Except as otherwise specifically provided in the Agreement, neither Party shall be considered in breach of the Agreement or liable for any delay or failure to comply with the Agreement, if and to the extent that such delay or failure is attributable to the occurrence of a Force Majeure Event; provided that the Party claiming relief under this Section 11 shall immediately (i) notify the other Party in writing of the existence of the Force Majeure Event, (ii) exercise all reasonable efforts necessary to minimize delay caused by such Force Majeure Event, (iii) notify the other Party in writing of the cessation or termination of said Force Majeure Event and (iv) provided, however, that Purchaser shall not be excused from making any payments and paying any unpaid amounts due in respect of Solar Power delivered to Purchaser prior to the Force Majeure Event performance interruption.

11.3. Termination as a Consequence of Force Majeure Event

If a Force Majeure Event shall have occurred that has affected the Solar Power Developer's performance of its obligations hereunder and that has continued for a continuous period of one hundred eighty (180) days, then Purchaser shall be entitled to terminate the Agreement and if such Force Majeure Event continues for further ninety (90) days period, the Agreement shall automatically terminate. Upon such termination for a Force Majeure Event, neither Party shall have any liability to the other (other than any such liabilities that have accrued prior to such termination).

12. EVENTS OF DEFAULT AND TERMINATION

12.1. SPD Defaults and Power Purchaser Remedies

SPD Defaults: The following events shall be defaults with respect to the SPD (each, a "SPD Default"):

- (A) An Insolvency Event shall have occurred with respect to the Solar Power Developer;
- (B) Failure to achieve Commissioning of the System within the period as per RFS document; or

- (C) The SPD commits breach of any material term of the Agreement or
- (D) if such breach can be cured within sixty (60) days after Purchaser's written notice of such breach and the-SPD fails to cure the same; or (B) the SPD fails to commence and pursue a cure within such sixty (60) days period if a longer cure period is needed.

Purchaser's Remedies:

If a SPD commits Default as described in Section 12.1.1 has occurred and is continuing, in addition to other remedies expressly provided herein, and subject to Section 13, Purchaser shall have a right to deliver a notice of its intention to terminate this Agreement ("Purchaser Preliminary Default Notice"), which shall specify in reasonable detail, the circumstances giving rise to the issue of such notice.

Upon the occurrence and continuation of Solar Power Developer's Default and the failure by the SPD to cure such default within the applicable cure period specified in this Article; the Purchaser shall be at liberty avail the services of any other firm / successful bidder.

Following the issue of Purchaser Preliminary Default Notice, it shall be the responsibility of the Parties to discuss as to what steps shall be taken with a view to mitigate the consequences of the relevant Solar Power Developer's Default having regard to all the circumstances: If the SPD Default is not cured within a period of sixty (60) days of the issue of Purchaser Preliminary Default Notice or any other such period mutually agreed upon by the Parties, the Purchaser shall have the right to terminate this Agreement by issuing a Purchaser Termination Notice.

Upon the delivery of the Purchaser Termination Notice, this Agreement shall stand terminated. The SPD shall have the liability to- make payment within sixty (60) days. from the date of Purchaser Termination Notice towards compensation to Purchaser equivalent to the difference between the Tariff and the grid rate notified by the relevant Government Authority for that point in time multiplied by the estimated Solar Power generated for a period of two years following the termination, considered on normative capacity utilization factor.

If the SPD fails to remove the System from the Premises within one month from the date of termination, the Purchaser shall be entitled to dispose of the System in any manner it deems fit.

The Power Purchaser may exercise any other remedy it may have at law or equity or under the Agreement.

12.2. Power Purchaser Defaults and Solar Power Developer's Remedies

Purchaser Default: The following events shall be defaults with respect to Purchaser (each, a "Purchaser Default")

An Insolvency Event shall have occurred with respect to Purchaser;

Purchaser commits breach of any material term of the Agreement if (A) such breach can be cured within sixty (60) days after the Solar Power Developer's notice of such breach and Purchaser fails to so Cure, or (B) Purchaser fails to commence and pursue said cure within such sixty (60) day period if a longer cure period is needed; and

Purchaser fails to pay the SPD any undisputed amount or, if the amount is disputed, an amount based on average consumption of last three consecutive undisputed invoices to the SPD under Section 7.7 of this Agreement within sixty (60) days from

the receipt of notice from the SPD of such past due amount

Solar Power Developer's Remedies: If a Purchaser commits Default as described in Sections 12.2.1 has occurred and is continuing, in addition to other remedies expressly provided herein, and subject to Section 13, the SPD shall be entitled to terminate this Agreement by serving a fifteen (15) days' notice and upon such termination,

(a) the SPD shall be entitled to receive from Purchaser the Purchase Price. The Purchase Price payable shall be the Purchase Price Specified in Schedule III that falls on such date. Upon the payment of the Purchase Price, the SPD shall cause the title of the System to transfer to the Purchaser and

(b) the SPD may exercise any other remedy it may have at law or equity or under the Agreement.

13. LIMITATIONS OF LIABILITY

Except as expressly provided herein, neither Party shall be liable to the other Party or its Indemnified Persons for any special, punitive, exemplary, indirect, or consequential damages, losses or damages for lost revenue or lost profits, whether foreseeable or not, arising out of, or in connection with the Agreement.

Subject to the provisions of the Agreement, the SPD shall be solely responsible for the manner in which its obligations under this Agreement are to be performed. All employees and representatives of the Solar Power Developer, or contractors engaged by the SPD in connection with SPD and shall not be deemed to be employees, representatives, contractors of the Purchaser Nothing contained in the Agreement or in any agreement or contract executed by the SPD shall be construed to create any contractual relationship between any such employees, representatives or contractors and the Purchaser.

Notwithstanding any liability or obligation that may arise under this Agreement, any loss, damage, liability, payment, obligation or expense which is insured or not or for which the Purchaser can claim compensation under any insurance policy, shall not be charged to or payable by the Purchaser.

14. ASSIGNMENT & NOVATION

14.1. Assignment

Notwithstanding anything contained herein, the SPD has the right to assign all or any of its rights under this Agreement (including rights over any assets hereunder), to any third party including, though not restricted to any lender, equipment lessor or other party ("Assignment"), with the consent of the Power Purchaser. The Power Purchaser shall not unreasonably withhold such consent. In the event of such assignment, the Purchaser will be able to hold the SPD as well as the party to whom the benefits under this contract are assigned, to be jointly and severally responsible for performing the obligations under this contract. Further, in the event of assignment, the Purchaser agrees to make the payments due to the SPD under this agreement, directly to the assignee, upon receipt of such notice by the Solar Power Developer. If the SPD were to sell the Solar Power Plant, then the new buyer(s) would need to abide by this Agreement. Further, the SPD reserves the right to assign whole or part of the assets to lenders/ leasing companies. Purchaser may assign its rights under this Agreement, without the prior consent of Solar Power Developer, to an Affiliate or any successor in interest to Purchaser, whether by way of merger, reorganization or sale of assets

(including any sale of a line of business). This Agreement shall insure to the benefit of and be binding upon Purchaser and its successors or assigns. However, any such actions as intended by the SPD under Section 14.1 and 14.2 shall be binding on Power Purchaser, if there are zero material inconsistencies present in the contract provisions during the time of assignment/novation, else, it shall be construed as default in contract and appropriate actions shall be taken as deemed fit.

14.2. Novation

The Parties agree and acknowledge that the SPD may intend to novate the Agreement to a party, and has the right to transfer any or all of its rights and obligations under this Agreement to a party or any other third party ("New Party"), with the consent of the Power Purchaser. The Power Purchaser shall not unreasonably withhold such consent. Upon Novation, the New Party shall automatically and without any further action be entitled to all the same rights and assume the same obligations, under this Agreement, as if it were originally a party to this Agreement. Further, the Purchaser hereby agrees and undertakes that, promptly upon receiving a request from the Solar Power Developer, the Purchaser shall execute such further writings, deeds and/or agreements and take all such further actions as may be necessary for effecting or implementing the transfer of any or all of the Solar Power Developer's rights and/or obligations under this Agreement to the New Party. If the parties agree to do Novation then separate Novation agreement shall be executed.

14.3. Notices

Unless otherwise provided in the Agreement, all notices and communications concerning the Agreement shall be in writing and addressed to the Parties at the addresses set forth below:

Solar Power Developer's addressed and contact details:

Address:

Phone No:

Purchasers address and contact details:

Address: Chief Mechanical Engineer

**COCHIN PORT AUTHORITY, Willingdon Island, Kochi-
682009**

Contact Details:

Email: cme@cochinport.gov.in

Fax. No : 0484 2666639

Phone No :91 04842582300/2352351

14.4. Notice

Unless otherwise provided herein, any notice provided for in the Agreement shall be hand delivered, sent by registered post, or by courier delivery, or transmitted by facsimile and shall be deemed delivered to the addressee or its office when received at the address for notice specified above when hand delivered or sent by courier delivered or sent by courier delivery, upon posting if sent by registered post and upon confirmation of sending when sent by facsimile on the next Business Day.

15. CONFIDENTIALITY

15.1. Confidentiality obligation

If the SPD provides confidential information, including business plans, strategies, financial information, proprietary, patented, licensed, copy righted or trademarked information, and / or technical information regarding the, design, operation and maintenance of the System ("Confidential Information") to Purchaser or, if in the course of performing under the Agreement or negotiating the Agreement Purchaser learns Confidential Information regarding the facilities or plans of the Solar Power Developer, Purchaser shall (a) protect the Confidential information from disclosure to third parties with the same degree of care accorded its own confidential and proprietary information, and (b) refrain from using such Confidential Information, except in the negotiation and performance of the Agreement. Notwithstanding the above, Purchaser may provide such Confidential Information to its officers, directors, manager, employees and Affiliates (collectively "Representatives"), in each case whose access is reasonably necessary for purposes of the Agreement. Each such recipient of confidential information shall be informed by Purchaser of its confidential nature and shall be directed to treat such information confidentially and shall agree to abide by these provisions. Purchaser shall be liable for any breach of this provision by any entity to whom it improperly discloses Confidential Information. All Confidential Information shall remain the property of the SPD and shall be returned to. It after Purchaser's need for it has expired or upon the request of the Solar Power Developer.

If the Purchaser provides confidential information, including business plans, strategies, financial information, proprietary, patented, licensed, copy righted or trademarked information, ("Confidential Information") to the SPD or, if in the course of performing under the Agreement or negotiating the Agreement the SPD learns Confidential Information regarding the facilities Or plans of the Purchaser, the SPD shall (a) protect the Confidential Information from disclosure to third parties with the same degree of care accorded its own confidential and proprietary information, and (b) refrain from using such Confidential Information, except in the negotiation and performance of the Agreement. Notwithstanding the above, the SPD may provide such Confidential Information to its officers, directors, managers, employees and Affiliates (collectively, "Representatives"), in each case whose access is reasonably necessary for purposes of the Agreement. Each such recipient of Confidential Information shall be informed by the SPD of its confidential nature and shall be directed to treat such information confidentially and shall agree to abide by these provisions. The SPD shall be liable for any breach, of this provision by any entity to whom it improperly discloses Confidential Information. All Confidential Information shall remain the property of the Purchaser and shall be returned to it after the Solar Power Developer's need for it has expired or upon the request of the Purchaser.

15.2. Permitted Disclosures

Notwithstanding any other provision contained herein, neither Party shall be required to hold confidential any information that;

Becomes publicity available other than through the receiving Party.

Is required to be disclosed under Applicable Law or pursuant to a validity issued notice or required filing, but a receiving Party subject to any such requirement shall promptly notify the disclosing Party of such requirement

Is independently developed by the receiving Party; or

Becomes available to the receiving Party without restriction from a third party under no obligation of confidentiality.

16. INDEMNITY

16.1. Solar Power Developer's Indemnity

Subject to Section 13, the SPD agrees that it shall indemnify and hold harmless Purchaser and its members, officers, employees, students, casual laborers, persons permitted' to run any business or service, such as canteens, stores, photocopy units, banks, post office, courier service, hospital and to any lawful visitors (collectively, the "Purchaser Indemnified Parties") from and against any and all Losses incurred by the Purchaser Indemnified Parties to the extent arising from or out of the following any claim for or arising out of any injury to Or death of any Person or Loss or damage to Property of any Person to the extent arising out of the Solar Power Developer's negligence or willful misconduct. The SPD shall not, however, be required to reimburse or indemnify any Purchaser Indemnified Party for any Loss to the extent such Loss is due to the negligence or willful misconduct of any Purchaser indemnified Party.

16.2. Purchaser's Indemnity

Subject to Section 13, Purchaser agrees that it shall indemnify, defend and hold harmless the Solar Power Developer, its permitted successors and assigns and their respective directors, officers, employees, contractors, sub-contractors, and agents (collectively, the "SPD indemnified Parties") from and against any and all Losses incurred by the SPD Indemnified Parties to the extent arising from or out of any claim for or arising out of any injury to or death or any Person or loss or cl6mage to property of any Person to the extent arising out of Purchaser's negligence or willful misconduct. Purchaser shall not, however, be required to reimburse or indemnify any rowel Producer Indemnified Party for any Loss to the extent such Loss is due to the negligence or willful misconduct of any SPD Indemnified Party.

17. Miscellaneous

17.1. Amendments

This Agreement may only be amended, modified or, supplemented by an instrument in writing executed by duly authorized representatives of the SPD and Purchaser.

17.2. Goodwill and Publicity

Neither Party shall use any name, trade name, service mark or trademark of the other Party in any promotional or advertising material without the prior written consent of such

other Party. The Parties shall coordinate and cooperate with each other when making public announcements related to the execution and existence of this Agreement, and each Party shall have the right to promptly review, comment upon and approve any publicity materials, press releases and other public statements by the other Party that refer to, or that describe any aspect of, this Agreement; provided that no such publicity releases or other public statements (except for filings or other statements or releases as may be required by applicable law) shall be made by either Party without the prior written consent of the other Party. Without limiting the generality of the foregoing and whether or not the consent of the other Party is required or obtained, all public statements must accurately reflect the rights and obligations of the Parties under this Agreement.

17.3. Industry Standards

Except as otherwise set forth herein, for the purpose of the Agreement, the normal standards of performance within the solar photovoltaic power generation Industry in the relevant market shall be the measure of whether a Party's performance is reasonable and timely. Unless expressly defined herein, words having well-known technical or trade meanings shall be so construed.

17.4. Cumulative Remedies

Except as set forth to the contrary herein, any right or remedy of the SPD or Purchaser shall be cumulative and without prejudice to any other right or remedy.

17.5. No Waiver

The failure of the SPD or Purchaser to enforce any of the provisions of the Agreement, or the waiver thereof, shall not be construed as a general waiver or relinquishment on its part of any such provision in any other instance or of any other provision in any instance.

17.6. Survival

The obligations under Section 8.1.4 (SPD Covenant), Sections 8.3.4, 8.3.5, 8.3.6 and 8.3.7 (Purchaser Covenants), Section 10 (Taxes and Governmental Fees), Section 13 (Limitation of Liability) Section 14.3 (Notices), Section 15 (Confidentiality), or pursuant to other provisions of this Agreement that, by their nature and context, are intended to survive. Termination of this Agreement shall survive the expiration or termination of this Agreement for any reason.

17.7. Governing Law & Jurisdiction

17.7.1 This Agreement shall be governed by and construed in accordance with the laws of India. The Parties agree that the courts in Ernakulam shall have jurisdiction over any action or proceeding arising under the Agreement.

17.7.2 In the event of any Dispute, difference of opinion or dispute or claim arising out of or relating to this Agreement or breach, termination or the invalidity thereof, shall firstly be attempted to be resolved by conciliation. Any Dispute that cannot be settled through conciliation procedure shall be referred to arbitration in accordance with the procedure given below. The Parties agree to comply with the awards resulting from arbitration. Cost of conciliation shall be equally shared by both the parties.

17.7.3 Arbitration Procedure:

Settlement of Dispute:

If any dispute of any kind whatsoever arises between Purchaser and SPD in connection with or arising out of the contract including without prejudice to the generality of the foregoing, any question regarding the existence, validity or termination, the parties shall seek to resolve any such dispute or difference by mutual consent.

If the parties fail to resolve, such a dispute or difference by mutual consent, within 45 days of its arising, then the dispute shall be referred by either party by giving notice to the other party in writing of its intention to refer to arbitration as hereafter provided regarding matter under dispute. No arbitration proceedings will commence unless such notice is given. Any dispute, in respect of which a notice of intention to commence arbitration has been given in accordance with this Section, shall be finally settled by arbitration.

17.7.4 In case the Contractor (Solar Power Developer) is a Public Sector Enterprise or a Government Department:

In case the Contractor is a Public Sector Enterprise or a Government Department, the dispute shall be referred for resolution in Permanent Machinery for Arbitration (PMA) of the Department of Public Enterprise, Government of India. Such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary / Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusive. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.

17.7.5 In All Other Cases

In all other cases, any dispute submitted by a party to arbitration shall be heard by an arbitration panel composed of three arbitrators, in accordance with the provisions set forth below.

The Purchaser and the SPD shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the two arbitrators do not succeed in appointing a third arbitrator within Thirty (30) days after the later of the two arbitrators has been appointed, the third arbitrator shall, at the request of either party, be appointed by the Appointing Authority for third arbitrator which shall be the President, Institution of Engineers.

If one party fails to appoint its arbitrator within thirty (30) days after the other party has named its arbitrator, the party which has named an arbitrator may request the Appointing Authority to appoint the second arbitrator.

If for any reason an arbitrator is unable to perform its function, the mandate of the Arbitrator shall terminate in accordance with the provisions of applicable laws as mentioned in Section 17.7 (Governing Law) and a substitute shall be appointed in the same manner as the original arbitrator.

Arbitration proceedings shall be conducted with The Arbitration and Conciliation Act, 1996. The venue or arbitration shall be Kochi.

The decision of a majority of the arbitrators (or of the third arbitrator chairing the arbitration panel, if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction as decree of the court.

The arbitrator(s) shall give reasoned award.

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the agreement unless they otherwise agree.

Cost of arbitration shall be equally shared between the SPD and Purchaser.

17.8. Severability

If any term, covenant or condition in the Agreement shall, to an extent, be invalid or unenforceable in any respect under Applicable Law, the remainder of the Agreement shall not be affected thereby, and each term, covenant or condition of the Agreement shall be valid and enforceable to the fullest extent permitted by Applicable Law and if appropriate, such invalid or unenforceable provision shall be modified or replaced by mutual written understanding to give effect to the underlying intent of the Parties and to the intended economic benefits of the Parties.

17.9. Successors and Assigns

This Agreement and the rights and obligations under the Agreement shall be binding upon and shall inure to the benefit of the SPD and Purchaser and their respective successors and permitted assigns.

17.10. Counterparts

This Agreement may be executed in one or more counterparts, all of which taken together shall constitute one and the same instrument.

17.11. Independent Service Provider

This Agreement is on a principal to principal basis between the parties hereto Nothing contained in this Agreement shall be construed or deemed to create any association, partnership or joint venture or employer employee relationship or principal-agent relationship in any manner whatsoever between the Parties

17.12. Non-Exclusive Agreement

This Agreement is on non-exclusive basis. The Purchaser is free to engage any other service provider's or may entrust services similar to those provided by the SPD under this Agreement to any other person/s, provided the Solar Power Developer's rights under this Agreement are not affected in any manner

17.13. Insurance

The SPD shall maintain at its own costs, throughout the tenure of this Agreement and any extensions thereof all mandatory insurance coverage for adequate amount including but not restricted to comprehensive general liability insurance including theft and vandalism, covering the System and accidental losses, bodily harm, injury, death of all individuals employed/ assigned by the SPD to perform the services required under this Agreement.

Annual accounts reconciliation shall be conducted annually between the SPD and Purchaser.

17.14. Entire Agreement

This Agreement constitutes the entire agreement between the Parties hereto with respect to the subject matter of this Agreement and supersedes all prior agreements and undertakings, written or oral, with respect to the subject matter hereof except as

otherwise expressly provided herein. The Schedules annexed to this Agreement also form a part of this Agreement.

IN WITNESS WHEREOF the Parties have caused the Agreement to be duly executed through their duly authorized representatives as of the date set forth above.

Solar Power Developer:

Purchaser:

M/s

M/s

Signature: _____

Signature: _____

Name: _____

Name: _____

Designation: _____

Designation: _____

Seal:

Seal:

Witness:

Witness:

1. Name: _____

1. Name: _____

2. Designation: _____

2. Designation: _____

Signature:

Signature:

2. Name: _____

2. Name: _____

Designation: _____

Designation: _____

Signature:

Signature:

Schedule 1: Description of the Premises

Sr.No.	Item	Description
1.	Premises Overview	Backwaters Near Copt's Walkway Avenue Between BOT Junction And Kannangatt Bridge At W/Island, Cochin, Kerala
2.	Segment	Floating (Water Body Area)
3.	Hours of Operation	
4.	Security	
5.	Capacity and Area Requirement	15000 sqr mtr.
6.	Capacity	<u>1500 kWp</u> (2X0.75MWp)
7.	Module Area	<u>2x375x2</u> mtr (PV System)
8.	Capacity	1500 kWp
9.	Distribution	Cochin Port Authority

Commissioning Procedure

- i) SPDs shall give to the CoPA / RLDC, at least 30 (Thirty) Days advance written notice of the date on which it intends to synchronize the Power Project to the Grid System. The SPD shall be solely responsible for any delay or non-receipt of the notice by the concerned agencies, which may in turn affect the Commissioning Schedule of the Project.
- ii) A Solar PV Project will be considered as commissioned if all equipment as per rated project capacity has been installed and energy has flown into the grid.
- iii) SPD shall ensure that the equipment up to the rated Capacity has been installed and completed in all respects before the Scheduled Commissioning Date. The same shall be verified by the Chief Mechanical Engineer or his representative during their visit to the Project and documented as per prescribed format.

Documents to be submitted to CoPA:

The SPD will have to submit the following documents (duly signed and stamped by authorized signatory) well in advance prior to the scheduled commissioning date. The SPD shall also have to submit the hardcopies to CoPA for verification/ cross check.

1. Invoice(s) of the Major Equipment(s) (including but not limited to modules, floats, anchoring/mooring system, Inverters/ PCUs, Monitoring Stations/ DC Cables and all major electrical equipment).
2. All supporting documents towards meeting the technical compliance, along with datasheet/ warranty certificates/ contract agreement etc.
3. Installation report duly signed by the authorized signatory.
4. Plant Layout clearly mentioning the details of rows and number of modules in each row.
5. CEA report along with all annexures/ attachments.
6. SPD shall ensure Connectivity to the KSEBL's grid during export of solar power.-
7. Synchronization Certificate as per prescribed format issued by respective CoPA / KSEBL or ascertaining injection of power into grid.
8. Supporting document for "Consent to Operate"
9. Snap Shots of the Plant from various angles shall be taken for covering installation of important components of the solar power plant and made part of Installation Report.
10. Reading of all the inverters (instantaneous and total generation) along with its serial number of a particular date.
11. After the submission of the documents by SPD, CoPA shall verify the documents and intimate/ reply with remarks. In case any additional supporting/ revised documents are asked by CoPA the same have to be submitted by the SPD.

12. Only after all the required documents are verified by CoPA, the SPD shall have to submit the proposed commissioning date.
13. SPD shall have to submit the as-built drawing after the commissioning prior to the COD.
14. SPD shall have to push the required plant related data to CoPA designated server in required formats. Additionally, SPD shall also provide the login details/ SCADA login to CoPA for online real time data monitoring.

Note: The commissioning procedure may change subject to any guidelines from CoPA

Schedule 2B: Fees

Following are the details of the tariff agreed between the parties:

Purchaser shall pay power producer for solar power at the rate equal to INR--/kWh

Year wise tariff is as follows;

Year of Operation	Tariff (Rs/kWh)
Year 1	
Year 2	
Year 3	
Year 4	
Year 5	
Year 6	
Year 7	
Year 8	
Year 9	
Year 10	
Year 11	
Year 12	
Year 13	
Year 14	
Year 15	
Year 16	
Year 17	
Year 18	
Year 19	
Year 20	
Year 21	
Year 22	
Year 23	
Year 24	
Year 25	

The fees and payment details are provided in detail under Section 7 of this agreement.

Schedule 3: Purchase Value

The following is the purchase value of the system over a period of 25 years. This may be applicable under the following conditions.

1. The Power Purchaser terminates the PPA before the 25 years PPA Tenure
2. The Solar Project is relocated or shifted owing to demolition of the Building, damage to the building, change of city plans or any other reason.

The Price reference taken for calculating the total cost of the system is as per RFS rates for the state of Kerala has used the CERC guidelines for arriving at the Project cost.

Year of Term	Calendar Year	Purchase Price in (Rs.)
Year 1		
Year 2		
Year 3		
Year 4		
Year 5		
Year 6		
Year 7		
Year 8		
Year 9		
Year 10		
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
Year 16		
Year 17		
Year 18		
Year 19		
Year 20		
Year 21		
Year 22		
Year 23		
Year 24		
Year 25		

Schedule 4: Particulars of the Project

	Project	1.5 MWp Solar On-Grid Power Project		
	Location:		W/Island,Kochi	
			Design Criteria	
	Expected Yearly Energy Generation Sheet			
End of Year	Yearly Degradation 'MWh' (Modules & System)	Global incident in coll. Plane (GlobInc) 'kWh/Sq.mtr ' Yearly	Energy injected into grid (E_Grid) 'MWh' Yearly	

Year	Degradation consider in PV system generation data		
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			
Year 6			
Year 7			
Year 8			
Year 9			
Year 10			
Year 11			
Year 12			
Year 13			

Year 14			
Year 15			
Year 16			
Year 17			
Year 18			
Year 19			
Year 20			
Year 21			
Year 22			
Year 23			
Year 24			
Year 25			

Schedule 5: Government approvals

1. To be obtained by the Solar Power Developer

All approvals including approvals/consents required under local regulations, building codes and approvals required from the major distribution utility, Pollution Control Board, CRZ clearance etc. relating to installation and operation of the system (including the government incentives/subsidies available for the project) and generation and supply of solar power from the Project.

2. To be obtained by Power Purchaser

Any authorizations required of purchaser, including those required for installation of system at the premises. Permissions and coordination with KSEBL or any related organization for grid connectivity.

Schedule 6: RFP

Schedule 7: Bank Details

NAME OF THE BENEFICIARY:

PRINCIPAL PLACE OF BUSINESS & ADDRESS:

NAME OF THE BANK:

BANK ADDRESS: URBAN CENTRE NO -

BANK ACCOUNT NO:

TYPE OF BANK ACCOUNT - SB/CA/CC:

IFSC/NEFT/RTGS CODE:

MICR CODE:

PAN CARD NO:

PHONE NO./FAX NO. WITH STD CODE:

EMAIL ID OF CONTACT PERSON:

INSTALLATION REPORT

(To be provided by SPD and to be submitted at least 10 days prior to Commissioning Date which shall be verified by Commissioning Committee)

Sr. No.	Capacity of the Project (MW)	
	Capacity already commissioned (MW)	
	Capacity proposed to be commissioned (MW)	
I.	Technology used (please specify along with capacity of each type)	
II.	Rating of each module (Wp)	
III.	Angle from horizontal at which array is installed	
IV.	Number of modules installed of each type	
V.	Source(s) of the cells installed of each type	
VI.	Source(s) of the Modules installed of each type	
VII.	Number of PCUs/ Inverters installed	
VIII.	Source of the PCUs/ Inverters (Name of supplier with address)	
IX.	Rating of PCUs/ Inverters	
X.	Date of Installation of Full Capacity (as per Capacity proposed to be Commissioned)	
	PV Arrays	
	PCUs/ Inverters	
	Transformers	

REMAINDER OF THE PAGE IS INTENTIONALLY LEFT BLANK