

Expression of Interest

for

Empanelment of Vendors

for

Design, supply, erection, testing and commissioning including warranty, Comprehensive operation & maintenance of SPV Plant of grid interactive rooftop solar PV power plant of various capacities in the State of Delhi – Under CAPEX Model (Part-A , Part-B & Part C) and RESCO Model (Part-D & E).

EOI - RFS No: IPGCL/RFS-EOI-1/CAPEX-RESCO/04/ 2016

Dated:



INDRAPRASTHA POWER GENERATION COMPANY LTD.

‘HIMADRI’, RAJGHAT POWER HOUSE COMPLEX,

RAJGHAT, NEW DELHI – 110 002

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Empanelment of vendors for Grid interactive rooftop Solar PV Power Plant for Aggregate capacity 84 MWp under 30% CFA approved by MNRE

On behalf of “Energy Efficiency & Renewable Energy Management Centre”, the state nodal agency, Department of Power, Government of NCT of Delhi and Indraprastha Power Generation Co. Ltd. (hereinafter called “IPGCL”), invites project developers, Technology providers, System Integrators, Renewable Energy Service Companies (RESCO), EPC Contractors to participate in the Expression of Interest (EOI) for design, supply, erection, testing and commissioning including warranty, comprehensive operation & maintenance (i.e. for 05 years for part A , B & C and 25 Years for Part D & E) of Grid Connected Roof Top Solar PV power system of various capacities in the State of Delhi (under CAPEX & RESCO Model).

For the implementation of above mentioned work, Bidders should submit their bid proposal online complete in all aspect on or before Last date of Bid Submission as mentioned on E-tender web Portal of Delhi Government (<https://govtprocurement.delhi.gov.in/nicgep/app>).

Bidder shall submit bid proposal along with non-refundable processing fee, complete in all respect as per the Bid Information sheet. Techno-Commercial bids will be opened as per the Bid Information Sheet in online presence of authorised representatives of bidders who wish to be present online. Bid proposals received without the prescribed processing fee and Bid Bond will be rejected. In the event of any date indicated above is a declared Holiday, the next working day shall become operative for the respective purpose mentioned herein.

Bid documents which include Eligibility criteria, “Technical Specifications”, various conditions of contract, formats, etc. can be downloaded from IPGCL website www.ipgcl-ppcl.gov.in or from E-tender web Portal of Delhi Government (<https://govtprocurement.delhi.gov.in/nicgep/app>). It is mandatory to download official copy of RFS Document from Electronic Tender System (ETS) Portal of E-tender web Portal of Delhi Government (<https://govtprocurement.delhi.gov.in/nicgep/app>) to participate in the Tender. Any amendment(s)/corrigendum/clarifications with respect to this Bid shall be uploaded on E-tender web Portal of Delhi Government (<https://govtprocurement.delhi.gov.in/nicgep/app>) website only. The Bidder should regularly follow up for any Amendment/ Corrigendum/ Clarification on the above website.

GM (C&M), IPGCL

Bid Information Sheet

Bid Description	<p>The bidding process under this Rooftop scheme is for 84 MWp comprising of CAPEX Model Part A, B & C(60 MWp) & RESCO Model Part-D & E (24MWp).</p> <ol style="list-style-type: none">1. Under PART-A (total Aggregate capacity 10 MWp), Bidder can apply for minimum aggregate capacity of 100 kWp and maximum aggregate capacity of 1MW.2. Under PART-B (total Aggregate capacity 20 MWp), Bidder can apply for the minimum aggregate bid capacity of 500 kWp and maximum aggregate bid capacity of 2 MWp.3. Under PART-C (total Aggregate capacity 30 MWp), Bidder can apply for the minimum aggregate bid capacity of 1 MWp and maximum aggregate bid capacity of 3 MWp.4. Under Part-D (total Aggregate capacity 12 MWp)(Fixed annually escalating tariff @5%), Bidder can apply for the minimum aggregate bid capacity of 1 MWp and maximum aggregate bid capacity of 4 MWp.(Selection on levelised tariff as per bid evaluation criteria)5. Under Part-E (total Aggregate capacity 12 MWp)(Fixed tariff for 25 years) <p>Bidder can apply for the minimum aggregate bid capacity of 1 MWp and maximum aggregate bid capacity of 4 MWp.(Selection on minimum 1st year tariff based energy cost calculation as per evaluation criteria)Bidder can bid for PART-A or PART-B or Part C or PART-D or PART-E as per the eligibility criterion of RFS. Bidders can also bid combination of Part A, Part B, Part C , Part D or Part E and all five parts.</p>
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Broad Scope	<p>Identification of rooftops which includes submission of project sanction documents (EPC agreement between Empanelled Vendor and the rooftop owner (s) at the quoted project cost/ PPA with the buyer/ Clearances from DISCOMs/ at the tariff as per RFS, and project report) for the approval of IPGCL for issue of project specific sanction letter(s).</p> <p>Design, Engineering, Manufacture, Supply, Storage, Civil work, Erection, Testing & Commissioning of the grid connected rooftop solar PV project including Operation and Maintenance (O&M) of the project for a period of 5 years for PART-A ,Part-B & Part C and for 25 years for PART-D & E after commissioning of project.</p>
Pre-Bid Conference/Clarification meeting	A pre-bid conference shall be held on _____, 2016 at 11:00 Hrs at C&M Deptt, 1st floor 220 kV Sub Station Building, Pragati Power Station, I.P. Estate, Ring Road, New
Bid Deadline	_____, 2016 up to 11:00 Hrs
Date of Techno-Commercial bids opening	_____, 2016 at 11:30 Hrs.
Validity of Bid	12 months after the date of Techno-Commercial Bid Opening date.
Processing Fee (In favor of IPGCL) (Non refundable)	<p>For Part-A: Rs.5,000/- + Service tax. For Part B, Part-C, Part D & Part E: Rs.15,000/- + Service tax.</p> <p>The processing fee is to be furnished through Demand Draft (DD) drawn in favour of “IPGCL” payable at New Delhi to be submitted in a separate sealed envelope along with offline documents.</p> <p>The processing fee shall be submitted separately for PART-A, PART-B , PART-C , Part D and Part E respectively</p>
Bid Bond	<p>Based on the Bid capacity proposed by the bidder in the bid, Bid Bond shall be furnished.</p> <p>➤ Bid bond amount = (Rs.15.0 Lakhs) x Bid Capacity in MWp</p> <p>Bid bond shall be submitted separately for PART-A, PART-B , PART-C , Part D and Part E respectively</p>
Bid Process	Two Part (Techno-Commercial Bid & Price Bid) on E-tender web Portal of Delhi Government (https://govtprocurement.delhi.gov.in/nicgep/app)

Name, Designation, Address and other details	GM (C&M), 1st floor 220 Kv Sub Station Building, Pragati Power Station, I.P. Estate, Ring Road, New Delhi-110 002
Important Note: Prospective bidders are requested to remain updated for any notices/amendments/clarifications etc. to the RFS document through the website www.ipgcl-ppcl.gov.in . No separate notifications will be issued for such notices/amendments/ clarification etc. in the print media or individually. All the information related to this RFS shall be updated in the IPGCL website www.ipgcl-ppcl.gov.in .	

Definitions & Abbreviations

1.0 DEFINITIONS & ABBREVIATIONS

In this “Bid / RFS Document” the following words and expression will have the meaning as herein defined where the context so admits:

- 1.1 **“Affiliate”** shall mean a company that either directly or indirectly;
- (a) controls or
 - (b) is controlled by or
 - (c) is under common control with

A Bidding Company and “control” means ownership by one company of at least twenty six percent (26%) of the voting rights of the other company.

- 1.2 **“B.I.S”** shall mean specifications of Bureau of Indian Standards (BIS).
- 1.3 **“Bid”** shall mean the Techno Commercial and Price Bid submitted by the Bidder along with all documents/credentials/attachments annexure etc., in response to this RFS, in accordance with the terms and conditions hereof.
- 1.4 **“Bidder”** shall mean Bidding Company/ Bidding consortium submitting the Bid. Any reference to the Bidder includes Bidding Company / Bidding consortium / consortium, members 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”.
- 1.5 **“Bidding Company”** shall refer to such single company that has submitted the response in accordance with the provisions of this RFS.
- 1.6 **“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.
- 1.7 **“Bid Bond”** shall mean the unconditional and irrevocable bank guarantee to be submitted along with the Bid by the Bidder under Clause of this RFS, in the prescribed Format;
- 1.8 **“Bid Deadline”** shall mean the last date and time for submission of Bid in response to this RFS as specified in Bid information Sheet;
- 1.9 **“Bid Capacity”** shall means capacity offered by the bidder in his Bid under invitation.
- 1.10 **“CAPEX”** CAPEX Model.
- 1.11 **“CEA”** shall mean Central Electricity Authority.
- 1.12 **“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;
- 1.23 **“Competent Authority”** shall mean Managing Director (MD) of Indraprastha Power Generation Co. Ltd. himself and/or a person or group of persons nominated by MD for the mentioned purpose herein;
- 1.24 **“Commissioning”** means Successful operation of the Project / Works by the Contractor, for the purpose of carrying out Performance Test(s) as defined in RFS.

- 1.25 **“Company”** shall mean a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013, including any amendment thereto.
- 1.26 **“Contract Year”** shall mean the period beginning from the Effective Date and ending on the immediately succeeding March 31 and thereafter each period of 12 months beginning on April 1 and ending on March 31 provided that:
- (i) 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 March 31, and thereafter each period of twelve (12) months commencing on April 1 and ending on March 31, and
 - (ii) provided, further that the last Contract Year of this Agreement shall end on the last day of the Term of this Agreement.
- 1.27 **“Capacity Utilization Factor”** (CUF) means the ratio of the annual output of the plant in kWh versus installed plant capacity for number of days.
- CUF = plant output in kWh / (installed plant capacity in kW * 365X24).**
- 1.28 **“DNI”** means daily net irradiation.
- 1.29 **“EE&REM”** shall mean Energy efficiency and Renewable Energy centre of Delhi.
- 1.30 **“Eligibility Criteria”** shall mean the Eligibility Criteria as set forth in Clause 3.4 of this RFS.
- 1.31 **“Financially Evaluated Entity”** shall mean the company which has been evaluated for the satisfaction of the Financial Eligibility Criteria set forth in Clause 3.4.3 hereof;
- 1.32 **“IEC”** shall mean specifications of International Electro-technical Commission;
- 1.33 **“Inter-connection point / Delivery / Metering Point”** shall mean the point at distribution voltage level where the power from the solar power Project is injected. Metering shall be done at this interconnection point where the power is injected into the Distribution System i.e. the Delivery Point. For interconnection with grid and metering, the SPD shall abide by the relevant DERC Net metering System, Grid Code and Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended and revised from time to time;
- 1.34 **“IPGCL”** shall mean Indraprastha Power Generation Co. Ltd., New Delhi (A Govt. Enterprise) under department of Power GNCTD of Delhi or its successor or assign companies nominated by GNCTD of Delhi.
- 1.35 **“kWp”** shall mean Kilo-Watt Peak;
- 1.36 **“kWh”** shall mean Kilo-Watt-hour;
- 1.37 **“Letter of Intent” or “LOI”** shall mean the letter issued by Indraprastha Power Generation Company Limited (IPGCL) to the Selected Bidder for award of the Project.
- 1.38 **“LOA”** shall mean Letter of Allocation.
- 1.39 **“MNRE”** shall mean Ministry of New and Renewable Energy, Government of India;
- 1.40 **“Maximum Bid Capacity”** shall mean 14 MW which is the maximum capacity for which the Bidder can submit its Bid.

- 1.41 **“Model(s)”** shall mean CAPEX and RESCO.
- 1.42 **“Net Meter”** means an appropriate energy meter capable of recording both import& export of electricity or a pair of meters one each for recording the net import and net export of electricity as the case may be;
- 1.43 **“O&M”** shall mean Operation & Maintenance of Rooftop Solar PV System for a period of 05 years for part A ,B & C and 25 Years for Part D & E
- 1.44 **“PBG”** shall mean performance Guarantee
- 1.45 **“Project Cost / Project Price”** shall mean the price offered by the Bidder for the Scope of work as per RFS document based on which subsidy amount will be calculated and paid by EE&REM Centre.
- 1.46 **“Project capacity”** means Capacity in kWp/MWp allocated to the Bidder for various locations within the state of Delhi consisting of single or multiple roof tops. The project capacity specified is on “DC” output Side only.
- 1.47 **“Performance Ratio”** (PR) means “Performance Ratio” (PR) means the ratio of plant output versus installed plant capacity at any instance with respect to the radiation measured.
- PR= (Measured output in kW /Installed Plant capacity in kW * (1000 W/m2/Measured radiation intensity in W/m2).**
- 1.48 **“Parent Company”** shall mean a company that holds at least twenty six percent (26%) of the paid-up equity capital directly or indirectly in the Bidding Company as the case may be;
- 1.49 **“Project Sanction Documents”** shall mean the documents required for sanction of project.
- 1.50 **“Price Bid”** shall mean Envelope III of the Bid, containing the Bidder’s quoted Price as per the Section- IV of this RFS;
- 1.51 **“Project Cost”** shall mean the Cost offered by the bidder for the scope of work as per the RFS document.
- 1.52 **“Qualified Bidder ”** shall mean the Bidder(s) who, after evaluation of their Techno Commercial Bid stand qualified for opening and evaluation of their Price Bid;
- 1.53 **“RFS”** shall mean Request for Selection (RFS)/Bid document/ Tender Document.
- 1.54 **“Renewable energy meter”** refers to a unidirectional energy meter, installed and used solely to record the renewable energy generation from the Renewable Energy System installed at the consumer’s premises;
- 1.55 **“Rooftop Owner”** shall means owner of Buildings at various locations within the state of Delhi consisting of single or multiple roof tops.
- 1.56 **“Statutory Auditor”** shall mean the auditor of a Company appointed under the provisions of the Companies Act, 1956 or under the provisions of any other applicable governing law;
- 1.57 **“Empanelled Vendor(s) /Contractor/ Project Developers(s)”** shall mean the Bidder(s) selected by IPGCL pursuant to this RFS for Implementation of Grid Connected Roof Top Solar PV System as per the terms of the RFS Documents, and to whom an Allocation

Letter/Work Order has been issued;

- 1.58 **“SNA”** shall mean State Nodal Agency. The state nodal agency is EE&REM Centre.
- 1.59 **“Solar Power Developer (SPD)”** shall mean Empanelled Vendor(s) to whom the project is/are allocated.
- 1.60 **“Subsidy”** shall mean financial assistance to be provided by MNRE (As per present order shall be 30% of total Project Cost, in case subsidy comes down from present subsidy @ 30%, the balance shall be borne by the rooftop beneficiary).
- 1.61 **“Tendered Capacity”** shall mean the Total aggregate capacity in MW / KW indicated to the Empanelled Vendor through this bidding process as per terms and conditions specified therein;
- 1.62 **“Ultimate Parent Company”** shall mean a company which directly or indirectly owns at least twenty six percent (26%) paid up equity capital in the Bidding Company) and/or in the Financially Evaluated Entity and such Bidding Company and /or the Financially Evaluated Entity shall be under the direct control or indirectly under the common control of such company;
- 1.63 **“Wp”** shall mean Watt Peak;
- 1.64 **“RESCO”** shall mean Renewable Energy Service Companies.
- 1.65 **“RESCO model”** shall mean where the bidders intend to take a roof top owned by some other entity on mutually agreed terms and conditions from the roof top owner(s) and enters into the PPA with rooftop owner / DISCOM / others for supply of Solar power for 25 years from the date of Commissioning of project. All the expenses towards implementation of this tender shall be completely in the scope of SPD including net meter cost/application fee for net metering etc.
- 1.66 **“ Levelised Tariff”** shall mean the tariff offered by the bidder for 25 years as per the scope of work as per the RFS document

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 document be 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.

DISCLAIMER

1. Though adequate care has been taken while preparing the RfS document, the Bidders shall satisfy themselves that the document is complete in all respects. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any Bidder within fifteen (15) days from the date of notification of RfS/ Issue of the RFS document, it shall be considered that the RfS document is complete in all respects and has been received by the Bidder.
2. Indraprastha Power Generation Company Limited (IPGCL) reserves the right to modify, amend or supplement this RfS document.
3. While this RFS has been prepared in good faith, neither IPGCL nor their employees 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 RFS, even if any loss or damage is caused by any act or omission on their part.

Place: New Delhi

Date:_____

SCOPE OF WORK:

To provide technical assistance and determination of the competitive cost and fixation of CFA of the solar power project to be installed at various premises/organizations under the Delhi grid interactive rooftop solar PV power plant scheme, IPGCL invites bids for empanelment of firms for Design, supply, erection, testing and commissioning including warranty, comprehensive operation & maintenance for a period of 05 years for part A & Part B and Part C and 25 Years for Part D & E of grid interactive rooftop solar PV power plant of various capacities in the State of Delhi from the various Channel Partners and New Entrepreneurs empanelled by MNRE under CAPEX model for Part-A , Part-B & Part C and RESCO model for Part-D & E.

IPGCL will empanel various firms who participate in this empanelment process and wish to provide their services on subsidy of lowest quoted prices which are received under this EOI for Part-A, Part-B ,Part-C, Part D & Part E.

The selected firms will have to execute the projects under the Delhi Grid Interactive Roof Top Solar PV Power Plants in accordance with technical specification and various other requirements as per latest directions/guidelines of MNRE under JNNSM.

The successful empanelled firms shall approach the applicants for receiving the orders on the rates approved by IPGCL for Turnkey Execution of the Solar PV Plants. Besides they can approach any interested roof top owners also for the same, but the first priority shall be of applicants registered by EE&REM Centre.

IPGCL will not be responsible in case any empanelled firm does not get any work order from the applicants under the Grid Interactive Roof Top Solar PV Power Plants Scheme. The applicants (Roof top owners) under this scheme shall be free to install their projects from any empanelled firm subject to the condition that project shall have to be installed/commissioned as per the MNRE and EE&REM guidelines.

The empanelled firms will carry out the design, supply, erection, testing and commissioning including warranty, comprehensive operation & maintenance for a period of 05 years for Part A, Part B & Part C and 25 Years for Part D & Part E of grid interactive rooftop solar PV power plant and shall make all necessary arrangement for evacuation and injection of surplus power to the grid at the interconnection point/ points as agreed with DISCOMs.

The admissible CFA shall be released by IPGCL as per payment clause in favor of empanelled vendor after successful commissioning of the plant and inspection of the plant

by the EE&REM/ IPGCL officials/ their representatives.

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SECTION - I

A. INTRODUCTION, BID DETAILS AND INSTRUCTIONS TO THE BIDDERS

1. INTRODUCTION

1.1 Delhi has envisaged a cumulative target of 84 MW grid interactive Rooftop power plants in Delhi based on net metering scheme, out of which, under the present tender, EE&REM Centre/IPGCL envisages installation of grid connected roof top solar PV plants eligible for central financial assistance @30% of competitive rates arrived through this bidding/ benchmark cost / Levelised tariff for Delhi whichever is lower as per MNRE order no. 03/88/2015-16/GCRT dated 04.03.2016 and its amendments during pendency of the period of this empanelment within the prescribed capacity limit of upto 500 kW at one site.

EE&REM Centre, Delhi may register interested applicants (rooftop owners) for roof top solar PV installation under the scheme and the same may be shared with empanelled vendors for installation.

1.2 This scheme with aggregate capacity of 84 MWp for Delhi state only envisages installation of grid-connected roof top solar PV projects on the roofs of entities as specified by MNRE vide notification no. 5/34/2013-14/RT dated 19/11/2015 and 03/88/2015-16/GCRT dated 04.03.2016 i.e. broadly in following categories:

Sl. No.	Category	Coverage of Buildings
(i)	Residential	All types of residential buildings
(ii)	Institutional	Schools, health institutions including medical colleges & hospitals, universities, educational institutions etc. [applicable to not-for-profit registered organizations only, except those covered under Sl. No. (iv), (v) & (vi)].
(iii)	Social sector	Community centers, welfare homes, old age homes, orphanages, common service centers, common workshops for artisans or craftsman, facilities for use of community, Trusts/ NGOs/Voluntary organizations/ Training institutions, any other establishments for common public use etc. [applicable to not-for-profit registered organizations only, except those covered under Sl. No. (iv), (v) & (vi)].
No CFA shall be available to the following Categories.		
(iv)	Government Buildings	Buildings of Both Central & State Government, local government covering all Government offices.

(v)	Government Institutions	Government Institutions, Public Sector Undertakings, all buildings owned by Government directly or by any Government owned societies, companies, corporations, Institutions or organizations, Government educational/ health institutions.
(vi)	Private, commercial and industrial sector	All types of buildings.

The Subsidy structure applicable is as Tabulated below:

Category	Subsidy structure
PART-A for CAPEX (1 kWp to 5 kWp)	Subsidy @30% of L1 quoted project cost or Rs.22.5/Wp, whichever is lower
PART-B for CAPEX (Above 5 kWp to 10 kWp)	Subsidy @30% of L1 quoted project cost or Rs.22.5/Wp, whichever is lower
PART-C for CAPEX (Above 10 kWp)	Subsidy @ 30% of L1 quoted project cost or Rs.21.3/Wp, whichever is lower
PART-D for RESCO (Above 25 kWp) (Fixed annually escalating tariff @5%	Subsidy @30% of L-1 quoted project cost subject to a maximum of Rs.2.13 Crore per MWp.
PART-E for RESCO (Above 25 kWp) (Fixed tariff for entire 25 years)	Subsidy @30% of L-1 quoted project cost subject to a maximum of Rs.2.13 Crore per MWp.

- 1.3 On behalf of EE& REM, IPGCL, which expression shall also include its successors and permitted assigns, hereby invites interested companies to participate in the bidding process for the selection of Empanelment of vendors for implementation of large scale grid-connected roof top Solar Photovoltaic Projects under this scheme as per RFS.
- 1.4 The bidders, who are techno-commercially qualified, shall be empanelled who wish to provide their services on subsidy of lowest quoted prices. The tenure of empanelment shall be one year from the date of empanelment letter issued by IPGCL. IPGCL at its sole discretion and as per the requirement may renew the tenure of empanelled agencies.

- 1.5 The Bidder is advised to read carefully all instructions and conditions appearing in this document and understand them fully. All information and documents required as per the bid document must be furnished. Failure to provide the information and/ or documents as required may render the bid technically unacceptable.
- 1.6 The bidder shall be deemed to have examined the bid document, to have obtained his own information in all matters whatsoever that might affect carrying out the works in line with the scope of work specified elsewhere in the document at the offered rates and to have satisfied himself to the sufficiency of his bid. The bidder shall be deemed to know the scope, nature and magnitude of the works and requirement of materials, equipment, tools and labour involved, wage structures and as to what all works he has to complete in accordance with the bid documents irrespective of any defects, omissions or errors that may be found in the bid documents.

2.0 BID DETAILS:

- 2.1 The bidding process under this rooftop scheme is for 10 MWp capacity under PART-A, 20 MWp capacity under PART-B, 30 MWp under Part C and 12 MWp each under Part D & Part E. Bidder shall submit bids for the minimum aggregate bid capacity of 100 kWp under PART-A, 500 kWp under PART-B, 01 MWp under Part C , 1 MWp under Part D & Part E.

2.1.0 Bids in PART-A:

Model	: CAPEX (1 kWp upto 5 kWp)
Total Aggregate Capacity	: 10 MWp
Minimum aggregate bid capacity	: 100 kWp
Maximum aggregate bid capacity	: 1 MWp

In Part-A, bids are invited from the prospective bidders for the tendered capacity based on the Project Cost (CAPEX Model). In this part, bidder will be required to quote the Project Cost for the capacity proposed by the bidder (not less than 100 kWp). Based on lowest Project cost quoted, Successful Bidders will be provided subsidy @ 30 % of the L1 quoted project cost or Rs.22.5/Wp, whichever is lower; from IPGCL to the Successful Bidders for the allocated capacity as per RFS.

2.1.1 Bids in PART-B:

Model	: CAPEX (above 5 kWp to 10 kWp)
Total Aggregate Capacity	: 20 MWp
Minimum aggregate bid capacity	: 500 kWp
Maximum aggregate bid capacity	: 02 MWp

In Part-B, bids are invited from the prospective bidders for the tendered capacity based on the Project Cost (CAPEX Model). In this part, bidder will be required to quote the Project Cost for the capacity proposed by the bidder (not less than 500 kWp). Based on lowest Project cost quoted, Successful Bidders will be provided subsidy @ 30 % of the L1 quoted project cost or Rs.22.5/Wp, whichever is lower; by IPGCL to the Successful Bidders for the allocated capacity as per RFS

2.1.2 Bids in PART-C:

Model	: CAPEX (above 10 kWp upto 500 KWp)
Total Aggregate Capacity	: 30 MWp
Minimum aggregate bid capacity	: 1 MWp
Maximum aggregate bid capacity	: 03 MWp

In Part-C, bids are invited from the prospective bidders for the tendered capacity based on the Project Cost (CAPEX Model). In this part, bidder will be required to quote the Project Cost for the capacity proposed by the bidder (not less than 1 MWp). Based on lowest Project cost quoted, Successful Bidders will be provided subsidy @ 30 % of the L1 quoted project cost or Rs.21.3/Wp, whichever is lower from IPGCL to the Successful Bidders for the allocated capacity as per RFS.

2.1.3 Bids for PART- D (Fixed annually escalating rate of 5% in tariff):

Model	: RESCO
Total Aggregate Capacity	: 12MWp
Minimum aggregate bid capacity	: 01 MWp
Maximum aggregate bid capacity	: 4 MWp

In the Part D, bids are invited from the prospective bidders for the Tendered Capacity. In this part, successful bidders will be provided Subsidy @30% of L-1 quoted project cost subject to a maximum of Rs.2.13 Crore per MWp. Bidders will be required to furnish year on year tariff for 25 years starting from the date of commissioning of the Project with 5% escalation every year uniformly for 25 years. Tariff stream quoted by the bidder shall then be levelised with a discounting rate of 11%. Any bid quoted above the maximum allowable project cost shall be restricted to Rs.71/Wp for bid evaluation purpose.

Calculation of tariff is provided in **Annexure C**.

2.1.4 Bids for PART- E (Fixed tariff for entire 25 years):

Model	: RESCO
Total Aggregate Capacity	: 12MWp
Minimum aggregate bid capacity	: 01 MWp
Maximum aggregate bid capacity	: 4 MWp

In the Part E, bids are invited from the prospective bidders for the Tendered Capacity. In this part, successful bidders will be provided Subsidy @30% of L-1 quoted project cost subject to a maximum of Rs.2.13 Crore per MWp. Bidders will be required to furnish fixed year on year tariff for 25 years starting from the date of commissioning of the Project for 25 years. Tariff stream quoted by the bidder shall then be levelised with a discounting rate of 11%. Ceiling levelised tariff is Rs 5.10/unit. Any bid quoting above this will be rejected, Any bid quoted above the maximum allowable project cost shall be restricted to Rs.71/Wp for award purpose.

For Subsidy	Ceiling Tariff (Rs. kWh)
With 30% CFA	Maximum allowable tariff for this part is Rs.5.10 kWh.

The bids with tariff in excess of above said tariffs shall be out rightly rejected.

Calculation of levelised tariff is provided in **C**

2.2 Bids not in conformity with above provisions & sub-clauses of Clause 2.1 will not be considered.

2.3 SIZE OF THE PROJECTS:

2.3.0 The size of each project shall be in the range for the each parts as under:

- PART-A : 1 kWp to 5 kWp.**
- PART-B : above 5 kWp to 10 kWp.**
- PART-C : above 10 kWp to 500 kW.**
- PART-D : above 25 kWp.**
- PART-E : above 25 kWp.**

One project may however comprise of several rooftop units. Each roof top unit can separately connect with the grid and may have separate meters.

2.3.1 Further, Empanelled Vendors to whom letter of allocation has been issued will be allowed to submit single proposal for an aggregate capacity not less than 100 kWp for approval and issue of sanction letter by IPGCL. Single sanction letter will be issued for the total aggregate capacity submitted by the bidder for approval as per above.

2.3.2 Bids shall be submitted for the minimum bid capacity of 100 kWp for PART-A, and 500 kWp for PART-B, 1 MWp for Part C and 1 MWp each for Part D & E.

2.3.3 However, a Bidder can apply and is eligible to apply for a maximum capacity of 14 MWp under PART-A, PART-B, PART-C, PART-D & Part E. Offer of the Bidders quoting cumulative capacity more than the maximum tendered capacity or less than the minimum tendered capacity be out rightly rejected.

2.3.4 Bids quoting more than maximum bid capacity as per above shall be out-rightly

rejected.

3.0 INSTRUCTIONS TO THE BIDDERS

3.1 For Part A & B:

All MSMEs registered with agencies / bodies specified by Ministry of MSME as per clause 3.35.9 are eligible to participate in the Tender.

Also, as per MNRE Order regarding 'Operational Guidelines for Channel Partners/ New Entrepreneurs' (No.5/ 22/ 2013-14/ RT dated 18.09.2015), new entrepreneurs and Channel Partners registered with MNRE shall be eligible to participate in this tender.

It should not be blacklisted from Ministry of Corporate Affair or any other Government bodies/PSUs etc.

It should have valid PAN / Sales Tax Registration Numbers under VAT/Sales Tax rules (PAN/TAN) or as per statutory requirement.

General particulars of bidders as per **Format-2**.

NB: If the bidder's submitted information is found to be false declaration or misrepresentation, the bidder(s) shall be out rightly rejected or debarred or blacklisted from IPGCL's future tenders.

3.2 For PART-C, D & E:

Bidder must meet the eligibility criteria independently as Bidding Company or as a Bidding Consortium with one of the members acting as the Lead Member of the Bidding Consortium. Bidder will be declared as a Qualified Bidder based on meeting the eligibility criteria and as demonstrated based on documentary evidence submitted by the Bidder in the Bid.

In case of a Bidding Consortium the Financial Eligibility criteria like Annual turnover or Net worth as indicated in Clause 3.4.2, shall be fulfilled by the Lead Member or Parent Company of the Lead Member while the Technical Eligibility Criteria shall be fulfilled by consortium members. In case bidder is a consortium, a Consortium Agreement as per the **Format-10** shall be furnished along with the bid.

3.2.1 Financial Consortium is not allowed in this Bidding Process. Consortium is only permitted for Technical partnership as per **Format- 10**. Further in-case where the bidding company has used the financial eligibility criteria of its parent company then it needs to be ensured that no change in the controlling equity of the Bidding Company is done before 2 years from the date of commissioning of the sanctioned capacity requires prior approval of IPGCL.

All members of the consortium should be registered as a Company only.

However, Members of the Consortium may form the Project Company as specified in Clause 3.5. Bidder including its member of the consortium can submit one bid only

under Part B or Part C or Both.

3.2.2 Bidder can however use the technical and financial strength of its Parent Company to fulfill the Technical and/or Financial Eligibility criteria. In such case, Bidders shall submit an Undertaking from the Parent Company as per **Format - 9** and also furnish a certificate of relationship of Parent Company or Affiliate with the Bidding Company as per **Format-8**, Company Secretary certificate towards shareholding pattern of the Parent Company and the Bidding Company along with a Board resolution from the Parent Company.

3.3E-TENDER

To participate in the E-tendering process of the Delhi Government, the Vendor/Bidder should have a valid Digital Signature Certificate and has to register with Delhi E-Governance Society, through a Demand Draft of Rs.8,015/- in favour of Delhi E-Governance Society, payable at New Delhi. The following steps are to be followed by the Bidder/vendor:

3.3.1Steps to be followed before submission of Demand Draft: -

1. Enrollment of vendor by accessing below mentioned website <https://govtprocurement.delhi.gov.in> & By clicking “Online Bidder Enrollment” (just below the LOGIN Button).
2. Fill the login-id, password & personal information detail, verify and confirm the details.
3. Login through your E-mail/User-ID and newly created password (created at the time of enrollment).
4. Use your DSC (Signing Certificate)/E-token for mapping against your Login-id.
5. Upload the scanned copy of the requisite application (Kindly refer Annexure-I) on the Company’s Letter Head in PDF Format.
6. Following documents need to be brought while coming to E-procurement Help Desk for Enrolment: -
 - a. Printout of the page showing the status as “Yet to be approved” after uploading the application in the E-procurement system.
 - b. Original application on company’s Letter Head.
 - c. Demand Draft of Rs. 8,015/- in favour of Delhi E-Governance Society, payable at New Delhi.
 - d. Photocopy of applicant’s PAN Card.
7. The above documents are to be submitted at :

e-Procurement Help Desk

**6th Floor, C-Wing, Vikas Bhawan-II (Near Metcalfe House),
Civil Lines , Delhi- 100054**

(Monday-Friday: 09.30 Am to 06.00 PM), Phone : 011-23813523

3.3.2Guidelines for Bidders:

3.3.2.1Minimum Requirement

1. Computer system installed with Windows XP or higher operating system with latest service pack.

2. Antivirus s/w
3. Internet explorer 7.0 or higher
4. Mozilla Firefox 3.0 or higher
5. Java Runtime Environment(JRE) version 1.6 or above
6. PDF Reader & PDF Creator
7. Legally valid Digital Signature Certificate (DSC)
8. DSC Driver
9. Dedicated broad band Internet connection with minimum 256kbps or above
10. Scanner, Printer & UPS
11. Set the system resolution to 1024 x 768 pixels for best view

3.3.2.2 Guidelines for Bidder Enrolment

1. To participate in the E-tendering process of the Delhi Govt. the Bidder has to enrol with the portal (<https://govtprocurement.delhi.gov.in>)
2. Valid and working Email id should be used for creating login id.
3. Once the details are filled and submitted, Email id used for login id can't be changed in any circumstances.
4. Extreme precaution be taken while registering your DSC with your login id. Once DSC is mapped with one E-mail id/Login id, it can't be mapped with any other E-mail id/login id.
5. Kindly refer **Registration of Bidders** section of **Bidders Manual Kit** for clear understanding of Bidder Registration and Renewal process.
6. Please upload the correct document (as referred above).

3.3.2.3 Special Instructions to the Contractors/Bidders for the e-submission of the bids online through this eProcurement Portal (<https://govtprocurement.delhi.gov.in/nicgep/app>):

1. Bidder should do Online Enrolment in this Portal using the option Click Here to Enroll available in the Home Page. Then the Digital Signature enrollment has to be done with the e-token, after logging into the portal. The e-token may be obtained from one of the authorized Certifying Authorities such as eMudhraCA/ GNFC/ IDRBT/ MtnlTrustline/ SafeScript/ TCS.
2. Bidder then logs into the portal giving user id / password chosen during enrollment.
3. The e-token that is registered should be used by the bidder and should not be misused by others.
4. DSC once mapped to an account cannot be remapped to any other account. It can only be Inactivated.
5. The Bidders can update well in advance, the documents such as certificates, purchase order details etc., under My Documents option and these can be selected as per tender requirements and then attached along with bid documents during bid submission. This will ensure lesser upload of bid documents.
6. After downloading / getting the tender schedules, the Bidder should go through them carefully and then submit the documents as per the tender document, otherwise, the bid will be rejected.

7. The BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for that tender. Bidders are allowed to enter the Bidder Name and Values only.
8. If there are any clarifications, this may be obtained online through the eProcurement Portal, or through the contact details given in the tender document. Bidder should take into account of the corrigendum published before submitting the bids online.
9. Bidder, in advance, should prepare the bid documents to be submitted as indicated in the tender schedule and they should be in PDF/XLS/RAR/DWF formats. If there is more than one document, they can be clubbed together.
10. Bidder should arrange for the BID BOND and Tender Processing Fee as specified in the tender. The original should be posted/couriered/given in person to the Tender Inviting Authority, within the bid submission date and time for the tender.
11. The bidder reads the terms and conditions and accepts the same to proceed further to submit the bids
12. The bidder has to submit the tender document(s) online well in advance before the prescribed time to avoid any delay or problem during the bid submission process.
13. There is no limit on the size of the file uploaded at the server end. However, the upload is decided on the Memory available at the Client System as well as the Network bandwidth available at the client side at that point of time. In order to reduce the file size, bidders are suggested to scan the documents in 75-100 DPI so that the clarity is maintained and also the size of file also gets reduced. This will help in quick uploading even at very low bandwidth speeds.
14. It is important to note that, the bidder has to Click on the Freeze Bid Button, to ensure that he/she completes the Bid Submission Process. Bids Which are not Frozen are considered as Incomplete/Invalid bids and are not considered for evaluation purposes.
15. In case of Offline payments, the details of the BID BOND and Tender Processing Fee document submitted physically to the Department and the scanned copies furnished at the time of bid submission online should be the same otherwise the Tender will be summarily rejected
16. The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders due to local issues.
17. The bidder may submit the bid documents online mode only, through this portal. Offline documents will not be handled through this system.
18. At the time of freezing the bid, the eProcurement system will give a successful bid updation message after uploading all the bid documents submitted and then a bid summary will be shown with the bid no, date & time of submission of the bid with all other relevant details. The documents submitted by the bidders will be digitally signed using the e-token of the bidder and then

submitted.

19. After the bid submission, the bid summary has to be printed and kept as an acknowledgement as a token of the submission of the bid. The bid summary will act as a proof of bid submission for a tender floated and will also act as an entry point to participate in the bid opening event.
20. Successful bid submission from the system means, the bids as uploaded by the bidder is received and stored in the system. System does not certify for its correctness.
21. The bidder should see that the bid documents submitted should be free from virus and if the documents could not be opened, due to virus, during tender opening, the bid is liable to be rejected
22. The time that is displayed from the server clock at the top of the tender Portal, will be valid for all actions of requesting bid submission, bid opening etc., in the e-Procurement portal. The Time followed in this portal is as per Indian Standard Time (IST) which is GMT+5:30. The bidders should adhere to this time during bid submission.
23. All the data being entered by the bidders would be encrypted at the client end, and the software uses PKI encryption techniques to ensure the secrecy of the data. The data entered will not be viewable by unauthorized persons during bid submission and not viewable by any one until the time of bid opening. Overall, the submitted bid documents become readable only after the tender opening by the authorized individual.
24. During transmission of bid document, the confidentiality of the bids is maintained since the data is transferred over secured Socket Layer(SSL) with 256 bit encryption technology. Data encryption of sensitive fields is also done.
25. The bidders are requested to submit the bids through online eProcurement system to the TIA well before the bid submission end date and time (as per Server System Clock).

3.4 ELIGIBILITY CRITERIA

3.4.1 For Part A & Part B: Eligibility conditions for Companies under Part A & Part B are as listed below:

- All MSMEs registered with agencies / bodies specified by Ministry of MSME as per clause 3.35.9 are eligible to participate under Part A & B category of the Tender.
- As per MNRE Order regarding 'Operational Guidelines for Channel Partners/ New Entrepreneurs' (File No. 5/22/2013-14/RT dated 18.09.2015), new entrepreneurs/ Chanel Partners registered with MNRE shall be eligible to participate in this tender
- It should not be blacklisted from Ministry of Corporate Affair or any other Government bodies/PSUs etc
- It should have valid PAN / Sales Tax Registration Numbers under VAT/Sales Tax rules (PAN/TAN) or as per statutory requirement.

NB: If the bidder's submitted information is found to be false declaration or misrepresentation, the bidder(s) shall be out rightly rejected or debarred or blacklisted

from IPGCL future tenders.

A scanned copy of certificate of incorporation shall be furnished in the bid (through online mode)

3.4.2 For PART C, PART D & Part E:

GENERAL CONDITION:

The Bidder should be either a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto and engaged in the business of Solar Power.

A scanned copy of certificate of incorporation shall be furnished in the bid (through online mode) in support of above.

TECHNICAL ELIGIBILITY CRITERIA:

The Bidder should have installed & commissioned Grid connected Solar PV Power Projects having minimum cumulative capacity of 800 kWp for Part C,D & E in last three years, of which at least one aggregated location should be of 25 KWp or above and in operation for at least one year as on Bid Opening date.

The list of project commissioned at least 6 months prior to Techno-Commercial Bid Opening date, indicating whether the project is grid connected, along with a scanned copy of the Commissioning certificate and Work order / Contract / Agreement/ from the Client/Owner shall be submitted (online).

FINANCIAL ELIGIBILITY CRITERIA:

(a) The Bidder should have an Annual Turnover or Net worth as indicated below.

- i. The Annual turnover of Rupees 5.0 Crore per MW of the capacity offered in its Bid in any one of the last 3 financial years preceding the Bid Deadline subjected to the condition that the Bidder should at least have completed one financial year.

OR

- ii. Net worth equal to or greater than the value calculated at rate of Rs. 3.00 Crore per MW of capacity offered by the Bidder in its Bid. The Computation of Net worth shall be based on unconsolidated audited annual accounts of the last financial year immediately preceding the Bid Deadline. Share premium can be included in the Net-worth calculation in case of listed companies in India only.

In case of more than one Price Bid submitted by the Bidder, the financial eligibility criteria must be fulfilled by such Bidder for the sum total of the capacities being offered by it in its Price Bid.

The formula of calculation of net-worth shall be as follows:

Net-worth = (Paid up share capital) + {(Free reserves – Share premium) + Share

premium of listed companies); - (Revaluation of reserves)-(Intangible assets) - (Miscellaneous expenditure to the extent not written off and carry forward losses).

For the purposes of meeting financial requirements, only unconsolidated audited annual accounts shall be used. However, audited consolidated annual accounts of the Bidder may be used for the purpose of financial requirements provided the Bidder has at least twenty six percent (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.

Bidders shall furnish documentary evidence as per the **Format -7**(online as well as offline), duly certified by Authorized Signatory and the Statutory Auditor / Practicing Chartered Accountant of the Bidding Company in support of their financial capability.

5.4 INCORPORATION OF A PROJECT COMPANY

3.5.1 In case the Bidder wishes to incorporate a Project Company, in such a case Bidder if selected as Empanelment can incorporate a Project Company. Bidder shall be responsible to get all clearance required/ obtained in the name of the Bidding Company transferred in the name of the Project Company.

3.5.2 The aggregate equity share holding of the Empanelled vendor in the issued and paid up equity share capital of the Project Company shall not be less than fifty-one percent (51%) up to a period of Five (5) years from the date of commissioning of the entire Sanctioned Capacity of the Project Developer.

3.6 BID SUBMISSION BY THE BIDDER

3.6.1 The information and/or documents shall be submitted by the Bidder as per the formats specified in **Section-IV & Section - V** of this document.

3.6.2 Strict adherence to the formats wherever specified, is required. Wherever, information has been sought in specified formats, the Bidder shall refrain from referring to brochures / pamphlets. Non-adherence to formats and / or submission of incomplete information may be a ground for declaring the Bid as non-responsive. Each format has to be duly signed and stamped by the authorized signatory of the Bidder then scanned and uploaded in the Techno- Commercial Bid Part.

3.6.3 The Bidder shall furnish documentary evidence in support of meeting Eligibility Criteria as indicated in Clauses to the satisfaction of IPGCL. Under PART-B, Part-C, Part D and PART-E Bidder shall also furnish unconsolidated/ consolidated audited annual accounts in support of meeting financial requirement, which shall consist of unabridged balance sheet, profit and loss account, profit appropriation account, auditors report, etc., as the case may be of Bidding Company or Financially Evaluated Entity for any of the last three (3) financial years immediately preceding the Bid Deadline which are used by the bidder for the purpose of calculation of Annual Turnover or of last Financial Year in case of Net Worth.

3.6.4 In case the annual accounts for the latest financial year are not audited and therefore the bidder cannot make it available, the applicant shall give certificate to this

effect from the Statutory Auditor and Authorized signatory. In such a case, the Applicant shall provide the Audited Annual Reports for 3 (three) years preceding the year; or from the date of incorporation if less than 3 years; for which the Audited Annual Report is not being provided.

Offline submission of documents

In addition to the above, the bidders are required to submit the following documents physically offline also in a Sealed Envelope, failing which the technical bids will not be opened.

1. Original copy of the Bid Bond in the form of a Bank Guarantee & tender processing fee in form of demand draft in favour of IPGCL payable at New Delhi
2. Original Power-of-Attorney supplemented with Board resolutions for Part C, D & E and Declaration for Part A.
3. DD/ Bankers cheque for an amount as per clause no 3.10.1.1. (A), drawn in favour of I.P.G.C.L. payable at New Delhi against payment of tender processing fee.
4. Original copy of the Consortium Agreement, If any (Part C, D & E).
5. The Pass-Phrase to decrypt the relevant Bid-Part in a sealed envelope before the start date and time of the Tender Opening Event (TOE).

The sealed envelope addressed to The GM (C&M), 1st floor 220 Kv Sub Station Building, Pragati Power Station, I.P. Estate, Ring Road, New Delhi-110 002 superscribed with following:

1. IPGCL/ RFS – EOI - 1/ CAPEX & RESCO / 04/ 2016.
2. Offer for installation of Solar Power Plant under “Grid Connected Rooftop Solar Power Plant Scheme” under EOI for Empanelment of Vendors.
3. Validity of the offer: 12 months from the date of techno-commercial bid opening
4. Name and address of the firm.
5. Bid Bond and Bid Processing Fee details.

Note: Bidder should also upload the scanned copies of all the above mentioned original documents as Bid-Annexure during Online Bid-Submission

3.7 BID SUBMITTED BY A BIDDING COMPANY

The Bidding Company should designate one person to represent the Bidding Company in its dealings with IPGCL. The person should be authorized to perform all tasks including, but not limited to providing information, responding to enquires, signing of Bid etc. The Bidding Company should submit, along with Bid, a Power of Attorney in original (as per **Format-6**), authorizing the signatory of the Bid.

3.8 CLARIFICATIONS AND PRE-BID MEETING

- 3.8.1 The IPGCL will not enter into any correspondence with the Bidders, except to furnish clarifications on RFS Documents, if necessary. The Bidders may seek clarifications or suggest amendments to RFS online, also soft copy by e-mail to reach IPGCL at the address, date and time mentioned in Bid information sheet.
- 3.8.2 The Bidder(s) or their authorized representative(s) is /are invited to attend pre- bid meeting(s), which will take place on date(s) as specified in Bid information sheet, or any such other date as notified by IPGCL.
- 3.8.3 The purpose of the pre-bid meeting will be to clarify any issues regarding the RFS including in particular, issues raised in writing and submitted by the Bidders.
- 3.9** IPGCL is not under any obligation to entertain/ respond to suggestions made or to incorporate modifications sought for.

3.10 AMENDMENTS TO RFS BY IPGCL

- 3.10.1 At any time prior to the deadline for submission of Bids, IPGCL may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the RFS document by issuing clarification(s) and/or amendment(s).
- 3.10.2 The clarification(s)/ amendment(s) (if any) may be notified on IPGCL website www.ipgcl-ppcl.gov.in/ E-tender Portal of Delhi Government (<https://govtprocurement.delhi.gov.in/nicgep/app>) at least Two (2) days before the proposed date of submission of the Bid. If any amendment is required to be notified within Two (2) days of the proposed date of submission of the Bid, the Bid Deadline may be extended for a suitable period of time.
- 3.10.3 IPGCL will not bear any responsibility or liability arising out of non-receipt of the information regarding Amendments in time or otherwise. Bidders must check the website for any such amendment before submitting their Bid.
- 3.10.4 In case any amendment is notified after submission of the Bid (prior to the opening of Techno-Commercial Bid due date /time shall be extended and it will be for the Bidders to submit fresh Bids/supplementary bids as the date notified by the IPGCL for the purpose.
- 3.10.5 All the notices related to this Bid which are required to be publicized shall be uploaded on www.ipgcl-ppcl.gov.in/ E-tender Portal of Delhi Government (<https://govtprocurement.delhi.gov.in/nicgep/app>).

3.11 BIDDING PROCESS

3.11.1 BID FORMATS

- 3.11.1.1 The Bid in response to this RFS shall be submitted by the Bidders in the manner provided in Clause 3.6 & Clause 3.10.1.1 of Section - I. The Bid shall comprise of the following:

**(A) ENVELOPE-I (COVERING LETTER, BID PROCESSING FEE AND BID BONDS etc)
(TO BE SUBMITTED OFF-LINE AND ONLINE BOTH)**

- i) Covering Letter as per prescribed **Format-1**.
- ii) For Part-A & B: Bid processing fee @ Rs.5,000/- + service tax,
For Part-C, D & E: Bid processing fee @ Rs.15,000/- + service tax shall be calculated in the manner as illustrated below:

For example No-1: If Bidder is quoting for Part-B or Part-D, then bidder shall furnish Processing fee of Rs.15,000/- plus service tax.

For example No-2: If Bidder is quoting for PART-B & Part-D, then bidder shall furnish Processing fee of Rs.30,000/- plus service tax.
- iii) Bid Bond, as per the prescribed **Format-3** shall be submitted separately for Part-A, B, C, D or E for the tendered capacity in a separate envelope as per Clause 3.14.
- iv) Checklist for Bank Guarantee submission requirements as prescribed in **Format- 5**.
- v) Original power of attorney issued by the Bidding Company in favour of the authorized person signing the Bid, in the form attached hereto as **Format-6** or standard power of attorney in favour of authorized person signing the Bid. (Power of Attorney must be supplemented by Board Resolution to above effect for the company incorporated under Company Act 1956 or Company Act-2013). However, Employer may accept general Power of Attorney executed in favour of Authorized signatory of the Bidder, if it shall conclusively establish that the signatory has been authorized by the Board of Directors to execute all documents on behalf of the Bidding Company. In case, Part A & B an undertaking/declaration for authorization of a person for signing the Bid or self-declaration shall be sufficient as per format given in Annexure H.
- vi) Original copy of the Consortium Agreement, If any (Part C,D &E))
- vii) The Pass-Phrase to decrypt the relevant Bid-Part in a sealed envelope before the start date and time of the Tender Opening Event (TOE).

The Bidder should also upload the scanned copies of all the above mentioned original documents as Bid - Annexure during Online Bid-Submission.

(B) ENVELOP – II TECHNO - COMMERCIAL DOCUMENTS (TO BE SUBMITTED ONLINE ONLY)

- i) Covering Letter as per prescribed **Format-1**.
- ii) Certificate of Incorporation of Bidding Company/ Bidding consortium/ parent company as applicable.
- iii) General particulars of bidders as per **Format-2**.
- iv) Bidder's composition and ownership structure as per prescribed **Format-A** as Shareholding certificate certified by Director/practicing Chartered Accountant / Company Secretary and Authorized signatory of the company for Part C,D & E.
- v) Document in support of meeting Eligibility Criteria as per Clause no. 3.4.
- vi) Details for meeting Financial Eligibility Criteria as per Clause no. 3.4 for Part C, D & E.

- vii) Undertakings from the Financially Evaluated Entity or its Parent Company /Ultimate Parent Company as per **Format-9**, if applicable.
- viii) **Format 8**, if applicable, supported by Board Resolution of the Parent Company /Ultimate Parent Company of the Bidding Company duly certified by the Company Secretary or Authorized signatory to provide the Performance Bank Guarantee (PBG) in the event of failure of the Bidding Company to do so.
- ix) Signed and stamped Copy of RFS Documents including amendments & clarifications by Authorized signatory on each page.

N.B: Covering letter shall be submitted online and offline both.

(C) ENVELOPE III- PRICE BID(S) AS PER SECTION-IV (To be submitted online only)

The Bidder shall inter-alia take into account the following while preparing and submitting the Price Bid duly signed by an authorized signatory.

- i.) The Bidder shall submit sealed Price Bid for PART-A, PART-B, PART-C, PART-D & PART-E separately in the Format B/ Format C/ Format D /Format E / Format F only (as applicable). Each envelope shall be superscribed as “Price Bid for MWp capacity for Part- A/Part-B/Part C / Part D / Part E (Strike out whichever not applicable). All the Price Bids shall be put in Envelope-III.
- ii.) Only online price bids shall be considered.

3.12 BID DUE DATE

The Bidder should submit the Bids so as to reach the address indicated below by 1130 hrs (IST) on or before, 2016.

**GM (C&M),
1st floor 220 Kv Sub Station Building,
Pragati Power Station, I.P. Estate,
Ring Road, New Delhi-110 002**

3.13 VALIDITY OF BID

3.13.1 The bid and the Price Schedule included shall remain valid for a period of 12 months from the date of techno-commercial bid opening, with bidder having no right to withdraw, revoke or cancel his offer or unilaterally vary the offer submitted or any terms thereof. In case of the bidder revoking or cancelling his offer or varying any term & conditions in regard thereof or not accepting letter of allocation, IPGCL shall forfeit the Bid Bond furnished by him. Confirmation regarding the Bid offer validity shall be clearly mentioned in the covering letter.

3.13.2 In exceptional circumstances when letter of allocation is not issued, the IPGCL may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. The Bid Bond provided under Clause 3.14 shall also be suitably extended. A Bidder may refuse the request without forfeiting its Bid Bond. A Bidder granting the request will neither be required nor permitted to modify its Bid in any manner.

3.13.3 METHOD OF BID SUBMISSION

- 3.13.3.1 Bids are required to be submitted online and offline mode. The offline documents are to be submitted in a single sealed cover envelope namely Envelope-I containing (Covering letter, Bid Processing fee and Bid Bonds etc. as referred under clause 3.10.1.1.A above). It should be duly sealed and signed.
- 3.13.3.2 Outermost envelope should be superscribed as “Offline Documents for EOI – Empanelment of vendors for Implementation of Grid connected Roof Top Solar PV System” Envelope-I (Covering envelope) along with the “BID DUE DATE”.
- 3.13.3.3 The Bidders have the option of sending their Offline Documents either by registered post; or speed post; or courier; or by hand delivery, so as to reach IPGCL by the Bid Deadline. Documents submitted by telex/telegram/fax/e-mail shall not be considered under any circumstances. IPGCL shall not be responsible for any delay in receipt of the Bid. Any Bid received after the Bid Deadline shall be returned unopened. It should be noted that Offline Document envelope shall not contain any information/document relating to Price Bid. IPGCL shall not be responsible for premature opening of the Price Bids in case of non-compliance of above.
- 3.13.3.4 All pages of the offline documents, except for the Bid Bond, and any other document executed on non-judicial stamp paper, forming part of the Bid and corrections in the Bid, if any, must be signed by the authorized signatory on behalf of the Bidder. It is clarified that the same authorized signatory shall digitally sign all pages of the Bid. However, any published document submitted with the Bid shall be signed by the authorized signatory at least on the first and last page of such document Bidders shall submit the Bid in original, duly signed by the authorized signatory of the Bidder. No change or supplemental information to a Bid will be accepted after the Bid Deadline, unless the same is requested for by IPGCL.
- 3.13.3.5 If the outer cover envelope or Envelope I (Covering Envelope) is not enclosed and not super scribed as per the specified requirement, IPGCL will assume no responsibility for the Bid’s misplacement or premature opening.
- 3.13.3.6 The envelope shall be sealed properly & shall indicate the Name & address of the Bidder. The Bid must be complete in all technical and commercial respect and should contain requisite certificates, drawings, informative literature etc. as required in the Bid document. Each page of the Bid document should be signed & stamped. Bids with any type of change or modification in any of the terms/ conditions of this document shall be rejected. If necessary, additional papers may be attached by the Bidder to furnish/ submit the required information. Any term / condition proposed by the Bidder in his bid which is not in accordance with the terms and conditions of the RFS document or any financial conditions, payment terms, rebates etc. mentioned in Price Bid shall be considered as a conditional Bid and will make the Bid invalid.

3.14 COST OF BIDDING

- 3.14.1 The bidder shall bear all the costs associated with the preparation and submission of his offer, and the company will in no case be responsible or liable for

those costs, under any conditions. The Bidder shall not be entitled to claim any costs, charges and expenses of and incidental to or incurred by him through or in connection with submission of bid even though IPGCL may elect to modify / withdraw the invitation of Bid.

3.15 BID BOND (To be submitted in original form offline only, Scan copy shall also be uploaded.)

The Bidder shall furnish Interest free Bid Bond in the form of Bank Guarantee (BG) / Demand Draft drawn in favour of “Indraprastha Power Generation Co. Ltd.”, payable at New Delhi. The validity of Bid Bond shall be for a period of 12 months + 3 months claim period from the Bid Deadline. Bid bond shall be submitted separately for PART-A, PART-B, PART-C, Part-D, Part-E respectively. The Bid Bond of unsuccessful bidders shall be returned within 30 days from the date of issue of Letter of Allocation(s) on bidder’s request. Bid bond(s) of Empanelled Vendor shall be released after the receipt of PBG in the format prescribed by IPGCL and after the receipt of confirmation of their PBG’s from their respective banker.

The formula applicable to calculate the Bid Bond amount under PART-A / PART-B / PART-C/Part-D/Part-E will be:

Bid Bond amount = (Rs.15 Lakhs) X Bid Capacity in MWp

3.15.1 The Bid Bond shall be denominated in Indian Rupees and shall:

- i. at the Bidder’s option, be in the form of either a demand draft, FDR or a bank guarantee from a List of banks as given in **Annexure-B**.
- ii. be confirmed for payment by the branch of the bank giving the bank guarantee at New Delhi.
- iii. be submitted in its original form; copies will not be accepted; and remain valid for a minimum period of 12 months + 3 months claim period from the date of Techno Commercial bid opening, or beyond any period of extension subsequently requested under Clause 3.12.2.

3.15.2 Empanelled Vendors shall sign and stamp the Letter of allocation and return the signed & stamped duplicate copy of the same to IPGCL within 30 days from the date of its issue.

3.15.3 The Bid Bond shall be forfeited without prejudice to the Bidder being liable for any further consequential loss or damage incurred to IPGCL under following circumstances:

- a. Hundred percent (100%) of Bid Bond amount of the proposed capacity, if a Bidder withdraws/revokes or cancels or unilaterally varies his bid in any manner during the period of Bid Validity specified in the RFS document and in accordance with the Clause 3.12.2 of Section-I.

- b. Hundred percent (100%) of Bid Bond amount of the proposed capacity, if the Empanelled Vendor fails to unconditionally accept the Allocation letter within 30 days from the date of its issue.
- c. Hundred percent (100%) of Bid Bond amount of the proposed capacity, if the Empanelled Vendor fails to furnish the “Performance Security” after 60 days.

3.16 PERFORMANCE SECURITY/PERFORMANCE BANK GUARANTEE (PBG)

3.16.1 In case of PART-A, Part B, Part-C , Part D and Part E Separately:

Within 30 days from the date of issue of Allocation letter, Empanelled Vendor shall furnish the Performance Security for the allocated capacity only.

The formula applicable to calculate the PBG amount will be:

PBG amount = (10% of subsidy on project cost per MW limited to Rs.22.5 Lakh) X Allocated Capacity in MWp for PART-A& B

PBG amount = (10% of subsidy on project cost per MW limited to Rs.21.3 Lakh) X Allocated Capacity in MWp for PART-C, D, E

3.16.2 Further, any delay beyond 30 days shall attract interest @ 1.25 % per month on the total amount, calculated on day to day basis. IPGCL at its sole discretion may cancel the allocated capacity and forfeit 100% of Bid bond, in case Performance security is not submitted within 60 days of issue of Allocation Letter as per Clause 3.14.3(c). However, total project completion period shall remain same. Part PBG shall not be accepted.

3.16.3 The Performance Security shall be denominated in Indian Rupees and shall be in one of the following forms:

- a. Demand draft, FDR or bank guarantee from the List of banks as given in **Annexure-B.**
- b. be confirmed for payment by the branch of the bank giving the bank guarantee at New Delhi.

3.16.4 The PBG shall be forfeited as follows without prejudice to the Bidder being liable for any further consequential loss or damage incurred to IPGCL.

- a. If the Empanelled Vendor is not able to identify the projects and submit Project Sanction Documents to the satisfaction of IPGCL, PBG amount, pro- rata to the capacity for which the Empanelled Vendor is not able to identify the Projects and submit Project Sanction Documents.
- b. If the Empanelled Vendor is not able to commission the projects to the satisfaction of IPGCL, PBG amount, pro-rata to the capacity not commissioned by the Empanelled Vendor. However, Hundred percent (100%) PBG amount furnished for the Sanctioned Capacity, if the Empanelled Vendor fails to Commission the Projects(s) to the satisfaction of IPGCL, for the already identified

locations, which are notified by IPGCL in the RFS or otherwise and for which Allocation letter/Sanction letter has been issued.

- c. In all the above cases corresponding unidentified/non-commissioned capacity shall stand cancelled.

3.16.5 The Performance Security shall be valid for a minimum period of 5 years + 3 months claim period from the date of issue of allocation letter (s) and shall be renewed/ extended till the completion of 5 years of O&M period. The Performance security shall be released after 5 years from the date of commissioning with the compliance of entire obligations in the contract.

NB: In case the Empanelled Vendor is not able to furnish the PBG for 5 year of validity. Then PBG with initial validity period of 2 year may also be accepted by IPGCL provided the Empanelled Vendor shall renew/extend the BG, 30 days before the expiry of the same. If the Empanelled Vendor does not extend the PBG, the same shall be forfeited by IPGCL.

3.16.6 For Part 'D & E' if at any point of time, the generation from the plant is less than the contracted generation during the period of contract then the vendor/ developer (SPD) will pay to the consumer as amount equal to difference between the consumer tariff and solar tariff multiplied by the number of units less generated.

3.17 OPENING OF BIDS

3.16.1 Offline Document Envelope, of the Bidders shall be opened at 11:30 hours on Bid Deadline date at the venue indicated herein above, in the presence of one representative from each of the Bidders who wish to be present.

The bidders are required to submit the offline documents in a Sealed Envelope as per clause 3.10.1.1.A above, failing which the Technical bids will not be opened.

3.16.2 Name of the Bidder and capacity offered for in Part-A, Part B, Part-C , part D and part E shall be read out to all the Bidders at the time of opening of Envelope-I.

3.18 RIGHT TO WITHDRAW THE RFS AND TO REJECT ANY BID

3.18.1 This RFS may be withdrawn or cancelled by the IPGCL at any time without assigning any reasons thereof. The IPGCL further reserves the right, at its complete discretion, to reject any or all of the Bids without assigning any reasons whatsoever and without incurring any liability on any account.

3.18.1.1 The IPGCL reserve the right to interpret the Bid submitted by the Bidder in accordance with the provisions of the RFS and make its own judgment regarding the interpretation of the same. In this regard the IPGCL shall have no liability towards any Bidder and no Bidder shall have any recourse to the IPGCL with respect to the selection process. IPGCL shall evaluate the Bids using the evaluation process specified in Section -I, at its sole discretion. IPGCL decision in this regard shall be final and binding on the Bidders.

3.18.1.2 IPGCL reserves its right to vary, modify, revise, amend or change any of the terms

and conditions of the Bid before submission. The decision regarding acceptance of bid by IPGCL will be full and final.

3.19 ZERO DEVIATION

3.19.1 This is a ZERO Deviation Bidding Process. Bidder is to ensure compliance of all provisions of the Bid Document and submit their Bid accordingly. Tenders with any deviation to the bid conditions shall be liable for rejection.

3.20 EXAMINATION OF BID DOCUMENT

3.20.1 The Bidder is required to carefully examine the Technical Specification, terms and Conditions of Contract, and other details relating to supplies as given in the Bid Document.

3.20.2 The Bidder shall be deemed to have examined the bid document including the agreement/ contract, to have obtained information on all matters whatsoever that might affect to execute the project activity and to have satisfied himself as to the adequacy of his bid. The bidder shall be deemed to have known the scope, nature and magnitude of the supplies and the requirements of material and labour involved etc. and as to all supplies he has to complete in accordance with the Bid document.

3.20.3 Bidder is advised to submit the bid on the basis of conditions stipulated in the Bid Document. Bidder's standard terms and conditions if any will not be considered. The cancellation / alteration / amendment / modification in Bid documents shall not be accepted by IPGCL.

3.20.4 Bid not submitted as per the instructions to bidders is liable to be rejected. Bid shall confirm in all respects with requirements and conditions referred in this bid document.

GENERAL CONDITIONS OF CONTRACT (GCC)

3.21 SCOPE OF WORK

3.21.1 The Scope of work for the bidder include Identification of buildings/ leasing rooftop of buildings for 25 years, Obtaining No Objection Certificate (NOC)” from Distribution Company (DISCOM) for grid connectivity, complete design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of the grid connected rooftop solar PV project including operation and maintenance (O&M) of the project for a period of 5 years for PART-A ,B & C and O&M of the project for a period of 25 years for PART-D & E after commissioning of the projects as per IPGCL’s acceptance.

3.22 PROJECT COST/ LEVELISED / ESCALATION BASED TARIFF

3.22.1 The Project cost/ (Fixed Tariff / **Escalation Based Tariff** of 25 years) shall include all the costs related to above 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 of 5 years for CAPEX & 25 years for RESCO), 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.

3.22.2 The Project cost/Fixed tariff / **Escalation Based Tariff** quoted for PART-A/PART-B/ PART- C/ PART-D/Part E is on lump sum turnkey basis and the bidder is responsible for the total Scope of work described at Clause 3.20.1 above.

3.22.3 The Project cost/Levelised tariff / **Escalation Based Tariff** shall remain firm and fixed and shall be binding on the Successful Bidder till completion of work for payment of subsidy amount irrespective of his actual cost of execution of the project. No escalation will be granted on any reason whatsoever. The bidder shall not be entitled to claim any additional charges, even though it may be necessary to extend the completion period for any reasons whatsoever.

3.22.4 The Project cost/Fixed tariff / **Escalation Based Tariff** shall be inclusive of all duties and taxes, insurance etc. The prices quoted by the firm shall be complete in all respect and no price variation /adjustment shall be payable by IPGCL. However, statutory variation of taxes and duties may be paid by the roof top owner.

3.22.5 Operation & Maintenance of Solar PV Power Plant would include wear, tear, overhauling, machine breakdown, insurance, and replacement of defective modules,

invertors / Power Conditioning Unit (PCU) spares, consumables & other parts for a period of 5 years for PART-A, B, C projects and for 25 years for PART-D & E projects.

3.22.6 The Project cost/Fixed tariff / **Escalation Based Tariff** for PART-A, B, C/PART-D or E shall be specified in sanction letter based on Empanelled Vendor's quote for each project. The project cost/Levelised tariff shall be in accordance with all terms, conditions, specifications and other conditions of the Contract as accepted by the IPGCL and incorporated into the sanction letter.

3.22.7 The Bidder shall complete the Price Bid **Format-B/Format-C/Format-D/ Format-E/ Format-F** (Section-IV) furnished in the RFS Documents.

3.23 IPGCL SERVICE CHARGES

3.23.1 For PART-A, PART-B, PART-C , PART-D & Part E

- i. For PART-A, PART-B: service charges of IPGCL shall be computed as 5% of 70% of the Quoted Project Cost or Rs75/WP whichever is lower.
 - ii. For PART-C: service charges of IPGCL shall be computed as 5% of 70% of the Quoted Project Cost or Rs71/WP whichever is lower.
 - iii. For PART-D & E: service charges of IPGCL shall be computed as 5% of 70% of the Quoted Project Cost or Rs71/WP whichever is lower.
- The above charges are exclusive of Service Tax which shall be paid extra as per applicable norms.

3.23.2 IPGCL service charges are charged for site visits, inspection; liaison, monitoring etc. Taxes and duties shall be paid extra. The IPGCL service charges are non- refundable and for each project the service charges have to be paid at the time of submission of Project Sanction Documents. In the absence of IPGCL's service charges as per clause 3.22.1, the project sanction documents shall not be acceptable to IPGCL.

Further, any delay upto 30 days shall attract interest @ 1.25% per month of the amount not paid, calculated on day to day basis till the full payment including interest is paid.

However, IPGCL has the right to recover / adjust any unpaid IPGCL service charges including interest from the 1st installment of subsidy due to the Empanelled Vendor. IPGCL at its sole discretion may cancel the Sanctioned capacity and forfeit 100% of Performance Security in case IPGCL service charges are not paid within 30 days of issue of Sanction Letter.

The IPGCL Bank details are as under.

The service tax no of IPGCL	: AABCI0243HST001
CST/TAN No.	: DELI03600C
Account No.	: 10021675045
MICR No.	: 110002103
IFSC Code	: SBIN0004281

Name of Bank : SBI, Rajghat Power House Branch.
PAN No. – AABCI0243H

3.24 INSURANCE

3.24.1 The Empanelled Vendor shall be responsible and take an Insurance Policy for transit-cum- storage-cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site, erection, testing and commissioning. The bidder shall also take appropriate insurance during O&M period, if required.

3.24.2 The Empanelled Vendor shall also take insurance for Third Party Liability covering loss of human life, engineers and workmen and also covering the risks of damage to the third party/material/equipment/properties during execution of the Contract. Before commencement of the work, the Empanelled Vendor will ensure that all its employees and representatives are covered by suitable insurance against any damage, loss, injury or death arising out of the execution of the work or in carrying out the Contract. Liquidation, Death, Bankruptcy etc., shall be the responsibility of bidder.

3.24.3 WARRANTIES AND GUARANTEES

The Empanelled Vendor shall warrant that the goods supplied under this contract are new, unused, of the most recent or latest technology and incorporate all recent improvements in design and materials. The Empanelled Vendor shall provide warrantee covering the rectification of any and all defects in the design of equipment, materials and workmanship including spare parts for a period of 5 years from the date of commissioning for PART-A/PART-B/PART-C projects and for 25 years for PART-D/ or E projects. The Empanelled Vendor has to transfer all the Guarantees/ Warrantees of the different components to the Owner of the project. The responsibility of operation of Warrantee and Guarantee clauses and Claims/ Settlement of issues arising out of said clauses shall be joint responsibility of the Empanelled Vendor and the owner of the project and IPGCL will not be responsible in any way for any claims whatsoever on account of the above.

3.25 TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP

3.25.1 The design, engineering, manufacture, supply, installation, testing and performance of the equipment shall be in accordance with latest appropriate IEC/ Indian Standards as detailed in the Section- III (Technical specifications) of the bid document. Where appropriate Indian Standards and Codes are not available, other suitable standards and codes as approved by the MNRE shall be used.

3.25.2 The specifications of the components should meet the technical specifications mentioned in Section III.

3.25.3 Any supplies which have not been specifically mentioned in this Contract but which are necessary for the design, engineering, manufacture, supply & performance or completeness of the project shall be provided by the Bidder without any extra cost and within the time schedule for efficient and smooth operation and maintenance of the SPV plant.

3.26 OPERATION & MAINTENANCE (O&M) GUIDELINES TO BE MANDATORILY FOLLOWED BY BIDDERS.

3.26.1 The bidder shall be responsible for all the required activities for successful operation and maintenance of the Rooftop Solar PV system for a period of 5 years for projects under PART-A , B & C & for a period of 25 years under PART-D & E from the date of commissioning of the plant.

3.26.2 For system sizes above 25 kWp, below mentioned guidelines, shall be followed. In addition, O&M practices shall be strictly followed as per **Annexure D**. For projects upto 25 kWp, the O&M guidelines to be mandatorily followed by bidders shall be as per **Annexure E**.

3.26.2.1 O&M of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.

3.26.2.2 Deputation of qualified and experienced engineer/ technicians till the O&M period at project site.

3.26.2.3 Fortnightly cleaning of solar modules.

3.26.2.4 Quarterly checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.

3.26.2.5 Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required.

3.26.2.6 Supply of all spares, consumables and fixtures as required. Such stock shall be maintained for all associated equipments and materials as per manufacturer/ supplier's recommendations.

3.26.2.7 All the equipment testing instrument required for Testing, Commissioning and O&M for the healthy operation of the Plant shall be maintained by the Bidder. The testing equipments must be calibrated once every 2 years from NABL accredited labs and the certificate of calibration must be kept for reference as required.

3.26.2.8 If negligence/ mal-operation on part of the Bidder's operator results in failure of equipment, such equipment should be repaired/ replaced by the Bidder free of cost.

3.26.2.9 Co-ordination with Owner / DISCOM / CEIG as per the requirement for Joint Metering Report (JMR). The person in charge present at site from bidder's side shall take a joint meter reading in the presence of rooftop owner as per billing cycle. Furnishing generation data (JMR) each month to IPGCL positively by 1st week of every month for the previous month. Failure to adhere may result in non-disbursal of subsidy.

3.26.2.10 Online Performance Monitoring, controlling, troubleshooting, maintaining of logs &

records. A maintenance record register is to be maintained by the operator with effect from Commissioning to record the daily generation, regular maintenance work carried out as well as any preventive and breakdown maintenance along with the date of maintenance, reasons for the breakdown, duration of the breakdown, steps taken to attend the breakdown, etc.

- 3.26.2.11 For any issues related to operation & maintenance, a toll-free number shall be made available to the rooftop owner/ plant owner to resolve within 72 hours. If not attended within such stipulated time, a complaint may be raised to IPGCL, pursuant to which, a penalty of Rs. 10,000 for full month or more shall be imposed for a system capacity above 100 kWp. Repetition of such instances for more than 2 times a year may lead to the stop the next tranche of subsidy by the IPGCL. This will be applicable till 5 years of O&M as per the Scope of the RfS.
- 3.26.2.12 If any jobs covered in O&M Scope as per RfS are not carried out by the contractor/ Bidders during the O&M period, the Engineer-In-Charge shall take appropriate action as deemed fit. IPGCL reserves the right to make surprise checks/ inspection visits at its own or through authorized representative to verify the O&M activities being carried out by the Bidder. Failure to adhere to above guidelines will result in penal action including debarring from participation in next tender.
- 3.26.2.13 The SPDs should have their service network in or around Delhi, within a radius of 50 Kms and shall provide address of service center in O&M manual.
- 3.26.2.14 The bidder shall use the original parts in case of any fault in the PCU/Inverter during the AMC period of 5 years. In case the original part/parts are not available with the manufacturer of the PCU/Inverter (Based on certificate from the manufacturer), the bidder shall use the new parts of other standard brands available in the market or will use the repaired parts.

3.27 METERING AND GRID CONNECTIVITY

- 3.27.1 Metering and grid connectivity of the roof top solar PV system under this scheme would be the responsibility of the Empanelled Vendor in accordance with the prevailing guidelines of the concerned DISCOM and / or CEA (if available by the time of implementation)..

3.28 PLANT PERFORMANCE EVALUATION

- 3.28.1 The Empanelled Vendor shall be required to meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) as per the GHI levels of the location during the O&M period. PR should be shown minimum of 75% at the time of inspection for initial commissioning acceptance to qualify for release of 30% subsidy and as per Clause 6.8 of Section-II. Minimum CUF of 15% should be maintained for a period of 5 years AFTER ACCOUNTING FOR YEARLY DEGRADATION RATE (20% IN 25 YEARS) for fulfilling one of the conditions for release of PBG. The bidder should send the periodic plant output details to IPGCL for ensuring the CUF. The PR will be measured at Inverter output level during peak radiation conditions

3.29 PROGRESS REPORT

The bidder shall submit the progress report monthly to IPGCL in Prescribed Performa. IPGCL will have the right to depute it's representatives to ascertain the progress of contract at the premises of works of the bidder.

3.29.1 Submission of Project Completion Report (PCR)

The Empanelled Vendor shall submit the Project Completion Report in (soft copy and signed copy) after commissioning of the project as per the Scope of RFS to IPGCL as per the Format given in **Annexure J**. Non submission of the report shall be considered as "Breach of Contract" and shall attract punitive actions as per the relevant provisions of the Contract including non-release of subsidy. However, the decision of Engineer-in -charge shall be final in this regard.

3.29.2 Submission of O&M Report (OMR)

The bidder shall submit the Monthly O&M Report mandatorily to IPGCL as per the Format enclosed at **Annexure I**. Non submission of the report shall be considered as "Breach of Contract" and shall attract punitive actions as per the relevant provisions of the Contract including non-release of subsidy. However, the decision of Engineer-in -charge shall be final in this regard.

3.30 PROJECT INSPECTION

All Projects under PART-A, ,C, C, D or E, the project progress will be monitored by IPGCL/ EE&REM Center and the projects will be inspected for quality at any time during commissioning or after the completion of the project either by officer(s) from IPGCL or any agency/ experts designated / authorised by IPGCL/ EE&REM Center from time to time. IPGCL shall depute a technical person(s) from its list of empanelled experts/ agencies updated from time to time for inspection, Third party verification, monitoring of system installed to oversee, the implementation as per required standards and also to visit the manufacturer's facilities to check the quality of products as well as to visit the system integrators to assess their technical capabilities as and when required. The cost of Inspection shall be borne by Vendor only. The projects shall be inspected at any time during commissioning or after the completion of the project(s) as follows:

Inspection shall be carried out by Inspecting officer(s) nominated by IPGCL, IPGCL officials or BEE Certified Energy Auditors or any other agencies to be notified by IPGCL from time to time.

3.31 CANCELLATION OF SUBSIDY

IPGCL will not release the subsidy for any shortcomings in commissioning as per technical specifications mentioned or for performance ratio (PR) below the specified limit (75%) after commissioning. Also PBG will not be released in case CUF falls below 15% (AFTER ACCOUNTING FOR YEARLY DEGRADATION RATE (20% IN 25 YEARS) during O&M period of 5 years.

3.32 APPLICABLE LAW

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

3.33 SETTLEMENT OF DISPUTE

3.33.1 All disputes and differences arising out of or under the contract including, however, without prejudice to the generality of the aforesaid, any question regarding the existence, validity or termination, in respect thereof, the parties at the first instance shall endeavor to resolve such dispute or differences amicably by mutual consultation

3.33.2 If the parties fail to resolve, the disputes or differences amicably by mutual consent, within 45 days of its arising, the disputes or differences shall be referred to arbitration either party may refer the disputes or differences to arbitration as provided hereinafter, by giving notice in writing to the other party of its intention to refer the disputes or differences to arbitration and such arbitration proceedings shall commence with the receipt of the aforesaid notice by the other party. Any dispute in respect of which a notice of intention to refer the same to arbitration has been given in terms of sub clause 3.32.2, shall be finally settled by arbitration.

3.33.2.1 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 by either party for Arbitration to the sole Arbitrator to be nominated by the Secretary (Power), GNCTD

3.33.2.2 IN ALL OTHER CASES

3.33.2.2.1 In case the contractor is not a public sector enterprise or a Govt. Deptt. And in all other cases, any dispute referred to arbitration by a party shall be heard by an arbitration panel composed of three arbitrators, in accordance with the provisions as set forth below.

3.33.2.2.2 The IPGCL 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

twenty (20) 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 who shall be the Secretary (Power), GNCTD

- 3.33.2.2.3 If one party fails to appoint its arbitrator within thirty-two (32) 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.
 - 3.33.2.2.4 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 3.31 (Applicable Law) and a substitute shall be appointed in the same manner as the original arbitrator.
 - 3.33.2.2.5 The venue of arbitration shall be New Delhi. The provisions of Arbitration and Conciliation Act, 1996, as amended from time to time shall govern the Arbitration proceedings conducted in respect of the disputes and the differences arising out of or under the contract, except to the extent, otherwise agreed herein by the parties.
 - 3.33.2.2.6 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.
 - 3.33.2.2.7 The arbitrator(s) shall give reasoned award.
- 3.33.3 Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the agreement unless they otherwise agree.
- 3.33.4 Cost of arbitration shall be equally shared between the Empanelled Vendor or Contractor and IPGCL.

3.34 FORCE MAJEURE

- 3.34.1 Notwithstanding the provisions of clauses contained in this RFS document; the contractor shall not be liable to forfeit (a) PBG for delay and (b) termination of contract; if he is unable to fulfill his obligation under this contract due to force majeure conditions.
- 3.34.2 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 IPGCL and its decision shall be final and binding on the contractor and all other concerned.

3.34.3 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 months, IPGCL has the right to terminate the contract in which case, the PBG shall be refunded to him.

3.34.4 If a force majeure situation arises, the contractor shall notify IPGCL in writing promptly, not later than 14 days from the date such situation arises. The contractor shall notify IPGCL not later than 3 days of cessation of force majeure conditions. After examining the cases, IPGCL shall decide and grant suitable additional time for the completion of the work, if required.

3.35 LANGUAGE

3.35.1 All documents, drawings, instructions, design data, calculations, operation, maintenance and safety manuals, reports, labels and any other data shall be in English Language. The contract agreement and all correspondence between the IPGCL and the bidder shall be in English language. O&M manual and warranty card should be in English & Hindi languages.

3.36 OTHER CONDITIONS

3.36.1 The Empanelled Vendor 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 IPGCL in writing.

3.36.2 The Empanelled Vendor or its subcontractors shall not display the photographs of the work and not take advantage through publicity of the work without written permission of IPGCL and owner of the Rooftop.

3.36.3 The Empanelled Vendor or its subcontractors shall not make any other use of any of the documents or information of this contract, except for the purposes of performing the contract.

3.36.4 IPGCL will not be bound by any Power of Attorney granted/ issued by the Empanelled Vendor or its subcontractors or by any change in the composition of the firm made during or subsequent to the execution of the contract. However, recognition to such Power of Attorney and change (if any) may be given by IPGCL after obtaining proper legal advice, the cost of which will be chargeable to the Empanelled Vendor concerned.

3.36.5 SUCCESSORS AND ASSIGNEES:

In case the IPGCL or Empanelled Vendor 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.

3.36.6 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.

3.36.7 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.

3.36.8 RIGHTS & REMEDIES UNDER THE CONTRACT ONLY FOR THE PARTIES

This contract is not intended & shall not be construed to confer on any person other than the IPGCL & Empanelled Vendor hereto, any rights and / or remedies herein.

3.36.9 PREFERENCE FOR M.S.M.E/ STATE OR CENTRAL PSUS

There is no relaxation in terms of any conditions of the RFS or price preference or processing fee or Bid Bond or PBG for M.S.M.E/ State or Central PSUs.

3.36.10 CORRESPONDENCE

Bidder requiring any Techno-Commercial clarification of the bid documents may contact in writing or by Fax /E Mail.

Name & Desig.	Contact Number	Email id
Sh. S. P. Singh, GM (T) C&M	011 2337 0541	spsingh.ppcl@yahoo.com
Sh. R.K. Nagpal, GM (T) Solar	011 2326 7310	nagpalrk@rediffmail.com
Sh. A.K. Jha, Dy. GM (T) Solar	011 2327 8432	akjhasundhara@gmail.com

Verbal clarifications and information given by the IPGCL or its employees or its Representatives shall not be in any way entertained.

SECTION - II

3 EVALUATION CRITERIA AND SUBSIDY DISBURSEMENT

3.1 BID EVALUATION AND SUBSIDY DISBURSEMENT

3.1.1 BID EVALUATION

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 as per Clause 3.4 of Section-I
Step III	Evaluation of Price Bid
Step IV	Successful Bidders(s) selection

3.2 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 subject to Clause 3.4. Any of the following may cause the Bid to be considered "Non-responsive", at the sole discretion of IPGCL:

- a. Bids that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney supported by a board resolution, Bid Bond, etc.;
- b. Bid not signed by authorized signatory and /or stamped in the manner indicated in this RFS;
- c. Material inconsistencies in the information /documents submitted by the Bidder, affecting the Eligibility Criteria;
- d. Information not submitted in the formats specified in this RFS;
- e. Bid being conditional in nature;
- f. Bid not received by the Bid Deadline;
- g. Bid having Conflict of Interest;
- h. More than one Member of a Bidding Company using the credentials of the same Parent Company /Affiliate;
- i. Bidder delaying in submission of additional information or clarifications sought by IPGCL as applicable;
- j. 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. Clause 3.4 shall be used to check whether each Bidder meets the stipulated requirement.

4 PRELIMINARY EXAMINATION

- 4.1** The IPGCL will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and stamped and whether the Bids are otherwise in order.
- 4.2** Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total Amount that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total amount shall be corrected. If there is a discrepancy between words and figures, the amount written in words will prevail.

5 EVALUATION OF BIDDER'S FULFILMENT OF ELIGIBILITY CRITERIA

- 5.1** 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 Clause 3.4. Non-availability of information and related documentary evidence for the satisfaction of Eligibility Criteria may cause the Bid non- responsive.

5.2 EVALUATION OF PRICE BID

Price Bid(s) of the Qualified Bidders shall be opened in online presence of the representatives of such Qualified Bidders, who wish to be present, on a date as may be intimated by IPGCL to the Bidders through IPGCL website www.ipgcl-ppcl.gov.in or Email. The evaluation of Price Bid shall be carried out based on the information furnished in Financial Bid (Price Bid). The Price Bid submitted by the Bidders shall be scrutinized to ensure conformity with the RFS. Any Bid not meeting any of the requirements of this RFS may cause the Bid to be considered "Non-responsive" at the sole decision of the IPGCL.

5.2.1 PART- A, PART - B & PART - C

- a. The Price bids for the Part-A, Part B & **Part - C** shall be evaluated separately.
- b. The Project Cost shall be calculated up to two decimal places. However in case of a tie, capacity shall be allocated to the bidder having the maximum proposed capacity as per the covering letter.
- c. Total Project cost shall be considered during evaluation as mentioned in **Format B**, **Format C** and **Format D**.

5.2.2 PART- D

- a. The Price bids for the Part-D shall be evaluated separately.
- b. The bidders shall quote ECALATING TARIFF AT YEARLY ESCALATION RATE OF 5%/ ANNUM) for 25 years.
- c. The bidder shall quote project cost/ MW
- d. The evaluated price shall be calculated up to two decimal places. However in case of a tie, capacity shall be allocated to the bidder having the maximum proposed capacity as per the covering letter.

Evaluated price = Eligible subsidy amount equal to 30% of total project cost quoted by the bidder or Rs 2.13 Cr whichever is lower plus total cost of electricity estimated.

5.2.3 PART- E

- a. The Price bids for the Part-E shall be evaluated separately.
- b. The bidders shall quote fixed and flat TARIFF for 25 years.
- c. The bidder shall quote project cost/ MW
- d. The evaluated price shall be calculated up to two decimal places. However in case of a tie, capacity shall be allocated to the bidder having the maximum proposed capacity as per the covering letter.

Evaluated price = Eligible subsidy amount equal to 30% of total project cost quoted by the bidder or Rs 2.13 Cr whichever is lower plus total cost of electricity estimated.

5.3 SUCCESSFUL BIDDER(S) SELECTION

6.3.1 Bids qualifying in Clause 3.4 shall only be evaluated in this stage.

6.3.2 Project Cost quoted in all Price Bids of Qualified Bidders shall be ranked from the lowest to the highest for PART-A, PART-B and PART-C separately.

6.3.3 Evaluated price of all Price Bids of Qualified Bidders shall be ranked from the lowest to the highest for PART-D & E.

6.3.4 Allocation of Capacity and Empanelment of Vendors for Part-A, Part-B & Part-C:

6.3.4.1 **For PART-A, B, C:** Based on the price bid quoted by the bidders, IPGCL shall arrange the bids in the ascending order i.e. L1, L2, L3, _ _ _ (L1 being the lowest quote).

6.3.4.2 Lowest bidder will be declared as the successful bidder. The L1 bidder's quoted capacity shall be allocated to the L1 successful bidder. The amount of subsidy to be provided to the successful bidder(s) shall be dependent upon the price quoted by the L1 bidder i.e. subsidy to be provided to the L1 bidder and as such the subsidy shall be same for all the successful bidders.

6.3.4.3 For further allocation, (after allocating the capacity to the L1 bidder) based on the price bid quoted by the bidders, IPGCL shall arrange the bids in the ascending order i.e. L2, L3, L4 _ _ _ and so on (L2 being the second lowest quote) and start allocating the balance capacity in the ascending order as per above. IPGCL shall allocate the capacity until the Tender Capacity is fulfilled.

6.3.4.4 All the qualified bidders except the L1 bidder will be given 7 days from the date of notification of discovered Price on IPGCL website (www.ipgcl-ppcl.gov.in) to give their consent to execute the work at L1 subsidy amount, failing which it will be assumed that they are not interested to match L1 subsidy amount and their capacity shall be allocated to the other successful bidder(s) who wish to match the same. IPGCL as its sole discretion may increase the timeline as indicated above.

- 6.3.4.5 If other bidders wishes to match the prices quoted by L-1 bidders then the allocation of capacity shall be as follows: -
- a) L1 bidder's quoted capacity shall be allocated to the L1 successful bidder.
 - b) The remaining capacity shall be equally distributed among all the other vendors matching the prices quoted by L-1 bidders.
 - c) The consent for matching the L-1 prices shall be given by the other bidders within seven days.

- 6.3.4.6 **For Part D & E:** Based on evaluated price in the price bid quoted by the bidders, IPGCL shall arrange the bids in the ascending order i.e. L1, L2, L3, _ _ _ and so on (L1 being the lowest quote).

Evaluated price = Eligible subsidy amount equal to 30% of total project cost quoted by the bidder or Rs 2.13 Cr whichever is lower plus total cost of electricity estimated.

- 6.3.4.7 Lowest bidder will be declared as the successful bidder. The L1 bidder's quoted capacity shall be allocated to the L1 successful bidder.

- 6.3.4.8 For further allocation, (after allocating the capacity to the L1 bidder) based on the evaluated price quoted by the bidders, IPGCL shall arrange the bids in the ascending order i.e. L2, L3, L4 _ _ _ _ and so on (L2 being the second lowest quote) and start allocating the balance capacity in the ascending order as per above. IPGCL shall allocate the capacity until the Tender Capacity is fulfilled.

- 6.3.4.9 All the qualified bidders except the L1 bidder will be given 7 days from the date of notification of discovered price on IPGCL website (www.ipgcl-ppcl.gov.in) to give their consent to execute the work at L-1 subsidy, failing which it will be assumed that they are not interested execute the work and their capacity shall be allocated to the other successful bidder(s). IPGCL as its sole discretion can increase the timeline as indicated above.

- 6.3.4.10 If other bidders wishes to match the prices quoted by L-1 bidders then the allocation of capacity shall be as follows : -
- a) L1 bidder's quoted capacity shall be allocated to the L1 successful bidder.
 - b) The remaining capacity shall be equally distributed among all the other vendors match the prices quoted by L-1 bidders.
 - c) The consent for matching the L-1 prices shall be given by the other bidders within seven days.

- 6.3.4.11 As per above, IPGCL shall allocate the capacity until the Tender Capacity is fulfilled.

- 6.3.4.12 The selection process shall stand completed once the Tender Capacity has been achieved through the summation of the capacity offered by the Successful Bidders or when the balance or the Tender Capacity is less than the Minimum Tender Capacity.

- 6.3.4.13 At any step during the selection of Successful Bidder(s) in accordance with Clause

6.3.4, the IPGCL reserves the right to increase/decrease the Tender Capacity by up to fifty percent (50%) of the capacity indicated in Clause 2.1 of the RFS to achieve the balance Tender Capacity and select the Successful Bidder with the lowest Project Cost/ lowest evaluated price amongst the remaining Bids.

6.3.4.14 The Letter(s) of Allocation (LOA) shall be issued to all such Empanelled Vendors(s) selected as per the provisions of this Clause 6.3.4.

6.3.5 Each Empanelled Vendor shall acknowledge the LOA and return duplicate copy with signature of the authorized signatory of the Empanelled Vendor to the IPGCL within Thirty (30) days of issue of LOA.

6.3.6 If the Empanelled Vendor, to whom the Letter of Allocation has been issued does not fulfill any of the conditions specified in Bid document, the IPGCL reserves the right to annul/cancel the award of the Letter of Allocation of such Empanelled Vendor.

6.3.7 The IPGCL at its own discretion, has the right to reject any or all the Bids without assigning any reason whatsoever, at its sole discretion

6.3.8 Duration of Empanelment

The selected firms/bidders will be empanelled initially for one year for Parts-A, B,C,D or E separately from the date of issuance of empanelment. After completion of this period, the validity of rates may further be extended on the basis of performance of the consultant firm and mutual consent between IPGCL and interested empanelled firms. EE&REM centre/ IPGCL reserve the right to reject the Empanelment during the empanelment period without giving any reason or prior notice.

6.3.9 The list of the empanelled bidder/firm will be circulated to the registered applicant.

5.4 INCREASE/DECREASE OF BIDDER ALLOCATED CAPACITY

6.4.1 IPGCL reserves the right to increase/decrease the Bidder(s) Allocated Capacity up to fifty percent (50%) at the sole discretion of IPGCL on the request of the Empanelled Vendor.

6.4.2 In case capacity is enhanced by IPGCL as per Clause 6.4.1 above, Empanelled Vendor shall submit the equivalent amount of PBG to IPGCL within 30 days from the date of issue of Sanction letter, failing which sanctioned capacity shall stands cancelled.

5.5 TRANSFER OF CAPACITY

6.5.1 In case a Empanelled Vendor is facing genuine difficulty in execution of as per letter of allocation. IPGCL shall allow transfer of allocated capacity in full or part.

6.5.2 Amended Performance security (PBG pertaining to additional capacity allocated or capacity transferred shall be submitted by bidder within 15 days from the date of issue of such notification.)

6.5.3 Capacity can be transferred from PART-A and PART-B, Part-C, part D and Part E or vice-versa, In such case lowest rate of shall be the reference price for capacity execution.

Note: It is the prerogative of IPGCL to increase/decrease/transfer the Empanelled Vendor allocated capacity on bidder's request.

6 NOTIFICATION TO SUCCESSFUL BIDDERS

- 6.1** The name of Empanelled Vendors shall be notified indicating the allocated capacity and the offered price on IPGCL website www.ipgcl-ppcl.gov.in and also shall be notified individually through letter of allocation.

7 PROJECT ALLOCATION AND SANCTION

- 7.1** The identification of the projects (roof tops) at the time of bidding is not mandatory. The Bidders, however, in their own interest are advised to make a preliminary survey of availability of roof tops for which they intend to Bid and as prescribed in the RFS, as well as issue of Grid connectivity, as non- availability of roof tops and non-completion of other formalities after allocation of project will result in forfeiture of Bid Bond/PBG amount submitted by them.
- 7.2** The Successful Bidders selected as described in Clause 6.3 above shall be empanelled for one year and IPGCL shall be issued Letter of Allocation (LOA) indicating the allocated capacity & Project Cost etc.
- 7.3** The bidders who have been notified as Empanelled Vendors, shall be given 12 months from the date of issue of Letter of Allocation for identification & execution of the capacity. Preference should be given to IPGCL identified roofs first. In the event of offer given by IPGCL to the Bidder to execute the project in the IPGCL identified roof, the time for submission of project sanction documents by the bidder to IPGCL will be 4 months from the date of issue of allocation letter which can be extended depending upon the merit of the case. Failure of non-compliance of conditions stipulated above shall lead to forfeiture of PBG in proportion to the capacity allocated in the IPGCL identified location.
- 7.4** If after 12 months, the Empanelled Vendor could not identify the rooftop(s) capacity up to the allocated capacity and submit Project sanction documents, in such case PBG for unidentified allocated capacity shall be forfeited and the allocated capacity gets cancelled and bidder including its affiliates/GROUP COMPANIES/ Parent / Ultimate parent company may be debarred to participate in IPGCL's future tenders for a period as decided by the competent authority of IPGCL.
- 7.5** Empanelled Vendors shall share the time and date stamping photographs of the roofs and location details (Address) with IPGCL before entering into any legal agreement with the Owner. This has to ensure that the location identified by the Empanelled Vendor is freshly identified and strictly complying the norms provided in Clause 13.2 below.
- 7.6** For identification of projects, IPGCL or state nodal agency (SNA) may provide help. However the entire responsibility of finding the buildings lies with the Bidder.
- 7.7** Onus of identifying the buildings/rooftops and completing the other documentation like finalizing the Project report and entering into agreements with the buildings/rooftops owners lies with the Empanelled Vendor within the above mentioned time frame even for

the buildings/rooftops identified by IPGCL for preferential installation.

- 7.8** After the Project Sanction Documents have been submitted by the Empanelled Vendor/ Project Developer and accepted by IPGCL, IPGCL will issue the Sanction Letter(s) for the Project (s) indicating the subsidy amount(s) which will be disbursed in line with the provisions of the RFS document. The Empanelled Vendor shall complete the design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of each project within 12 months from the date of issue of letter of allocation.
- 7.9** If the Empanelled Vendor fails to commission the sanctioned project within specified time i.e. 12 months from the date of LOA, penalty/LD on per day basis calculated for the Performance Security on a 6 month's period would be levied. After 6 months, the project will get cancelled and the total PBG would be forfeited.

In case, due to delay, PBG submitted by the bidder(s) is forfeited in full/part, bidder has to resubmit the PBG of requisite amount and validity as per the RfS, failing which their subsidy amount shall not be released.

8 SUBSIDY DISBURSEMENT & PAYMENT CLAUSES:

8.1 For PART-A, Part-B & Part-C

EE&REM Center/ IPGCL will provide 30% CFA (in Rs/Wp) calculated at L1 project cost quoted by the Successful Bidder or the benchmark cost i.e. Rs.22.5/ Wp in case of Part A & Part B and Rs. 21.3/ Wp for Part C whichever is lower. All the Empanelled Vendors shall get L1 of Project cost as subsidy.

The difference amount of project cost and CFA shall be paid by the concerned roof top owner after successful installation, commissioning of the Solar PV Power Plant and injection of surplus power (if any) into the Delhi grid confirming to technical specification as specified in this EoI. EE&REM Centre, Delhi/ IPGCL in no way shall be responsible for this payment

For PART-D & E

EE&REM centre will provide 30% of the Project Cost as quoted by the L 1 Successful Bidder in Price Bid as subsidy Subject to a maximum of Rs 2.13 Cr per MWp. Subsidy.

The cost quoted by the bidder in the Price Bid shall be considered as the Project Cost for computation of subsidy eligibility of the bidder.

8.2 The subsidy shall be disbursed as follows.

Subsidy as calculated under Clause 8.1 for Part A,B, C, D, E above will be released as follows:

The 2/3rd of the subsidy amount of the project cost shall be disbursed after Successful Commissioning and acceptance of project and balance 1/3rd of subsidy amount after completion of first year of successful O&M by EE&REM centre on recommendation of IPGCL.

If consent for satisfactory completion of job is delayed by owner on the grounds which donot form part of this RFS, then subsidy can be disbursed without owner's consent with undertaking from empanelled vendor on stamp paper for indemnification of IPGCL.

8.3 IPGCL may consider to release subsidy on case to case basis depending on the actions taken by the Successful Bidder and subject to meeting the following conditions:

- 8.3.1 The rooftop SPV power plant should be completed as per the Scope of RFS.
 - 8.3.2 The rooftop SPV power plant above 200 kWp capacity must get Electrical Inspectorate inspection certificate as per latest Guidelines/Regulations.
 - 8.3.3 Intimation to the concerned DISCOM: All the bidders shall intimate the concerned DISCOMS regarding implementation of grid connected roof top solar PV projects as per the given format in Annexure-G and submit the copy of same to IPGCL for the purpose of release of Subsidy.
 - 8.3.4 Owner Consent: In case the Empanelled Vendor/ Project Developer is not the Owner of the Project, subsidy shall be released to Empanelled Vendor/ Project Developer after written consent of Owner only. For RESCO projects, owner shall be the Empanelled Vendor.
- 8.4** However, if the consent is being delayed from the Owner on the grounds which are not a part of RFS then subsidy can be released without owner's consent with the undertaking of Empanelled Vendor on stamp Paper for indemnification of IPGCL.

8.5 The subsidy shall be released by IPGCL /EE&REM Centre, only after receipt of the same from MNRE.

9 OTHER CONDITIONS

9.1 Bidder or owner of the building has to obtain all the necessary approvals/Consents/Clearances required for Erection, Testing, Commissioning and O&M of the project including Grid connectivity. IPGCL shall not have any responsibility in this regard.

9.2 BID BOND AND PROCESSING FEE SUBMISSION:

Bid bond shall be submitted separately for the offered capacity in a separate envelop along with processing fee & other details.

9.3 TAX EXEMPTIONS:

Price bids are invited inclusive of Taxes and duties. However, Tax exemptions including certificates of any sort, if available may be dealt with the concerned Department of Govt. of India/ Delhi by the bidder. IPGCL in no case will be responsible for providing any tax exemptions to the bidder.

9.4 Eligibility of standalone system:

Standalone system is not allowed under this scheme. The system should be grid-interactive.

9.5 Requirement of approvals on makes of the Components:

The modules should be manufactured in India only. Rest of the components can be procured from any source. However these items should meet the Technical specification and standards mentioned in RFS.

9.6 OPERATION OF THE SYSTEM DURING WEEKENDS AND GENERAL HOLIDAYS AND CALCULATION OF CUF

During grid failure, the SPV system stops generating. Any instances of grid failure need to be mentioned in the monthly report and those instances need to be authorized by local DISCOM. Then the period will be excluded in calculation of CUF.

10 LIQUIDATED DAMAGES(LD) FOR DELAY IN PROJECT IMPLEMENTATION

10.1 IPGCL will issue the sanction letter(s) for the Project (s) indicating the subsidy amount(s) which will be disbursed in line with the provisions of the RFS document. The Bidder shall complete identification of the roof(s), "submission of project sanction documents as per the requirement of IPGCL Engineer-in- Charge", Design, Engineering, Manufacture, Supply, storage, civil work, erection, testing & commissioning of each project within 12 months from the date of issue of Allocation letter.

10.2 If the bidder fails to commission the sanctioned project within specified time, Liquidated Damages on per day basis calculated for the Performance Security on a 6 months period would be levied. After 6 months the project will get cancelled and the total PBG amount would be forfeited.

Ex: If a project of 500 kW is delayed by 36 days then the Liquidated Damages will be levied as given below.

Liquidated Damages = ((Performance Security)/180 days)*delayed days =
(22, 50,000 /180)*36

11 TIME OF COMPLETION OF SANCTIONED CAPACITY

11.1 The Empanelled vendor shall complete the roofs identification, submission of project sanction documents as per the requirement of IPGCL Engineer-in-Charge design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of sanctioned project(s) within 12 months from the date of issue of allocation letter(s). In case of delay beyond scheduled commissioning period, the bidder shall be liable for Liquidated Damages as per Clause 11.

12.1.1 The period of construction given in Time Schedule includes the time required for mobilization as well as testing, rectifications if any, retesting and completion in all respects to the entire satisfaction of the Engineer-in- Charge.

12.1.2 A joint programme of execution of the Work will be prepared by the Engineer-in-Charge or its representative nominated for the purpose and Successful bidders based on priority requirement of this project. This programme will take into account the time of completion mentioned in clause 12.1 above and the time allowed for the priority Works by the Engineer-in- Charge.

12.1.3 Monthly/Weekly implementation programme will be drawn up by the Engineer-in-Charge jointly with the Empanelled Vendor, based on availability of Work fronts as per Clause 9.1.2 above. Empanelled Vendor shall scrupulously adhere to these targets /programmes by deploying adequate personnel, tools and tackles and he shall also supply himself all materials of his scope of supply in good time to achieve the targets/programmes. In all matters concerning the extent of targets set out in the weekly and monthly programmes and the degree of achievements, the decision of the Engineer-in- Charge will be final and binding.

12 UPDATING THE PROJECT PROGRESS ON BI-WEEKLY BASIS

Empanelled Vendor's authorized representative, in whose name PoA has been executed and submitted along with the bid, shall updating the project progress on biweekly basis in the sanction letter/ Allocation letter. Empanelled Vendor should update the info as per the requirement. Non updating of the progress shall be considered as no progress and shall attract punitive actions as per the relevant provision of the Contract. However, the decision of Engineer-in - charge shall be final in this regard.

13 INSPECTION AND AUDIT BY THE GOVERNMENT

The Empanelled vendor shall permit the IPGCL to inspect the Vendor's site, accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the IPGCL, if so required by the IPGCL any time.

14 COMMISSIONING /COMPLETION CERTIFICATE:

14.1 Application for completion/commissioning certificate:

When the Empanelled Vendor fulfils his obligation under the Contract, he shall be eligible to apply for Completion/Commissioning Certificate. The Engineer- in-Charge shall normally issue the Completion Certificate to the Empanelled Vendor within one month after receiving any application therefore from the Empanelled Vendor after verifying from the completion documents and satisfying himself that the Work has been completed in accordance with and as set out in Contract documents. The Empanelled Vendor, after obtaining the Completion Certificate, is eligible to avail the subsidy as per the Clause 8.

15.1.1 DOCUMENT SUBMISSION FOR ISSUE OF COMMISSINONING/ COMPLETION CERTIFICATE:

For the purpose of Clause 15.1 above the following documents will be deemed to form the completion documents:

- a. Checklist for inspection of Roof top SPV power plants as per IPGCL format.
- b. Project completion/satisfaction certificate from roof top owner's/project developers.

15.1.2 FINAL DECISION AND FINAL CERTIFICATE:

15.1.2.1 Upon completion of 5 years of O&M and subject to the Engineer-in- Charge being satisfied, the Engineer-in-Charge shall (without prejudice to the rights of the IPGCL to retain the provisions of relevant Clause hereof) otherwise give a certificate herein referred to as the Final Certificate to that effect and the Empanelled Vendor shall not be considered to have fulfilled the whole of his obligations under Contract until Final Certificate shall have been given by the Engineer-in-Charge notwithstanding any previous entry upon the Work and taking possession, working or using of the same or any part thereof by the Owner of Roof/IPGCL.

14.2 DEDUCTIONS FROM THE CONTRACT PRICE:

15.2.1 All costs, damages or expenses which IPGCL may have paid or incurred, which under the provisions of the Contract, the Empanelled Vendor is liable/will be liable, will be claimed by the IPGCL. All such claims shall be billed by the IPGCL to the Contractor within 15 (fifteen) days of the receipt of the payment request and if not paid by the Empanelled Vendor within the said period, the IPGCL may, then, deduct the amount from any moneys due i.e., Performance Security or becoming due to the contractor or Empanelled Vendor under the contract or may be recovered by actions of law or otherwise, if the Empanelled Vendor fails to satisfy the IPGCL of such claims.

14.3 CORRUPT OR FRAUDULENT PRACTICES

The IPGCL requires that Empanelled Vendors/ Contractors should follow the highest standard of ethics during the execution of contract. In pursuance of this policy, the IPGCL:

15.3.1 defines, for the purposes of this provision, the terms set forth as follows :

15.3.2 "corrupt practice" means the offering, giving, receiving or soliciting of anything of

value to influence the action of a public official in the bid process or in contract execution; and

15.3.3 “fraudulent practice” means a misrepresentation of facts in order to influence a bid process or the execution of a contract to the detriment of the IPGCL/Govt scheme, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non- competitive levels and to deprive the IPGCL of the benefits of free and open competition;

15.3.4 A firm will be declared ineligible/debarred, either indefinitely or for a specific period of time, a GOVT contract if at any time it is found that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Government/ IPGCL schemes.

15 DEBARRED FROM PARTICIPATING IN IPGCL’S ROOF TOP TENDER

15.1 IPGCL reserves the right to carry out the performance review of each Bidder from the time of submission of Bid onwards. In case it is observed that a bidder has not fulfilled its obligations in meeting the various timelines envisaged, in addition to the other provisions of the RFS, such Bidders may be debarred from participating in IPGCL’s any future tender for a period as decided by the competent authority of IPGCL.

15.2 The Empanelled Vendor must ensure that the ROOF TOP SOLAR PV SCHEME subsidy is available for newly commissioned projects i.e. for the projects whose construction/dispatch of equipment’s have been started only after the issue of sanction letter/allocation letter .Any roofs on which projects has been installed or commissioned before the issue of allocation letter/sanction letter shall be construed as fraudulent activity in which case Empanelled Vendor(s) may be debarred from participating in IPGCL’s future tender for a period as decided by the Competent authority. However, such locations may be used for installation of additional capacity with the prior approval of competent authority.

SECTION - III

TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to cancelation of subsidy in full or part as decided by IPGCL. Competent Authority's decision will be final and binding on the bidder.

16 DEFINITION

A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables, Junction boxes, Distribution boxes and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is without battery and should be designed with necessary features to supplement the grid power during day time. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

Solar PV system shall consist of following equipments/components.

- Solar PV modules consisting of required number of Crystalline PV cells.
- Grid interactive Power Conditioning Unit with Remote Monitoring System
- Mounting structures
- Junction Boxes.
- Earthing and lightening protections.
- IR/UV protected PVC Cables, pipes and accessories

16.1 SOLAR PHOTOVOLTAIC MODULES:

17.1.1 The PV modules used should be made in India.

17.1.2 The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part-1 - requirements for construction & Part 2 - requirements for testing, for safety qualification or equivalent IS.

- a) For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701.
- b) The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of minimum 300 Wp and above wattage. Module capacity less than minimum 300 watts shall not be accepted.
- c) Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.
- d) PV modules must be tested and approved by one of the IEC authorized test centers as per list available at MNRE website.

- e) The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum.
- f) The bidder shall carefully design & accommodate requisite numbers of the
- g) Modules to achieve the rated power in his bid. IPGCL/owners shall allow only minor changes at the time of execution.
- h) Other general requirement for the PV modules and subsystems shall be the following:
 - i. The rated output power of any supplied module shall have tolerance within +/- 3%.
 - ii. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
 - iii. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.
 - iv. I-V curves at STC should be provided by bidder.

17.1.3 Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each module. This should be inside the laminate only.

- 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) I-V curve for the module Wattage, I_m , V_m and FF for the module
- f) Unique Serial No and Model No of the module
- g) Date and year of obtaining IEC PV module qualification certificate.
- h) Name of the test lab issuing IEC certificate.
- i) Other relevant information on traceability of solar cells and module as per ISO
- j) 9001 and ISO 14001

17.1.4 Warranties:

a) Material Warranty:

- i. Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than five (05) years from the date of sale to the original customer ("Customer")
- ii. Defects and/or failures due to manufacturing
- iii. Defects and/or failures due to quality of materials
- iv. Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the Owners sole option.

b) Performance Warranty:

- i. The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output.

17 ARRAY STRUCTURE

- a) Hot dip galvanized MS mounting structures may be used for mounting the modules/ panels/arrays. Each structure should have angle of inclination as per the site conditions to take maximum insolation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
- b) The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed (like Delhi-wind speed of 150 km/ hour). It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard and submit wind loading calculation sheet to IPGCL. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.
- c) The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS 4759.
- d) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminium structures also can be used which can withstand the wind speed of respective wind zone. Necessary protection towards rusting need to be provided either by coating or anodization.
- e) Aluminium frames should be avoided for installations in coastal areas.
- f) The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels
- g) Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.
- h) The total load of the structure (when installed with PV modules) on the terrace should be less than 60 kg/m².

18 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 Aluminium /cast aluminium 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 of earthings. It should be placed at 5 feet height or above for ease of accessibility.

- 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.
- e) All fuses shall have DIN rail mountable fuse holders and shall be housed in thermoplastic IP 65 enclosures with transparent covers.

19 DC DISTRIBUTION BOARD:

- a) DC Distribution panel to receive the DC output from the array field.
- b) DC DPBs shall have sheet from enclosure of dust & vermin proof conform to IP 65 protection. The bus bars are 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.

20 AC DISTRIBUTION PANEL BOARD:

- a) AC Distribution Panel Board (DPB) shall control the AC power from PCU/ inverter, and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid tied mode.
- b) All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III/ IS60947 part I, II and III.
- c) The changeover switches, cabling work should be undertaken by the bidder as part of the project.
- d) All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical 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 45 degree Celsius, 80 percent humidity and dusty weather.
- f) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.
- g) Should conform to Indian Electricity Act and rules (till last amendment).
- h) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions

Variation in supply voltage	+/- 10 %
Variation in supply frequency	+/- 3 Hz

21 PCU/ARRAY SIZE RATIO:

- a) The combined wattage of all inverters should not be less than rated capacity of power plant under STC.
- b) Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

22 PCU/ Inverter:

As SPV 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, to 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
Control	Microprocessor /DSP
Nominal AC output voltage and frequency	415V, 3 Phase, 50 Hz (In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.)
Output frequency	50 Hz
Grid Frequency synchronization range	+ 3 Hz or more
Ambient temperature considered	-20o C to 50o C
Humidity	95 % Non-condensing
Protection of Enclosure	IP-20(Minimum) for indoor.
	IP-65(Minimum) for outdoor.
Grid Frequency Tolerance range	+ 3 or more
Grid Voltage tolerance	- 20% and +15%
No-load losses	Less than 1% of rated power
Inverter efficiency(minimum)	>93% (In case of 10 kW or above with in-built galvanic isolation)
Inverter efficiency (minimum)	> 90% (In case of less than 10 kW)
THD	< 3%
PF	> 0.9

- a) Three phase PCU/ inverter shall be used with each power plant system (10kW and/or above) but in case of less than 10kW single phase inverter can be used.
- b) PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.
- c) The output of power factor of PCU inverter is 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.
- d) Built-in meter and data logger to monitor plant performance through external computer shall be provided.
 - e) Anti-islanding (Protection against Islanding of grid): The PCU shall have anti islanding protection in conformity to IEEE 1547/UL 1741/ IEC 62116 or equivalent BIS standard.
 - f) Empanelled Vendors shall be responsible for galvanic isolation of solar roof top power plant (>100kW) with electrical grid or LT panel.
 - g) In PCU/Inverter, there shall be a direct current isolation provided at the output by means of a suitable isolating transformer. If Isolation Transformer is not incorporated with PCU/Inverter, there shall be a separate Isolation Transformer of suitable rating provided at the output side of PCU/PCU units for capacity more than 100 kW
 - h) The PCU/ inverter generated harmonics, flicker, DC injection limits, Voltage Range, Frequency Range and Anti-Islanding measures at the point of connection to the utility services should follow the latest CEA (Technical Standards for Connectivity Distribution Generation Resources) Guidelines.
 - i) 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.
 - j) The MPPT units environmental testing should qualify IEC 60068-2 (1, 2, 14, 30)/ Equivalent BIS standard. The junction boxes/ enclosures should be IP 65 (for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications.
 - k) 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 should be approved by international test houses.

23 INTEGRATION OF PV POWER WITH GRID:

The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the main electricity grid 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. Once the DG set comes into service, PV system shall again be synchronized with DG supply and load requirement would be met to the extent of availability of power. 4 pole isolation of inverter output with respect to the grid/ DG power connection need to be provided.

24 DATA ACQUISITION SYSTEM / PLANT MONITORING

- i. Data Acquisition System shall be provided for each of the solar PV plant. Data Logging Provision for plant control and monitoring, time and date stamped system data logs for analysis with the high quality, suitable PC. Metering and

- Instrumentation for display of systems parameters and status indication to be provided.
- ii. Solar Irradiance: An integrating Pyranometer / Solar cell based irradiation sensor (along with calibration certificate) provided, with the sensor mounted in the plane of the array. Readout integrated with data logging system.
 - iii. Temperature: Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with readouts integrated with the data logging system
 - iv. The following parameters are accessible via the operating interface display in real time separately for solar power plant:
 - a. AC Voltage.
 - b. AC Output current
 - c. Output Power
 - d. Power factor.
 - e. DC Input Voltage.
 - f. DC Input Current.
 - g. Time Active.
 - h. Time disabled.
 - i. Time Idle.
 - j. Power produced
 - k. Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage).
 - v. All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.
 - vi. PV array energy production: Digital Energy Meters to log the actual value of AC/ DC voltage, Current & Energy generated by the PV system provided. Energy meter along with CT/PT should be of 0.5 accuracy class.
 - vii. Computerized DC String/Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.
 - viii. String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored.
 - ix. Computerized AC energy monitoring shall be in addition to the digital AC energy meter.
 - x. The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.
 - xi. All instantaneous data shall be shown on the computer screen.

- xii. Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant.
- xiii. Provision for instantaneous Internet monitoring and download of historical data shall be also incorporated.
- xiv. Remote Server and Software for centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and temperature monitoring system.
- xv. Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis.
- xvi. Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided.
- xvii. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner / IPGCL location with latest software/hardware configuration and service connectivity for online / real time data monitoring / control complete to be supplied and operation and maintenance / control to be ensured by the bidder.
- xviii. The bidders shall be obligated to push real-time plant monitoring data on a specified intervals (say 15 minute) through open protocol at receiver location (cloud server) in XML/JSON format, preferably. Suitable provision in this regard will be intimated to the bidders.

25 TRANSFORMER “IF REQUIRED” & METERING:

- a) Dry type relevant kVA, 11kV/415V, 50 Hz Step up along with all protections, switchgears, Vacuum circuit breakers, cables etc. along with required civil work.
- b) The bidirectional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy.
- c) The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to IPGCL before commissioning of SPV plant.
- d) Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement.

26 POWER CONSUMPTION:

Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid. Finalization of tariff is not under the purview of IPGCL or MNRE. Decisions of appropriate authority like DISCOM, state regulator may be followed.

27 PROTECTIONS

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

27.1 LIGHTNING PROTECTION

The SPV power plants shall be provided with lightning & overvoltage 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 SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per IEC 62305 standards. 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.

27.2 SURGE PROTECTION

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

27.3 EARTHING PROTECTION

- a) Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lightning arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of Department/IPGCL as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.
- b) 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.

27.4 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 Rooftop 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 4-pole 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.

28 CABLES

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

- i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
- ii. Temp. Range: -10oC to +80oC.
- iii. Voltage rating 660/1000V.
- iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- v. Flexible
- vi. 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 (2%).
- vii. For the DC cabling, XLPE or, XLPO insulated and sheathed, UV-stabilized single core multi-stranded flexible copper cables shall be used; Multi-core cables shall not be used.
- viii. For the AC cabling, PVC or, XLPE insulated and PVC sheathed single or, multi-core multi-stranded cables as per MNRE guidelines shall be used; Outdoor AC cables shall have a UV-stabilized outer sheath.
- ix. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use. Outer sheath of cables shall be electron beam cross-linked XLPO type and black in colour.
- x. The DC cables from the SPV module array shall run through a UV-stabilized PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm.
- xi. Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers
- xii. All cables and conduit pipes shall be clamped to the rooftop, walls and ceilings with thermo-plastic clamps at intervals not exceeding 50 cm; the minimum DC cable size shall be 4.0 mm² copper; the minimum AC cable size shall be 4.0 mm² copper. In three phase systems, the size of the neutral wire size shall be equal to the size of the phase wires.
- xiii. Cable Routing/ Marking: All cable/wires are to be routed in a GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified. In addition, cable drum no. / Batch no. to be embossed/ printed at every one meter.
- xiv. Cable Jacket should also be electron beam cross-linked XLPO, flame retardant, UV resistant and black in colour.
- xv. All cables and connectors for use for installation of solar field must be of solar grade which can withstand harsh environment conditions including High temperatures, UV radiation, rain, humidity, dirt, salt, burial and attack by moss and microbes for 25 years and voltages as per latest IEC standards. DC cables used from solar modules to array junction box shall be solar grade copper (Cu) with XLPO insulation and rated for 1.1kV as per relevant standards only.
- xvi. The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant shall be provided by the bidder. Any change in cabling sizes if desired by the bidder

shall be approved after citing appropriate reasons. All cable schedules/ layout drawings shall be approved prior to installation.

- xvii. Multi Strand, Annealed high conductivity copper conductor PVC type ‘A’ pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armoured cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/ equivalent BIS Standards as specified below: BoS item / component Standard 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.
- xviii. The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0%.
- xix. The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%.

29 CONNECTIVITY

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the Distribution Code/Supply Code of the State and amended from time to time. Following criteria have been suggested for selection of voltage level in the distribution system for ready reference of the solar suppliers.

Plant Capacity	Connecting voltage
Up to 10 kW	240V-single phase or 415V-three phase at the option of the consumer
Above 10kW and up to 100 kW	415V – three phase
Above 100kW	At HT/EHT level (11kV/33kV/66kV) as per DISCOM rules

- a) The maximum permissible capacity for rooftop shall be 1 MW for a single net metering point.
- b) Utilities may have voltage levels other than above, DISCOMS may be consulted before finalization of the voltage level and specification be made accordingly.
- c) For large PV system (Above 100 kW) for domestic/ commercial installation having large load, the solar power can be generated at low voltage levels and stepped up to 11 kV level through the step up transformer. The transformers and associated switchgear would require to be provided by the SPV bidders.

30 TOOLS & TACKLES AND SPARES:

- a) After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose. List of tools and tackles to be supplied by the bidder for approval of specifications and make from IPGCL/ owner.
- b) A list of requisite spares in case of PCU/inverter comprising of a set of control

logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc along with spare set of PV modules be indicated, which shall be supplied along with the equipment. A minimum set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance which upon its use shall be replenished

31 DANGER BOARDS AND SIGNAGES:

- a) Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three signage shall be provided one each at battery -cum- control room, solar array area and main entry from administrative block. Text of the signage may be finalized in consultation with IPGCL/ owner.

32 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 TAC regulations and BIS standards. The fire extinguishers shall be provided in the control room housing PCUs as well as on the Roof or site where the PV arrays have been installed.

33 DRAWINGS & MANUALS:

- a) Two sets of Engineering, electrical drawings and Installation and O&M manuals are to 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.
- b) Approved ISI and reputed makes for equipment be used.
- c) For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to IPGCL/owners before progressing with the installation work

34 PLANNING AND DESIGNING:

- a) The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labour. The bidder should submit the array layout drawings along with Shadow Analysis Report to IPGCL/Owner for approval.
- b) IPGCL reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.
- c) 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.

35 DRAWINGS TO BE FURNISHED BY BIDDER AFTER AWARD OF CONTRACT

- a) The Contractor shall furnish the following drawings Award/Intent and obtain approval
- b) General arrangement and dimensioned layout
- c) Schematic drawing showing the requirement of SPV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
- d) Structural drawing along with foundation details for the structure.
- e) Itemized bill of material for complete SV plant covering all the components and associated accessories.
- f) Layout of solar Power Array.
- g) Shadow analysis of the roof.

36 SOLAR PV SYSTEM ON THE ROOFTOP FOR MEETING THE ANNUAL ENERGY REQUIREMENT

The Solar PV system on the rooftop of the selected buildings will be installed for meeting upto 90% of the annual energy requirements depending upon the area of rooftop available and the remaining energy requirement of the office buildings will be met by drawing power from grid at commercial tariff of DISCOMs.

37 SAFETY MEASURES:

The bidders 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 guidelines etc.

38 DISPLAY BOARD

The bidder has to display a board at the project site (above 25 kWp) mentioning the following:

- a) Plant Name, Capacity, Location, Type of Renewable Energy plant (Like solar wind etc.), Date of commissioning, details of tie-up with transmission and distribution companies, Power generation and Export FY wise.
- b) Financial Assistance details from IPGCL/MNRE/Any other financial institution apart from loan. This information shall not be limited to project site but also be displayed at site offices/head quarter offices of the Empanelled Vendor
- c) The size and type of board and display shall be approved by Engineer-in-charge before site inspection.

- 39 Testing: EE & REM Centre/ IPGCL reserves the right to test any equipment in the PV system including modules, cells, inverters, charge controllers etc. etc. at any time during the life of the plant through IEC test approved Test Lab available at MNRE website. In case of failure of any of the equipment in the test, vendor shall bear the

cost of the testing and also replace the equipment free of cost during the period of warranty.

- 40 Inspection: For the plant size more than 5 MWp at a single location, inspection of the equipment at the works of the manufacturer shall be done before supply of the material at site.
- 41 The PCU shall include an early accessible emergency button located at appropriate position on the unit.
- 42 If possible, 4 ft. offset from boundary of rooftop from all site should be kept while installing structure for module.
- 43 Please refer Annexure F for IEC standards to be mandatorily adhered

SECTION-IV

PRICE BIDS (To be submitted online separately)

Bids in PART-A:

Model : CAPEX
Project Ranging : 01 kWp to 05 kWp
Total Aggregate Capacity : 10 MWp
Minimum aggregate bid capacity : 100 kWp
Maximum aggregate bid capacity : 01 MWp

Bids in PART-B:

Model : CAPEX
Project Ranging : above 05 kWp to 10 kWp
Total Aggregate Capacity : 20 MWp
Minimum aggregate bid capacity : 500 kWp
Maximum aggregate bid capacity : 02 MWp

Bids for PART-C:

Model : CAPEX
Project Ranging : above 10 kWp
Total Aggregate Capacity : 30 MWp
Minimum aggregate bid capacity : 01 MWp
Maximum aggregate bid capacity : 03 MWp

Bids for PART-D (Fixed annually escalating tariff @5%):

Model : RESCO
Project Ranging : above 25 kWp
Total Aggregate Capacity : 12MWp
Minimum aggregate bid capacity : 01 MWp
Maximum aggregate bid capacity : 04 MWp

Bids for PART-E (Fixed Tariff for entire 25 years period):

Model : RESCO
Project Ranging : above 25 kWp
Total Aggregate Capacity : 12 MWp
Minimum aggregate bid capacity : 01 MWp
Maximum aggregate bid capacity : 04 MWp

FORMAT: B

PRICE BID FOR CAPEX (FOR PROJECTS RANGING 10 kWpto 25 kWp)

(PART- A) (01-05 KWp projects)

(To be submitted online separately)

EOI - RFS No: IPGCL/RFS-EOI-1/CAPEX-RESCO/04/ 2016 Date:

Sr. No	Description	Bid Capacity in kWp (A)	Unit Project cost (Rs./Wp) (B)	Total Project cost in Rs. C = A x B
1.	Design, Manufacturing, Supply, Erection, Testing & Commissioning including trail Operation, Operation & maintenance for a period of 5 years including Power Evacuation System and cost of replacement of all the parts, covered under Guarantee period for a period of 5 years from the date of commissioning of Roof top solar syatem.			
Rupees in words per watt peak:				

Note: In case of discrepancy in price bid (Excel file) and electronic form, the price mentioned in Excel file will prevail.

Yours faithfully,

Date: Signature of the Authorized signatory :.....
Place: Printed Name :
Designation:
Business Address:.....
.....
Country of Incorporation: (Common Seal).....

FORMAT: C

PRICE BID FOR CAPEX (FOR PROJECTS RANGING> 05 kWp upto 10 kWp)

(PART- B)

(To be submitted online separately)

EOI - RFS No: IPGCL/RFS-EOI-1/CAPEX-RESCO/04/ 2016 Date:

Sr. No	Description	Bid Capacity in kWp (A)	Unit Project cost (Rs./Wp) (B)	Total Project cost in Rs. C = A x B
1.	Design, Manufacturing, Supply, Erection, Testing & Commissioning including trail Operation, Operation & maintenance for a period of 5 years including Power Evacuation System and cost of replacement of all the parts, covered under Guarantee period for a period of 5 years from the date of commissioning of Roof top solar syatem.			
Rupees in words per watt peak:				

Note: In case of discrepancy in price bid (Excel file) and electronic form, the price mentioned in Excel file will prevail.

Yours faithfully,

Date: Signature of the Authorized signatory :.....

Place: Printed Name :

Designation:

Business Address:.....

.....

Country of Incorporation: (Common Seal).....

PRICE BID FOR CAPEX (FOR PROJECTS RANGING above 25 kWp to 500kWp)

(PART- C)

(To be submitted online separately)

EOI - RFS No: IPGCL/RFS-EOI-1/CAPEX-RESCO/04/ 2016 Date:

Sr. No	Description	Bid Capacity in kWp (A)	Unit Project cost (Rs./Wp) (B)	Total Project cost in Rs. C = A x B
1.	Design, Manufacturing, Supply, Erection, Testing & Commissioning including trial Operation, Operation & maintenance for a period of 5 years including Power Evacuation System and cost of replacement of all the parts, covered under Guarantee period for a period of 5 years from the date of commissioning of Roof top solar system.			

Rupees in words per watt peak:

Note: In case of discrepancy in price bid (Excel file) and electronic form, the price mentioned in Excel file will prevail.

Yours faithfully,

Date:

Signature of the Authorized signatory :.....

Place:

Printed Name :

Designation:

Business Address:.....

Country of Incorporation: (Common Seal).....

PRICE BID FOR RESCO (FOR PROJECTS RANGING above 25 kWp to 500kWp)**(PART- D) (Fixed annual escalation rate of 5%)****(To be submitted online separately)****EOI - RFS No: IPGCL/RFS-EOI-1/CAPEX-RESCO/04/ 2016 Date:****1. Evaluation on per MW basis:**

Year of Operation w.e.f. date of commercial operation to 31 St March of immediately succeeding financial year	Tariff (Rs/kWh)	Discount Factor at 11%	Discounted Tariff (Rs/kWh)	Estimated generation per year per 1 MWp plant at 15% min CUF	Estimated cost of electricity
(1)	(2)	(3)	(4)= (2)X(3)	(5)	(6) = (5) x (4)
1.		1.000	X1	1314000	
2.		0.901	X2	1300860	
3.		0.812	X3	1287720	
4.		0.731	X4	1274580	
5.		0.659	X5	1261440	
6.		0.593	X6	1248300	
7.		0.535	X7	1235160	
8.		0.482	X8	1222020	
9.		0.434	X9	1208880	
10.		0.391	X10	1195740	
11.		0.352	X11	1187067	
12.		0.317	X12	1178395	
13.		0.286	X13	1169723	
14.		0.258	X14	1161051	
15.		0.232	X15	1152378	
16.		0.209	X16	1143705	
17.		0.188	X17	1135033	
18.		0.170	X18	1126361	
19.		0.153	X19	1117689	
20.		0.138	X20	1109016	
21.		0.124	X21	1100343	
22.		0.112	X22	1091671	
23.		0.101	X23	1082999	
24.		0.091	X24	1074327	
25.		0.082	X25	1065654	

Total		9.351	X=X1+X2 + X3+ .. +X25		
Levelised Tariff for 25 years (in Rs /kWh)	Rs.....				
2. Quoted Project Cost / MW	Rs.....				

Note: In case of discrepancy in price bid (Excel file) and electronic form, the price mentioned in Excel file will prevail.

- a. The levelised tariff shall be calculated up to three decimal places. However in case of a tie it may be expanded to break the tie.
- b. Tariff stream quoted by the bidder shall be levelised with a discounting rate of 11% only.
- c. Bids not in conformity with above provisions will be rejected.

Yours faithfully,

Date: Signature of the Authorized signatory :.....

Place: Printed Name :

Designation:

Business Address:.....

.....

Country of Incorporation: (Common Seal).....

PRICE BID FOR RESCO (FOR PROJECTS RANGING above 25 kWp to 500kWp)**(PART- E) (Fixed and constant tariff for 25 years)****(To be submitted online separately)****EOI - RFS No: IPGCL/RFS-EOI-1/CAPEX-RESCO/04/ 2016 Date:****2. Evaluation on per MW basis:**

Year of Operation w.e.f. date of commercial operation to 31 St March of immediately succeeding financial year	Tariff (Rs/kWh) @ 5% uniform escalation	Discount Factor at 11%	Discounted Tariff (Rs/kWh)	Estimated generation per year per 1 MWp plant at 15% min CUF	Estimated cost of electricity
(1)	(2)	(3)	(4)= (2)X(3)	(5)	(6) = (5) x (4)
1.		1.000	X1	1314000	
2.		0.901	X2	1300860	
3.		0.812	X3	1287720	
4.		0.731	X4	1274580	
5.		0.659	X5	1261440	
6.		0.593	X6	1248300	
7.		0.535	X7	1235160	
8.		0.482	X8	1222020	
9.		0.434	X9	1208880	
10.		0.391	X10	1195740	
11.		0.352	X11	1187067	
12.		0.317	X12	1178395	
13.		0.286	X13	1169723	
14.		0.258	X14	1161051	
15.		0.232	X15	1152378	
16.		0.209	X16	1143705	
17.		0.188	X17	1135033	
18.		0.170	X18	1126361	
19.		0.153	X19	1117689	
20.		0.138	X20	1109016	
21.		0.124	X21	1100343	
22.		0.112	X22	1091671	
23.		0.101	X23	1082999	
24.		0.091	X24	1074327	

25.		0.082	X25	1065654	
Total		9.351	X=X1+X2+ X3+ .. +X25		
Levelised Tariff for 25 years (in Rs /kWh)	Rs.....				
2. Quoted Project Cost / MW	Rs.....				

Note: In case of discrepancy in price bid (Excel file) and electronic form, the price mentioned in Excel file will prevail.

- a. The levelised tariff shall be calculated up to three decimal places. However in case of a tie it may be expanded to break the tie. Levelised tariff cannot exceed Rs 5.10/unit
- b. Tariff stream quoted by the bidder shall be levelised with a discounting rate of 11% only.
- c. Bids not in conformity with above provisions will be rejected.

Yours faithfully,

Date: Signature of the Authorized signatory :.....

Place: Printed Name :

d. Designation:

Business Address:.....
.....

Country of Incorporation: (Common Seal).....

SECTION -V
FORMATS FOR SUBMITTING RFS

Covering Letter

(The covering letter should be on the Letter Head of the Bidding Company)

Ref.No. _____

Date:

From: _____ **(Insert name and address of Bidding Company)**

Tel.#: Fax#:

E-mail address#

To,
INDRAPRASTHA POWER GENERATION COMPANY LTD.
'HIMADRI', RAJGHAT POWER HOUSE COMPLEX,
RAJGHAT, NEW DELHI – 110 002.

Sub: EoI for the empanelment of vendors for “Design, supply, erection, testing and commissioning including warranty, Comprehensive operation & maintenance of grid interactive rooftop solar PV power plant of various capacities in the State of Delhi (for Part-A/ Part-B/ Part C/ Part- D/Part- E).

Dear Sir,

1. We, the undersigned....[insert name of the 'Bidder'] having read, examined and understood in detail the RFS Document for Implementation of Grid connected Roof Top Solar PV System Scheme hereby submit our Bid comprising of Price Bid and Techno Commercial Bid. We confirm that neither we nor any of our Parent Company / Affiliate/Ultimate Parent Company has submitted Bid other than this Bid directly or indirectly in response to the aforesaid RFS.
2. We give our unconditional acceptance to the RFS, dated.....and RFS Documents attached thereto, issued by IPGCL, as amended. As a token of our acceptance to the RFS Documents, the same have been initialed by us and enclosed to the Bid. We shall ensure that we execute such RFS Documents as per the provisions of the RFS and provisions of such RFS Documents shall be binding on us.
3. Bid Capacity: We have bid for the capacity of MWp for Part-A/Part B/Part C / Part D/Part E separately as per RFS terms and conditions.

4. Bid Bond: We have enclosed a Bid Bond of Rs.....(Insert Amount), in the form of bank guarantee no.....(Insert number of the bank guarantee) dated.....[Insert date of bank guarantee] as per Formatfrom(Insert name of bank providing Bid Bond) and valid up toin terms of Clauseof this RFS. The offered quantum of power by us is MWp in Part-A/Part-B/Part C/ Part D/ Part E. (Insert total capacity offered).

5. We have submitted our Price Bid strictly as per Section IV of this RFS, without any deviations, conditions and without mentioning any assumptions or notes for the Price Bid in the said format(s).

6. In case we are a Empanelled Vendor, we shall furnish a declaration at the time of commissioning of the Project to the affect that neither we have availed nor we shall avail in future any subsidy other than received from IPGCL for implementation of the project.

7. Acceptance:
We hereby unconditionally and irrevocably agree and accept that the decision made by IPGCL in respect of any matter regarding or arising out of the RFS shall be binding on us. We hereby expressly waive any and all claims in respect of Bid process.

We confirm that there are no litigations or disputes against us, which materially affect our ability to fulfil our obligations with regard to execution of projects of capacity offered by us.

8. 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 Bid and execute the RFS Documents, in the event of our selection as Successful Bidder. We further undertake and agree that all such factors as mentioned in RFS have been fully examined and considered while submitting the Bid.

9. Contact Person

Details of the contact person are furnished as under:

Name :
Address :
Phone Nos. :
Fax No. :
E-Mail :

10. We are enclosing herewith the Envelope-I (Covering letter, Processing fee and Bid Bonds etc as per clause 3.10.1.1.A of the RfS) (through Offline) and Envelope-II (Techno-Commercial documents) (through online) and Envelope III (Price Bids) (through online) containing duly signed formats, each one duly sealed separately, in one original as desired by you in the RFS for your consideration as per clause 3.10.1 of the RfS.

It is confirmed that our Bid is consistent with all the requirements of submission as stated in the RFS and subsequent communications from IPGCL. The information submitted in our Bid is complete, strictly as per the requirements stipulated in the RFS and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our Bid. We confirm that all the terms and conditions of our Bid are valid for acceptance for a period of 6 month from the Bid deadline. We confirm that we have not taken any deviation so as to be deemed non-responsive.

Dated the day of ,2016

Yours faithfully,

Signature:

Name:

Designation with Seal

Name, Designation and Signature of Authorized Person in whose name Power of Attorney/Board Resolution/Declaration (Annexure H).

General Particulars of the bidder (For Part-A,B only)

S. No.	Particulars	Details
1.	Name of the Company	
2.	Registered Office Address	
3.	E-mail ID	
4.	Web site	
5.	Authorized Contact Person(s) with name, designation Address and Mobile Phone No., E- mail address/ Fax No. to whom all references shall be made	
6.	Year of Incorporation	
7.	Have the bidder/Company ever been debarred By any Govt. Dept. / Undertaking for undertaking any work.	
8.	Reference of any document information attached by the Bidder other than specified in the RFS.	
9.	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	Yes/No
10.	Whether company is MSME as on the bidding date as per clause 3.35.9	Yes/No
11.	Whether the Company has valid Sales Tax Registration Number (PAN/TAN)	
12.	PAN number (enclosed a copy)	
13.	Bank Account Details	
14.	MNRE registration certificate (if the bidder is registered with MNRE)	Yes / No
15.	Whether the Self declaration is enclosed as per clause 3.4.3	Yes/No

Please strike-off whichever is not applicable.

Signature:

Name:

Designation with Seal:

General Particulars of the bidder (For Part-C,D,E)

S. No.	Particulars	Details
1.	Name of the Company	
2.	Registered Office Address	
3.	E-mail	
4.	Web site	
5.	Authorized Contact Person(s) with name, designation Address and Mobile Phone No., E-mail address/ Fax No. to whom all references shall be made	
6.	Year of Incorporation	
7.	Have the bidder/Company ever been debarred By any Govt. Dept. / Undertaking for undertaking any work.	
8.	Reference of any document information attached by the Bidder other than specified in the RFS.	
9.	Whether the Bidder wishes to form a Project Company for execution of work	Yes/No
10.	Bidding company is listed in India	Yes/No
11.	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	
12.	Whether company is MSME as on the bidding date as per clause 3.35.9	Yes/No

Please strike-off whichever is not applicable.

Signature:

Name:

Designation with Seal:

Format-A (Shareholding certificate)

Name of the Equity holder	Type and Number of shares owned	% of equity holding	Extent of Voting rights

(Signature of Authorized Signatory) With Stamp

(Signature of Company Secretary/Director/Chartered Accountant)

PROFORMA FOR BANK GUARANTEE FOR BID BOND

(To be submitted separately for Part-A, Part-B, Part-C, Part-D & Part-E)

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

Ref.:

Date:

Bank Guarantee No.:

To,

**INDRAPRASHTHA POWER GENERATION COMPANY LTD.
'HIMADRI', RAJGHAT POWER HOUSE COMPLEX,
RAJGHAT, NEW DELHI – 110 002**

In consideration of the ----- [Insert name of the Bidder] (hereinafter referred to as 'Bidder') submitting the response to RfS inter alia for selection of the Project of the capacity of MW [Insert Capacity of Plant] in response to the RfS No. _____ Dated by Indraprashtha Power Generation Company Limited (hereinafter referred to as IPGCL) and IPGCL 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 IPGCL at [Insert Name of the Place from the address of IPGCL] forthwith on demand in writing from IPGCL 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 Rs. 15 Lakhs per MW of cumulative capacity proposed in Group] only, on behalf of M/s. [Insert name of the Bidder] .

This guarantee shall be valid and binding on this Bank up to and including [insert date of validity in accordance with Clause 3.14 of this RfS] 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 in accordance with Clause 3.14 of this RfS]. IPGCL shall be entitled to invoke this Guarantee till ____ [Insert date which is 90 days after the date in the preceding sentence].

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

The guarantor bank acknowledged that this Bank Guarantee may be assigned by the IPGCL, in whole or in part (whether absolutely or by way of security) to the successor entity (ies) coming into being as a result of any merger or amalgamation or scheme of arrangement or similar re-organization of the IPGCL.

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

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

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at 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 Bank and accordingly IPGCL 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 IPGCL or to exercise, levy or enforce any distress, diligence or other process against the Bidder.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rs. (Rs. only) and it shall remain in force until [Date to be inserted on the basis of Clause 3.14 of this RfS] with an additional claim period of Ninety (90) days thereafter. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if IPGCL serves upon us a written claim or demand.

Signature
Name
Power of Attorney No.

For
[Insert Name of the Bank]
Banker's Stamp and Full Address. Dated this _____ day of _ , 20

Note: 1. (*) the amount shall be as specified in the Bid document.
(#) Complete mailing address of the Head Office of the Bank to be given.

The Bank Guarantee shall be from a Bank as per as define in Clause 2 of the Bid document

2. The Stamp Paper of appropriate value shall be purchased in the name of guarantee issuing Bidder/bank issuing the guarantee.

FORMAT FOR PERFORMANCE BANK GUARANTEE (PBG)

{To be submitted for the Allocated capacity for Part-A/Part- B/ Part-C/ Part-D/Part- E separately}

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

In consideration of the [Insert name of the Bidder] (Hereinafter referred to as selected Solar Power Developer') submitting the response to RfS inter alia for selection of the Project under **PART- A/Part-B/Part C/** Part-D/Part- E of the capacity of kWp / MWp under Roof Top scheme in response to the RfS no. dated issued by IPGCL and IPGCL considering such response to the RfS of insert the name of the selected Solar Power Developer] (which expression shall unless repugnant to the context or meaning thereof include its executors, administrators, successors and assignees) and selecting the Solar Power Project of the Solar Power Developer and issuing Letter of allocation no. to (Insert Name of selected Solar Power Developer) as per terms of RfS and the same having been accepted by the selected SPD 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 IPGCL at [Insert Name of the Place from the address of the IPGCL] forthwith on demand in writing from IPGCL or any Officer authorized by it in this behalf, any amount upto and not exceeding Rupees..... [total value] only, on behalf of M/s [Insert name of the selected Solar Power Developer / Project Company] This guarantee shall be valid and binding on this Bank up to and including..... 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.....

Our Guarantee shall remain in force until..... IPGCL shall be entitled to invoke this Guarantee till [Insert date which is 90 days after the date in the preceding sentence].

The Guarantor Bank hereby agrees and acknowledges that IPGCL 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 IPGCL, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to IPGCL.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by -----[Insert name of the selected bidder]. The Guarantor Bank shall not require IPGCL to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against IPGCL in respect of

any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at 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 Bank and accordingly IPGCL shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the selected Solar Power Developer / Project Company , to make any claim against or any demand on the Empanelled Vendor or to give any notice to the selected Solar Power Developer / Project Company or to enforce any security held by IPGCL or to exercise, levy or enforce any distress, diligence or other process against the selected Solar Power Developer / Project Company.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rs..... (Rs..... only) and it shall remain in force until [Insert date which is 90 days after the date in the preceding sentence]. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if IPGCL serves upon us a written claim or demand.

Signature

Name

Power of Attorney No.

For,

..... [Insert the bank name]

Banker's Stamp and Full Address.

Dated this day of , 2016

Witness:

1.

Signature

Name and Address

2.

Signature

Name and Address

Notes:

1. The Stamp Paper should be in the name of the Executing Bank and of appropriate value.
2. The Performance Bank Guarantee (PBG) shall be executed by any of the Bank from the List of Banks enclosed as per Annexure-B.

CHECK LIST FOR BANK GUARANTEES

Sl. No.	Details of checks	YES/NO.
a)	Is the BG on non-judicial Stamp paper of appropriate value, as per applicable Stamp Act of the place of execution	
b)	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. Also the Stamp Paper should not be older than six months from the date of execution of BG).	
c)	Has the executing Officer of BG indicated his name, designation and Power of Attorney No. / Signing Power no. on the BG?	
d)	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 Performa?	
e)	Does the Bank Guarantees compare verbatim with the Performa prescribed in the Bid Documents?	
f)	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	
g)	Whether overwriting/cutting if any on the BG have been properly authenticated under signature & seal of executants?	
h)	Contact details of issuing bank including email id, mobile number etc.	

POWER OF ATTORNEY

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

(a) Power of Attorney to be provided by the Bidding Company in favour of its representative as evidence of authorized signatory’s authority.

Know all men by these presents, We name and address of the registered office of the Bidding Company as applicable) do hereby constitute, appoint and authorize Mr./Ms (name & residential address) who is presently employed with us and holding the position of as our true and lawful attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of our Bid for implementation of grid connected Roof top solar PV scheme in response to the NIT No. dated issued by IPGCL, New Delhi including signing and submission of the Bid and all other documents related to the Bid, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which the IPGCL may require us to submit. The aforesaid Attorney is further authorized for making representations to the IPGCL, New Delhi and providing information / responses to IPGCL, New Delhi representing us in all matters before IPGCL, New Delhi and generally dealing with IPGCL, New Delhi in all matters in connection with Bid till the completion of the bidding process as per the terms of the above mentioned NIT.

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

All the terms used herein but not defined shall have the meaning ascribed to such terms under the NIT.

Signed by the within named

..... (Insert the name of the executants company)
through the hand of

Mr.

duly authorized by the Board to issue such Power of Attorney

Dated this day of

Accepted

.....

Signature of Attorney

(Name, designation and address of the Attorney)

Attested

.....

(Signature of the executant)

(Name, designation and address of the executant)

.....

Signature and stamp of Notary of the place of execution

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

Witness:

1.
Signature
Designation
Name and Address

2.
Signature
Designation
Name and Address

Notes:

The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and the same should be under common seal of the executant affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.

The person authorized under this Power of Attorney, in the case of the Bidding Company / Lead Member being a public company, or a private company which is a subsidiary of a public company, in terms of the Companies Act, 1956, with a paid up share capital of more than Rupees Five crores, should be the Managing Director / whole time director/manager appointed under section 269 of the Companies Act, 1956. In all other cases the person authorized should be a director duly authorized by a board resolution duly passed by the Company.

Also, wherever required, the executant(s) should submit for verification the extract of the chartered documents and documents such as a Board resolution / power of attorney, in favour of the person executing this power of attorney for delegation of power hereunder on behalf of the executant(s)

FINANCIAL ELIGIBILITY CRITERIA REQUIREMENT (AS PER CLAUSE 3.4)

(To be submitted on the letterhead of Bidding Company)

To,

**INDRAPRASTHA POWER GENERATION COMPANY LTD.
'HIMADRI', RAJGHAT POWER HOUSE COMPLEX,
RAJGHAT, NEW DELHI – 110 002**

Sub: Bid for Implementation of Grid connected Roof Top Solar PV System scheme in response to the RFS No:

Dear Sir,

We submit our Bid/Bids for the total capacity of MWp in Part C,D &E put together for which details of our Financial Eligibility Criteria Requirements are as follows.

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

- i. If the bidding company is more than one year old than they should have Annual turnover of Rupees 5.0 Crore per MW in any one of the last 3 financial years subject to the minimum annual turnover in the preceding financial year of Rupees 3.0 Crore / MW.
- ii. If the bidding company is one year old than they should have Annual turnover of Rupees 5.0 Crore per MW.

OR

Net worth (strike out whichever is not applicable) of Rs.....Crore computed as per instructions provided in Clause 3.4.2 of this RFS based on unconsolidated audited annual accounts (refer Note-1 below) any of the last 3 Years immediately preceding the Bid Deadline.

Name of Financially Evaluated Entity*	Relationship with Bidding Company**	Financial year	Year of Incorporation	Annual Turnover (Rs. Crore)	Net worth as per Clause 3.4.2 (in Rs. Crore)

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

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

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 certificate of relationship of Parent Company or Affiliate with the Bidding Company.

To,

.....

Sub: Bid for Implementation of Grid connected Roof Top Solar PV System Scheme.

Dear Sir,

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	Name of the Affiliate of the Bidding 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

*Strike out whichever is not applicable.

.....

(Insert Name and Signature of Statutory Auditor or practising 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,

.....

Dear Sir,

We refer to the RFS No.....dated.....for “Implementation of Grid connected Roof Top Solar PV System Scheme”.

“We have carefully read and examined in detail the RFS, including in particular, Clause of the RFS, regarding submission of an undertaking, as per the prescribed Format at Annexure.....of the RFS.

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

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

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 RFS, 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 RFS.

Signature of Authorized 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.....

CONSORTIUM AGREEMENT

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

THIS Consortium Agreement (“Agreement”) executed on this ____ day of ____ 2016 between M/s [insert name of Lead Member] ____ a Firm / Company incorporated under the laws of ____ and having its

Registered Office at ____ (hereinafter called the “Lead Member”, which expression shall include its successors, executors and permitted assigns)

and

M/s ____ a Firm / Company incorporated under the laws of ____ and having its Registered Office at ____ (hereinafter called the “Technical Member”, which expression shall include its successors, executors and permitted assigns), which expression shall include its successors, executors and permitted assigns)

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

WHEREAS the Indraprastha Power Generation Company Limited (hereinafter called IPGCL), Company incorporated under the Company’s Act, 1956 has invited response to RFS No. IPGCL/CAPEX/03/..... dated ____ for design, manufacture, supply, erection, testing and commissioning including warranty, operation & maintenance of Roof Top Solar PV power system in Delhi.

WHEREAS the RFS documents stipulates that the Lead Member may enter into a Technical Consortium Agreement with another Company / Corporate entity to fulfil the Technical Eligibility Criteria as stipulated in the RFS document. The Members of the Bidding Consortium will have to submit a legally enforceable Consortium Agreement in a format enclosed with the RFS document.

NOW THEREFORE, THIS AGREEMENT WITNESSTH AS UNDER:

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

1. We, the Members of the Consortium and Members to the Agreement do hereby unequivocally agree that (M/s _____), shall act as the Lead Member as defined in the RFS for self and agent for and on behalf of Technical Member _____.
2. The Lead Member is hereby authorized by the Technical Member of the Consortium to bind the Consortium and receive instructions for and on their behalf.
3. 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 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.

4. Subject to the terms of this Agreement, the Technical member shall be responsible for providing technical knowledge for Implementation of Grid connected Roof Top Solar PV System Scheme in Selected Roof Tops at GNCTD Schools in under MNRE schemes to the lead member.
5. In case of any breach of any commitment by any of the Consortium Members, the Lead Member shall be liable for the consequences thereof.
6. This Agreement shall be construed and interpreted in accordance with the Laws of India and courts at Delhi alone shall have the exclusive jurisdiction in all matters relating thereto and arising there under.
7. It is hereby further agreed that in case of being shortlisted, the Members do hereby agree that they shall abide by the terms & conditions of the RFS document.
8. It is further expressly agreed that this Agreement shall be irrevocable and shall form an integral part of the RFS submitted to IPGCL and shall remain valid till completion of the job assigned to the Contractor.
9. The Lead Member is authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Members respectively from time to time in the response to RFS.
10. 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 this agreement without the explicit permission of IPGCL.
11. 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 IPGCL.

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----- [Lead Member]

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

Witnesses:

1) Signature----- 2) Signature -----

Name:

Name:

Address:

Address:

For M/s----- [Technical Member]

(signature, Name & Designation of the person authorized vide Board Resolution

Dated

Witnesses:

1) Signature----- 2) Signature -----

Name:

Name:

Address:

Address:

DOCUMENTS REQUIRED FOR PROJECT SANCTION

Following documents will be required to be submitted for project sanction:

1. Agreement between the bidder and the owner of the Project and Building/Roof top (Notarized original agreement on stamp paper of appropriate value should be enclosed).
2. All Agreement shall generally have reference to the IPGCL's RFS No. and Letter of Allocation and provisions as per terms and conditions, technical specification and performance parameter in line with the IPGCL's RFS Document against which Letter of Allocation has been issued. In addition, it shall indicate the price / tariff payable by the roof top Owner to the developer, payment terms, completion period along with other conditions of contract like insurance, warranty, force majeure, arbitration, jurisdiction, governing law, site access for the developer, and, site access for IPGCL officials for the entire plant life, obligation of the roof top owner regarding providing of data to IPGCL as per the RFS Document etc.
3. No Objection Certificate from the concerned DISCOM for grid connectivity or CEIG approval (In case CEIG approval is suffice for grid connectivity). Undertaking of Empanelled Vendor on stamp Paper for indemnification of IPGCL shall be furnished in case approval of CEIG is only furnished for grid connectivity.

(Not mandatory during project identification, however mandatory for project commissioning/operation).

4. Summary Project Report (2-3 pages only) as per Format at Annexure G.
5. IPGCL Service Charges: DD/ Bankers cheque for an amount as per clause no. 3.10.1.1. (A), drawn in favour of IPGCL, New Delhi, payable at New Delhi against payment of IPGCL Service Charges.

Annexure B**List of Banks**

1. SCHEDULED COMMERCIAL BANKS	2. OTHER PUBLIC SECTOR BANKS
SBI AND ASSOCIATES	1. IDBI Bank Ltd.
1. State Bank of India	3. FOREIGN BANKS
2. State Bank of Bikaner & Jaipur	1. Bank of America NA
3. State Bank of Hyderabad	2. Bank of Tokyo Mitsubishi UFJ Ltd.
4. State Bank of Indore	3. BNP Paribas
5. State Bank of Mysore	4. Calyon Bank
6. State Bank of Patiala	5. Citi Bank N.A.
7. State Bank of Travancore	6. Deutsche Bank A.G
NATIONALISED BANKS	7. The HongKong and Shanghai Banking Corpn. Ltd.
1. Allahabad Bank	8. Standard Chartered Bank
2. Andhra Bank	9. Societe Generale
3. Bank of India	10. Barclays Bank
4. Bank of Maharashtra	11. Royal Bank of Scotland
5. Canara Bank	12. Bank of Nova Scotia
6. Central Bank of India	13. Development Bank of Singapore (DBS, Bank Ltd.)
7. Corporation Bank	14. Credit Agricole Corporate and Investment Bank
8. Dena Bank	4. SCHEDULED PRIVATE BANKS
9. Indian Bank	1. Federal Bank Ltd.

10. Indian Overseas Bank	2. ING Vysya Bank Ltd.
11. Oriental Bank of Commerce	3. Axis Bank Ltd.
12. Punjab National Bank	4. ICICI Bank Ltd.
13. Punjab & Sind Bank	5. HDFC Bank Ltd.
14. Syndicate Bank	6. Yes Bank Ltd.
15. Union Bank of India	7. Kotak Mahindra Bank
16. United Bank of India	8. IndusInd Bank Ltd
17. UCO Bank	9. Karur Vysya Bank
18. Vijaya Bank	
19. Bank of Baroda	

Annexure C

REFERENCE OF CALCULATION OF LEVELISED TARIFF

Year of Operation	Tariff (Rs/ kWh)	Discount Factor at 11%	Discounted Tariff (Rs/kWh)
(1)	(2)	(3)	(4)=(2)X(3)
Year 1 w.e.f. date of commercial operation to 31st March of immediately succeeding financial year		1.000	X1
Year 2 w.e.f. 1st April to 31 st March of immediately succeeding financial year		0.901	X2
Year 3 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.812	X3
Year 4 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.731	X4
Year 5 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.659	X5
Year 6 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.593	X6
Year 7 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.535	X7
Year 8 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.482	X8
Year 9 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.434	X9
Year 10 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.391	X10
Year 11 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.352	X11
Year 12 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.317	X12
Year 13 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.286	X13
Year 14 w.e.f 1st April to 31 st March of immediately Succeeding financial year		0.258	X14
Year 15 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.232	X15
Year 16 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.209	X16
Year 17 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.188	X17
Year 18 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.170	X18
Year 19 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.153	X19
Year 20 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.138	X20

Year 21 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.124	X21
Year 22 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.112	X22
Year 23 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.101	X23
Year 24 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.091	X24
Year 25 w.e.f 1st April to 31 st March of immediately succeeding financial year		0.082	X25
Total		9.351	X=X1+X2+ X3+.....+X25
Levelised Tariff for 25 years (in Rs / kWh)			

Note:

- a. The levelised tariff shall be calculated up to three decimal places. However in case of a tie it may be expanded to break the tie.
- b. Tariff stream quoted by the bidder shall be levelised with a discounting rate of 11% only.
- c. Proposals not in conformity with above provisions will be rejected.

Date:

Signature of the Authorized signatory

Place:

Printed Name.....

Designation:

Business Address :.....

Company Stamp):

Operation and Maintenance Guidelines of Grid Connected PV Plants

(Part C, D & E)

For the optimal operation of a PV plant, maintenance must be carried out on a regular basis.

All the components should be kept clean. It should be ensured that all the components are fastened well at their due place.

Maintenance guidelines for various components viz. solar panels, inverter, wiring etc. are discussed below:

3. SOLAR PANELS

Although the cleaning frequency for the panels will vary from site to site depending on soiling, it is recommended that

- i. The panels are cleaned at least once every fifteen days.
- ii. Any bird droppings or spots should be cleaned immediately.
- iii. Use water and a soft sponge or cloth for cleaning.
- iv. Do not use detergent or any abrasive material for panel cleaning.
- v. Iso-propyl alcohol may be used to remove oil or grease stains.
- vi. Do not spray water on the panel if the panel glass is cracked or the back side is perforated.
- vii. Wipe water from module as soon as possible.
- viii. Use proper safety belts while cleaning modules at inclined roofs etc.
- ix. The modules should not be cleaned when they are excessively hot. Early morning is particularly good time for module cleaning.
- x. Check if there are any shade problems due to vegetation or new building. If there are, make arrangements for removing the vegetation or moving the panels to a shade-free place.
- xi. Ensure that the module terminal connections are not exposed while cleaning; this poses a risk of electric shock.
- xii. Never use panels for any unintended use, e. g. drying clothes, chips etc.
- xiii. Ensure that monkeys or other animals do not damage the panels.

4. CABLES AND CONNECTION BOXES

- i. Check the connections for corrosion and tightness.
- ii. Check the connection box to make sure that the wires are tight, and the water seals are not damaged.
- iii. There should be no vermin inside the box.
- iv. Check the cable insulating sheath for cracks, breaks or burns. If the insulation is damaged, replace the wire
- v. If the wire is outside the building, use wire with weather-resistant insulation.
- vi. Make sure that the wire is clamped properly and that it should not rub against any sharp edges or corners.
- vii. If some wire needs to be changed, make sure it is of proper rating and type.

5. INVERTER

- i. The inverter should be installed in a clean, dry, and ventilated area which is separated from, and not directly above, the battery bank.
- ii. Remove any excess dust in heat sinks and ventilations. This should only be done with a dry cloth or brush.
- iii. Check that vermin have not infested the inverter. Typical signs of this include
- iv. Spider webs on ventilation grills or wasps' nests in heat sinks.
- v. Check functionality, e.g. automatic disconnection upon loss of grid power supply, at least once a month.
- vi. Verify the state of DC/AC surge arrestors, cable connections, and circuit breakers.

6. SHUTTING DOWN THE SYSTEM

- i. Disconnect system from all power sources in accordance with instructions for all other components used in the system.
- ii. Completely cover system modules with an opaque material to prevent electricity from being generated while disconnecting conductors.
- iii. To the extent possible, system shutdown will not be done during day time or peak generation.

INSPECTION AND MAINTENANCE SCHEDULE:

Component	Activity	Description	Interval	By
PV Module	Cleaning	Clean any bird droppings/ dark spots on module	Immediately	User/Technician
	Cleaning	Clean PV modules with plain water or mild dishwashing detergent. Do not use brushes, any types of solvents, abrasives, or harsh detergents.	Fortnightly or as per the site conditions	User/Technician
	Inspection (for plants > 100 kWp)	Use infrared camera to inspect for hot spots; bypass diode failure	Annual	Technician

Component	Activity	Description	Interval	By
PV Array	Inspection	Check the PV modules and rack for any damage. Note down location and serial number of damaged modules.	Annual	User/Technician
	Inspection	Determine if any new objects, such as vegetation growth, are causing shading of the array and move them if possible.	Annual	User/Technician
	Vermin Removal	Remove bird nests or Vermin from array and rack area.	Annual	User/Technician
Junction Boxes	Inspection	Inspect electrical boxes for corrosion or intrusion of water or insects. Seal boxes if required. Check position of switches and breakers. Check operation of all protection devices.	Annual	Electrician
Wiring	Inspection	Inspect cabling for signs of cracks, defects, loose connections, overheating, arcing, short or open circuits, and ground faults.	Annual	Electrician
Inverter	Inspection	Observe	Monthly	Electrician
Component	Activity	Description	Interval	By
		instantaneous operational indicators on		
Inverter	Service	Clean or replace any air filters.	As needed	Electrician
		Spot-check monitoring instruments		

		Inspect transformer oil level, temperature		
		Inspect gears, gear boxes, bearings as		
		Lubricate tracker mounting bearings,		
		Daily Operation and Performance		
Inverter	Inspection	Observe instantaneous operational indicators on the faceplate of the inverter to ensure that the amount of power being generated is typical of the conditions. Inspect Inverter housing or shelter for physical maintenance, if required.	Monthly	Electrician
Inverter	Service	Clean or replace any air filters.	As needed	Electrician
Instruments	Validation	Spot – check monitoring instruments (pyranometer etc.) with standard instruments to ensure that they are operational and within specifications.	Annual	PV Specialist
Transformer	Inspection	Inspect transformer oil level, temperature gauges, breather, silica gel, meter, connections etc.	Annual	Electrician
Tracker (if present)	Inspection	Inspect gears, gear boxes, bearings as required.	Annual	Technician
	Service	Lubricate tracker mounting bearings, gearbox as required.	Bi-annual	Technician
Plant	Monitoring	Daily Operation and Performance Monitoring	Daily	Site in charge
Spare Parts	Management	Manage inventory of spare parts.	As needed	Site in charge
Log Book	Documentation	Document all O&M activities in a workbook available to all service personnel	Continuous	Site in charge

Operation and Maintenance Guidelines of Grid Connected PV Plants (Part-A & B)

- i. Periodic cleaning of solar modules, preferably once every fortnight.
- ii. O&M of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.
- iii. Periodic checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.
- iv. Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required.
- v. Supply of all spares, consumables and fixtures as required. Such stock shall be maintained for all associated equipments and materials as per manufacturer/ supplier's recommendations.
- vi. All the equipment testing instrument required for Testing, Commissioning and O&M for the healthy operation of the Plant shall be maintained by the Bidder. The testing equipments must be calibrated once every 2 years from NABL accredited labs and the certificate of calibration must be kept for reference as required.
- vii. If negligence/ mal-operation on part of the Bidder's operator results in failure of equipment, such equipment should be repaired/ replaced by the Bidder free of cost.
- viii. If any jobs covered in O&M Scope as per RFS are not carried out by the contractor/ Bidders during the O&M period, the Engineer-In-Charge shall take appropriate action as deemed fit.
- ix. IPGCL reserves the right to make surprise checks/ inspection visits at its own or through authorized representative to verify the O&M activities being carried out by the Bidder. Failure to adhere to above guidelines will result in penal action including debarring from participation in next tender

Quality Certification, Standards and Testing for Grid-connected Rooftop Solar PV Systems/Power Plants

Quality certification and standards for grid-connected rooftop solar PV systems are essential for the successful mass-scale implementation of this technology. It is also imperative to put in place an efficient and rigorous monitoring mechanism, adherence to these standards. Hence, all components of grid-connected rooftop solar PV system/ plant must conform to the relevant standards and certifications given below:

Solar PV Modules/Panels	
IEC 61215/ IS 14286	Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
IEC 61701	Salt Mist Corrosion Testing of Photovoltaic (PV) Modules
IEC 61853- Part 1/ IS 16170: Part 1	Photovoltaic (PV) module performance testing and energy rating: Irradiance and temperature performance measurements, and power rating
IEC 62716	Photovoltaic (PV) Modules – Ammonia (NH ₃) Corrosion Testing (As per the site condition like dairies, toilets)
IEC 61730-1,2	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction, Part 2: Requirements for Testing
IEC 62804	Photovoltaic (PV) modules - Test methods for the detection of potential-induced degradation. IEC TS 62804-1: Part 1: Crystalline silicon (mandatory for applications where the system voltage is > 600 VDC and advisory for installations where the system voltage is < 600 VDC)
IEC 62759-1	Photovoltaic (PV) modules – Transportation testing, Part 1: Transportation and shipping of module package units
Solar PV Inverters	
IEC 62109-1, IEC 62109-2	Safety of power converters for use in photovoltaic power systems – Part 1: General requirements, and Safety of power converters for use in photovoltaic power systems Part 2: Particular requirements for inverters. Safety compliance (Protection degree IP 65 for outdoor mounting, IP 54 for indoor mounting)

IEC/IS 61683 (as applicable)	Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%, 25%, 50%, 75% & 90-100% Loading Conditions)
BS EN 50530 (as applicable)	Overall efficiency of grid-connected photovoltaic inverters: This European Standard provides a procedure for the measurement of the accuracy of the maximum power point tracking (MPPT) of inverters, which are used in grid- connected photovoltaic systems. In that case the inverter energizes a low voltage grid of stable AC voltage and constant frequency. Both the static and dynamic MPPT efficiency is considered.
IEC 62116/ UL 1741/ IEEE 1547 (as applicable)	Utility-interconnected Photovoltaic Inverters - Test Procedure of Islanding Prevention Measures
IEC 60255-27	Measuring relays and protection equipment – Part 27: Product safety requirements
IEC 60068-2 (1, 2, 14, 27, 30 & 64)	Environmental Testing of PV System – Power Conditioners and Inverters a) IEC 60068-2-1: Environmental testing - Part 2-1: Tests - Test A: Cold b) IEC 60068-2-2: Environmental testing - Part 2-2: Tests - Test B: Dry heat c) IEC 60068-2-14: Environmental testing - Part 2-14: Tests - Test N: Change of temperature d) IEC 60068-2-27: Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock e) IEC 60068-2-30: Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle) f) IEC 60068-2-64: Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance
IEC 61000 – 2,3,5 (as applicable)	Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC) testing of PV Inverters
Fuse	
IS/IEC 60947 (Part 1, 2 & 3), EN 50521	General safety requirements for connectors, switches, circuit breakers (AC/DC): a) Low-voltage Switchgear and Control-gear, Part 1: General rules b) Low-Voltage Switchgear and Control-gear, Part 2: Circuit Breakers c) Low-voltage switchgear and Control-gear, Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units d) EN 50521: Connectors for photovoltaic systems – Safety requirements and tests
IEC 60269-6	Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems

Surge Arrestors	
IEC 62305-4	Lightening Protection Standard
IEC 60364-5-53/ IS 15086-5 (SPD)	Electrical installations of buildings - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control
IEC 61643-11:2011	Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods
Cables	
IEC 60227/IS 694, IEC 60502/IS 1554 (Part 1 & 2)/ IEC69947	General test and measuring method for PVC (Polyvinyl chloride) insulated cables (for working voltages up to and including 1100 V, and UV resistant for outdoor installation)
BS EN 50618	Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables
Earthing / Lightning	
IEC 62561 Series (Chemical earthing)	IEC 62561-1: Lightning protection system components (LPSC) - Part 1: Requirements for connection components IEC 62561-2: Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes IEC 62561-7: Lightning protection system components (LPSC) - Part 7: Requirements for earthing enhancing compounds
Junction Boxes	
IEC 60529	Junction boxes and solar panel terminal boxes shall be of the thermo-plastic type with IP 65 protection for outdoor use, and IP 54 protection for indoor use
Energy Meter	
IS 16444 or as specified by the DISCOMs	A.C. Static direct connected watt-hour Smart Meter Class 1 and 2 — Specification (with Import & Export/Net energy measurements)
Solar PV Roof Mounting Structure	
IS 2062/IS 4759	Material for the structure mounting

Note: Equivalent standards may be used for different system components of the plants. In case of clarification following person/agencies may be contacted.

- Ministry of New and Renewable Energy (Govt. of India)
- National Institute of Solar Energy
- The Energy & Resources Institute
- TUV Rheinland
- UL

PROJECT REPORT FORMAT**Format for Summary Project Report for
Grid Connected Rooftop and Small SPV Power Plants**

1. Name of Bidder:
2. RfS no.
3. Project details (Site location & Address)
4. Brief about the Rooftop Solar Power Generation System
5. Details of the beneficiary
6. Specifications of the Components and Bill of Material/ Quantities

S. No.	Component	Specifications	Quantity	Make
A	Solar PV module			
A.1	Aggregate Solar PV capacity (kWp)			
B	Grid Tie inverter (Type and Capacity)			
B.1	Aggregate Inverter capacity (kVA)			
C	Module mounting structure (Certified by a Structural Engineer (Mandatory for 10 kWp to 500 kWp)			
D	Array Junction Box			
E	AC Distribution Board			
F	Cable (All type)			
G	Earthing Kit (maintenance free)			
H	Meters			
I	Online monitoring system			
J	Any other component			
K	Transformer			

7. Unit cost of solar power generation
8. Cost benefit analysis, payback period
9. Expected output/annum
10. Respective drawings for layout, electrical wiring connections, earthing, components etc.
11. Connectivity details with grid and metering arrangement (with sketch diagram)
12. Copy of electricity bill of the beneficiary and consumer number
13. Any other information
14. Documentary proof regarding beneficiary type as per clause 1.2 of the RfS

DECLARATION of AUTHORIZATION (For Part A & B only)

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

I/ We (name and address of the registered office of the Bidding Company as applicable) do hereby constitute, appoint and authorize Mr./Ms. (name & residential address) who is presently employed with us and holding the position of to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of our Bid for implementation of grid connected Roof top solar PV scheme in response to the NIT No dated issued by IPGCL, New Delhi including signing and submission of the Bid and all other documents related to the Bid, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which the IPGCL may require us to submit.

The aforesaid undertaking is further authorized for making representations to the IPGCL, New Delhi and providing information / responses to IPGCL, New Delhi representing us in all matters before IPGCL, New Delhi and generally dealing with IPGCL, New Delhi in all matters in connection with Bid till the completion of the bidding process as per the terms of the above mentioned NIT.

We hereby agree to ratify all acts, deeds and things done by our said undertaking pursuant to this undertaking and that all acts, deeds and things done by our aforesaid undertaking shall be binding on us and shall always be deemed to have been done by us.

All the terms used herein but not defined shall have the meaning ascribed to such terms under the NIT.

Signed by the within named

..... **(Insert the name of the executants company) Name: Company:**

Phone :

E-mail: Address :

Sincerely

Monthly O&M report

Month and year:

Name of the bidder:

RFS ref no.:

Project Capacity:

Address of the site:

Part A

Component	Activity	Description	Date	Name / Signature	*Remarks
PV Module	Cleaning	Immediately clean any bird droppings/dark spots on module.			
	Cleaning	Clean PV modules with plain water or mild dishwashing detergent.			
	Inspection (for plants > 100 kWp)	Infrared camera inspection for hot spots; bypass diode failure.			
PV Array	Inspection	Check the PV modules and rack for any damage.			
	Inspection	If any new objects, such as vegetation growth etc., are causing shading of the array. Remove if any.			
	Vermin Removal	Remove bird nests or vermin from array and rack area.			
Junction Boxes	Inspection	Inspect electrical boxes for corrosion, intrusion of water or vermin. Check position of switches and breakers. Check status of all			

Wiring	Inspection	Inspect cabling for signs of cracks, defects, loose connections, corrosion, overheating, arcing, short or open circuits, and ground faults.			
Inverter	Inspection	Observe instantaneous operational indicators on the faceplate. Inspect Inverter housing or shelter for any physical maintenance. Check for connection tightness.			
Inverter	Service	Clean or replace any air filters.			
Instruments	Validation	Verify monitoring instruments (pyranometer etc.) with standard instruments to verify their operation within tolerance limits.			
Transformer	Inspection	Inspect transformer oil level, temperature gauges, breather, silica gel, meter, connections etc.			
Plant	Monitoring	Daily Operation and Performance Monitoring.			
Spare Parts	Management	Manage inventory of spare parts.			
Log Book	Documentation	Maintain daily log records.			
Tracker (if any)	Inspection	Inspect gears, gear boxes, bearings, motors.			
	Service	Lubricate bearings, gear as required.			

*Provide details of any replacement of systems/components, damages, plant/inverter shut down (planned/forced), breakdown, etc under remarks.

*Daily register is to be maintained by the bidder at each location greater than 50 kWp. The same may be inspected by IPGCL or its authorized representative at any time 5 years of O&M period. The Register will have the information about the daily generation, Inverter downtime if any, Grid outages.

Part B

Date	Generation kWh	Grid outage (hh:mm)	Inverter down period (hh:mm)	Remarks
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				

Total generation for the month in kWh:

Cumulative generation since commissioning in kWh: CUF for month in %:

Cumulative CUF since commissioning in %:

Date:

Signature of the Authorised signatory of the Bidder

Project Completion Report for Grid-Connected Rooftop			
Financial year * :			
Approval No. * :			
Proposal Title :			
Installed by agency :			
Project initiated by :			
Title of the Project* :		Capacity (kWp)*:	
Category of the organization / beneficiary* :		Name of the contact person* :	
Address of contact person* :			
State* :		District / City* :	
Mobile* :		Email* :	
Telephone No. :	STD code-	Website :	
Other info			
Electricity Distribution Company Name :			
Electricity consumer account no. as per electricity bill :		as on Date :	
Bank Details of Beneficiary			
Name of A / c holder :			
Name of Bank :			
Name of Branch and Address :			
Bank IFSC Code :			
9 Digit Micr Code :			
Type of Account :			
Account No. :			
Adhar Card Number :			
Technology Description & System Design /Specification			
(Compliance to BIS/IEC Standards is mandatory)			
1. Module			
Capacity/Power of each PV Module(Wp)* :	1. Capacity/Power 2. Capacity/Power		1. Nos: 2. Nos:
Cumulative Capacity of Modules(KWp):			
Solar cell technology :			
Module efficiency (in Percentage) :			
2. Inverters			
Type of inverter :			
Make of inverter :			
Capacity/Power of each PCU / inverters (VA)* :	Capacity/Power Nos.		
Capacity/Power of PCU / inverters (KVA) :			

Inverter efficiency (Full load) :			
(in percentage)			
3. Metering Arrangement			
Details of Metering			
Type of Meter* :			
Make of Meter :			
5. Other information			
Units of electricity generated by the solar			
Monitoring Mechanism :			
No. of personnel to be trained in O&M			
Task & Expected Schedule(in Months)			
Grid connectivity level			
Grid connectivity level phase* :		Grid connectivity	
Costing of Project			
Hardware cost :	Rs.	Total Cost of	Rs.
Means of Finance			
Envisaged Central Financial	Rs.		
Subsidy from states if any	Rs.		
Contribution of Beneficiaries*	Rs.		
Other Source (s) of Funding	Rs.		