12.1.3 Coordination with other Departments.

For arranging right of way, if any, water supply and connecting infrastructure like roads etc Nodal agency will coordinate with other Government departments for expediting the setting up of Solar Projects.

12.1.4 Training

Develop appropriate skilled manpower by tying up with training and educational institutions.

12.1.5 Formulating of Subsidy Scheme available to installation of Rooftop Solar Power Plants in Residential Sector

Nodal Agency shall formulate scheme to provide for State subsidy as mentioned in Para 8.2.3(i).

13 R&D Activities

To promote awareness amongst researchers and to assist private sector in solving key issues related to reliability, adaptability of technology for Indian conditions with special reference to Uttar Pradesh ,the State Government shall set up Solar Research &Development, testing and standardization facility in two institutes/universities in UP.

14 Skill Development and Capacity Building*:*

To achieve the target of 100000 megawatt capacity of solar set by Government of India a large number of solar energy professionals will be required in the entire country and in the State. The Government of UP, through UPNEDA shall design training programs in association with National Institute of Solar Energy (NISE) to train electricians, mechanical

& civil experts on solar. Various skill development programs will be designed by UPNEDA and NISE and subsequently training will be imparted across the state. 10000 Suryamitra's will be prepared through these training programmes. Skills will be developed across segments including – installation, operation and maintenance of solar projects, testing of solar products, solar resource assessment, etc. UPNEDA will provide certifications under these development programs.

15 Benefits Related to other Departments of Government of U.P.

(i) Solar Power Plants set up for generation of electricity from Solar Energy will be accorded the status of "Industry" for the following special purpose:-

(a) No objection to be provided at the level of Commissioner on purchase of land more than 5.058 hectare under land ceiling by Project developer in interest of Public to set up Solar Power Plants for generation of electricity .

(b) 100 % exemption on chargeable stamp duty on setting up Solar Energy units in entire State of Uttar Pradesh

(c) Exemption from electricity duty for 10 years .

(ii) Solar PV projects shall be exempted from obtaining Environmental clearance.

(iii) Grid connected Solar PV Projects will be exempted from obtaining any NOC/ Consent for establishment and operation under pollution control laws from U.P. Pollution Control Board.

16. Concession in Electricity Tariff on setting up Industry in Bundelkhand Region:

Keeping in view the suitability of Bundelkhand region of the State for generation of power from Solar, it is expected that majority of the projects will be set up in this region. With the objective to reduce the transmission cost on transmission of generated Solar Power to other parts of the State such that the generated solar power is consumed in Bundelkhand region itself and for generation of employment in this region, industries that will be set up in this Bundelkhand region will be supplied with conventional power on concessional tariff.

17. Power to amend & interpret the policy

Government of UP will have power to amend/ review/relax/interpret any of the provisions under this policy as and when required.

Annexure -1

MINI GRID POLICY
UTTAR PRADESH
2016

1. PREAMBLE

Electric power and its easy availability is an established benchmark of development and an essential prerequisite for prosperity. No major economic activity can be sustained without adequate and reliable source of power.

In view of the fact that the conventional sources of energy are fast depleting and pose a threat of environment pollution too, the challenge before the State Government is not only to meet the ever growing demand for power but also to progressively increase the share of renewable energy sources in the power-mix so as to achieve overall energy security

The State of Uttar Pradesh is endowed with vast potential of solar and bio/biomass power and the Government is making efforts to tap these resources to improve the availability of power in the State by promoting renewable power projects. As a result of sustained efforts made under the rural electrification programme, only a few census villages remain unelectrified in the State. However, a large number of rural households are still deprived of electricity. Such households can be electrified through mini-grid from locally available renewable energy sources by decentralised power generation. A comprehensive policy framework is an imperative requirement to realize this goal. Therefore, the Government of Uttar Pradesh adopts and announces the Mini-grid Policy-2016 as under:

2. Objectives-

1. To promote decentralized generation of clean & green power by harnessing renewable energy e.g. Solar, Biomass etc in the State.

2. To put in place a conducive investment climate to stimulate private sector participation in decentralized generation of renewable power.

3. To provide ensured power supply to nearly 02 crore households in the State to meet the minimum household needs of power e.g. lighting, fan, mobile charging etc.

4. To reduce the investments required for development of long distance transmission lines and to reduce the line losses in power transmission resulting due to commonly low demand of electrical power in rural areas.

5. To spread environmental awareness among the general public.
6. To enhance skills and create employment opportunities at local level.
7. To promote establishment of local manufacturing facilities and socio-economic development of backward areas.
8. To build capacity in the State to initiate and sustain, use and effective management of newer technologies.
9. To make available clean and sustainable electrical power to large number of domestic, agriculture and commercial establishments which are deprived of conventional grid.
10. To reduce the consumption of fossil fuels.

3. Area of Operation

Mini-Grid projects shall be installed in un-electrified habitations/hamlets and in contiguous undeveloped and backward rural/urban areas deprived of conventional grid or with relatively less supply of electricity.

4. Operative Period

This Mini-Grid Power policy shall come into effect from date of its issuance and shall remain valid until superseded or modified for a periodof 10 yearswhich ever is earlier. Mini grid projects approved during the operative period alone shall be eligible for incentives declared under this policy.

5. Mini Grid Projects

5.1 Project Capacity:

Mini-Grid Projects of maximum capacity500 kW shall be installed to electrify the households of villages/ habitations/ hamlets which are un-electrified or are having unavailability of power in peak demand hours .

6. ImplementationPlan

Presently, private developers are setting up minigrid power projects in the State without the State subsidy. However, the implementation of such projects in the remote and economically weaker areas having poor infrastructural facilities, would need the support of the State subsidy. Therefore, the Mini-Grid Power Policy envisages the implementation of the Mini-Grid Projects in the following manners -

6.1 With State Government subsidy :

6.1.1 Project shall be installed in villages/Majrasidentified by UPNEDA/State Govt through the private developers.

6.1.2 As per the budget available from State govt. projects shall be installed and 30 % subsidy shall be provided.

6.1.3 Projects shall be established on Built Own Operate &Maintain(BOOM) basis and 10 years mandatory operation & maintenance shall be done by the developer.

6.1.4 Subsidy shall be provided by determination of VGF standard through Standard Bidding Document.

6.1.5 Restrictions:

6.1.5.1 The Land will be arranged by the Developers for the sanctioned Projects.

6.1.5.2 Mandatory daily 3 hours in the morning and 5 hours in the evening total at least 8 hours supply of electricity to all willing houses in the project area, as per their domestic demand.

6.1.5.3 Daily 6 hours supply of electricity for other production and commercial needs.

6.1.5.4 Remaining energy may be supplied to the other consumers by the developers.

6.1.5.5 Electricity Tariff: Developer will charge Rs. 50/- per month for load of 30 Watt, Rs.150/- per month for load upto 100 Watt for 8 hours of daily electricity supply and for the load more than 100 Watt tariff will be on mutual consent between consumers and developer..

6.1.5.6 Developer shall make the Electricity Distribution system as per the guidelines of Central Electricity Authority and UPPCL and Electrical safety & Security standards.

6.1.5.7 Developer shall get the benefits of incentives provided in Industrial Policy to other Infrastructural related support.

6.2 Self identified Projects by the Developers without State Govt subsidy:

No subsidy shall be provided on the Self identified Projects by the developers. Developer shall manage the arrangement of self owned land finance for establishment mini grid projects.

6.2.1 Distribution of generatedenergy:

Developer shall fulfil the energy needs for domestic use of willing families, agriculture works and small commercial establishments e.g. flour mills, shops, schools, hospitals, telephone towers, petrol pumps etc.

6.2.2 Distribution of energy by the developer will not be restricted.

6.2.3 Electricity Tariff:

Developer will be allowed to charge tariff from consumers onmutual consent basis.

6.2.4 Projectswithout subsidy shall also be eligible for the benefits of other Infrastructural related support, incentives provided in Industrial Policy and exit process in case of conventional grid access.

7.0 Exit process on the access of conventional grid in the villages/majras of the project.

The villages covered under the installed project shall be considered as last mile stone infrastructure and on the access of conventional grid following two exit procedures will be followed:

7.1 The energy generated from the plant will be received in the grid by DISCOM at the tariff decided by Uttar Pradesh Electricity Regulatory Commission/

tariff decided on mutual consent. Project developer will be given priority for authorisation as a franchisee by Discom

7.2 Based on the cost benefit analysis of the installed project, the project will be transferred to the DISCOM at the cost determined on mutual consent between DISCOM and developer by the estimation of cost / profit loss of the project installed by the developer.

8. Period of implementation of Mini Grid Projects:

The sanctioned projects based on solar energy shall be completed within 6 months, Biomass /Biogas based projects within 9 months, wind energy and small hydro power projects within 01 year. 6 months time extension may be granted for delay due to actual/natural reasons at various levels.

9. Restrictions for the use of of fossil fuel:

Use of fossil fuel e.g. coal, gas, lignite, Kerosene, wood etc shall be prohibited in solar thermal based projects. In Biomass based projects use of fossil fuel will be permissible as per the standard of Govt. of India. In absence of requisite solar energy, the Genset can be used to charge the battery bank etc in Solar Photovoltaic Plants. However compliance of environmental standards shall be ensured.

10. Operation of Projects:

Developers/ Cooperative institutions/Community institutions will have sufficient technical skilled man power to ensure the installation, operation & maintenance of project and impart training as per the standards and specifications of State Govt. and Govt of India.

11. Single Window Clearance:

UPNEDA will act as the Nodal Agency for Single window clearance for all Mini Grid Projects which include the task related to issuance and facilitation of desired Government orders, necessary sanctions/permissions, clearances, approvals, consent etc. in a time bound manner.

12. Role of Nodal Agency:

As per the objective of the policy, UPNEDA will provide following facilities for assistance to the project developers:

12.1 Other Infrastructure support:

Right of way if any, water supply and related infrastructure e.g. road, transmission lines or other facility will be provided by the District Magistrates of concerned districts.

12.2 Training:

Training of Users, operators of minigrid projects and other concerned, development of appropriate skilled man power by tying up with the concerned institution.

12.3 To ensure the online monitoring with facility of quarterly functionality report for the projects which are greater than 50 kW capacity and installed with Government subsidy.

12.4 Land use, environment and stamp duty related incentives will be provided to for the sanctioned projects under Uttar Pradesh State Industrial Policy,2012 of industries based on solar energy or renewable energy.

13. Monitoring:

Govt. of Uttar Pradesh, Department of Additional Energy Sources, UPNEDA shall ensure the monitoring of the projects.

13.1 High Level Committee

To oversee, monitor and resolve various issues arising out of this policy, an High Level Committee will be constituted under the chairmanship of the Chief Secretary of the State. The committee will have the following members:-

Chief Secretary	-Chairman
Infrastructure & Industrial Development Commissioner	- Member
Secretary /Principal Secretary, Additional Energy Sources	- Member
Secretary /Principal Secretary, Finance	- Member
Secretary /Principal Secretary, Planning	- Member
Secretary /Principal Secretary, Industry	- Member
Secretary /Principal Secretary, Revenue	- Member
Secretary /Principal Secretary, Energy	- Member
Managing Director, UPPCL	- Member
Managing Director, UPPTCL	- Member
Managing Director, Concerned DISCOM	- Member
Director, UPNEDA	– Member Secretary

13.2 FREQUENCY OF MEETINGS

The committee shall meet on a quarterly basis and also as and when required.

13.3Functions of the High Level Committee

The committee will deliberate and decide on the following issues-

13.3.1 Permission of Targets and Subsidy for Projects:

Granting Approval of Annual Targets and subsidy amount for Mini-grid Projects.

13.3.2

13.3.3 Monitoring of single window:

Monitoring of working of single window system.

13.3.3 Coordination :

Resolve any other Inter departmental issues that may arise from time to time.

13.3.4 Other

Any other relevant matter.

HINDUSTAN PETROLEUM CORPORATION LIMITED

UNNAO LPG BOTTLING PLANT
PLOT B/8-14, ROAD NO. - 13, SITE II,
UPSIDC INDUSTRIAL AREA,
UNNAO - 209801

TENDER DOCUMENT
FOR

SUPPLY INSTALLATION AND COMMISSIONING OF 50 KW SOLAR PLANT

TO

NORTH CENTRAL LPG BUILDING, NEHRU ENCLAVE, LUCKNOW

Tender No. - 21000008/HB/12105

1.0 BRIEF SCOPE OF WORK:

Design, Engineering, procurement & supply, erection, commissioning of On-Grid and Off-Grid-Interactive Solar PV Power System along with Comprehensive Operation & Maintenance for 5 (Five)Years including supplying of spares and consumables from the Commissioning date(CoD) at North Central LPG Zone, Lucknow.

2.0 BQC-FINANCIAL:

Average Annual Financial Turnover during the last 3 years, ending with 31st March 2021 should be of minimum value as per Column (A) above table-1 against each of the schedule .Average turnover shall be determined by summing up the annual turnover of each of the 3 financial years and dividing the sum by three. In the event a bidder does not have any turnover in any one or two of the years of the stated Financial years, the turnover for that/those years shall be taken as zero and the average turnover shall be calculated to determine the conformity to the turnover criteria.

BQC-Technical:

*Similar Job shall mean that the bidder should have successfully designed, supplied, tested and commissioned a Grid Connected Ground Mounted or Roof Top Solar Photovoltaic plant under net metering policy or any other policy of the state or central government for evacuation of Solar PV energy to the grid during the last seven years ending on 31.03.2021, satisfying in any one of the minimum order value criteria of BQC-Technical as per Column (B or C or D) –

TABLE-1

BQO-Financial	BQO-Technical Criteria			
(A)	(B)	(C)	(D)	
AVG. FINANCIAL TURN OF Rs 40 Lakhs or more OVER FOR LAST THREE FINANCIAL YEARS ENDING 31.03.21	SINGLE ORDER OF SIMILAR JOB COSTING MINIMUM VALUE OF Rs 80 Lakhs or more	TWO SIMILAR JOB EACH COSTING MINIMUM VALUE OF Rs 60 Lakhs or more	THREE SIMILAR JOB EACH COSTING MINIMUM VALUE OF Rs 40 Lakhs or more	

I. The bidder should have successfully designed, supplied, tested and commissioned a Grid Connected Ground Mounted or Roof Top Solar Photovoltaic plant under net metering policy or any other policy of the state or central government for evacuation of Solar PV energy to the grid.
II. Evaluation shall be carried as a single schedule.
III. In case bidder wants to participate for two or more schedules, then the combined Credentials of schedules will be considered for opening of techno commercial bids and the bids will opened in the sequence of schedule 1, 2, 3, 4 and 5.

The Bidder should submit completion certificates mentioning the details of value of Completed purchase orders meeting the PQC-Technical criteria from the user firms on their letterhead to whom the supply/service rendered. Gross delivered amount (i.e. amount inclusive of all taxes and duties) of the purchase order/work order will be considered for calculating the PQC values.

Copies of Excise, Tax invoice, GST invoice. Customs document, purchase order, purchase agreement and relevant pages of contract as applicable as supporting documents to be submitted in support of the above claims and copies submitted shall be duly notarized. For meeting Bid Qualification Criteria, bidders should submit **notarized copies** of purchase orders/ work orders / Contract Agreements and Completion certificates issued by clients as well as **notarized copies** of Audited Profit and Loss account statements as sought for meeting PQC, duly certified by Chartered Accountants. All the documents that are submitted in support of Bid Qualification Criteria, shall be in English and notarized. Those documents, which are not in English, shall be translated and certified by competent authority.

Introduction:

Hindustan Petroleum Corporation Limited (HPCL) is a Government of India Enterprise with a Navratna Status, and a Forbes 2000 and Global Fortune 500 company. HPCL has its zonal office at Plot No 1, Nehru Enclave, Gomti Nagar, Lucknow-226030.

Contact Persons at Plant for technical clarifications and site related queries

1. Pulasti Kumar, Asst. Manager, LPG SBU- NCZ, Mobile: 7572054222, Email: pulasti.kumar@hpcl.in

Total Output required is 50Kw (including all four installations) vide-

Presently at North Central LPG Zone, we have four different electricity connection meters - (with account ID as 0081790000, 9813101000, 2586480000, and 4150580000) given by Madhyanchal Vidyut Vitran Nigam Ltd in the name of M/s Hindustan Petroleum Corporation Limited.

The sanctioned loads for the mentioned four meters are 15 KW, 16KW, 8KW and 8KW respectively.

The overall quoted rate should include the AMC charges for a period of two years from the date of commissioning which has to be done quarterly.

As per UP policy of Solar Panel 2017, we can have max of 100% grid connected solar panel of the sanctioned load and hence total grid connected solar panel installation will be 47KW and 3KW off-grid which be in total of 50KW as below -

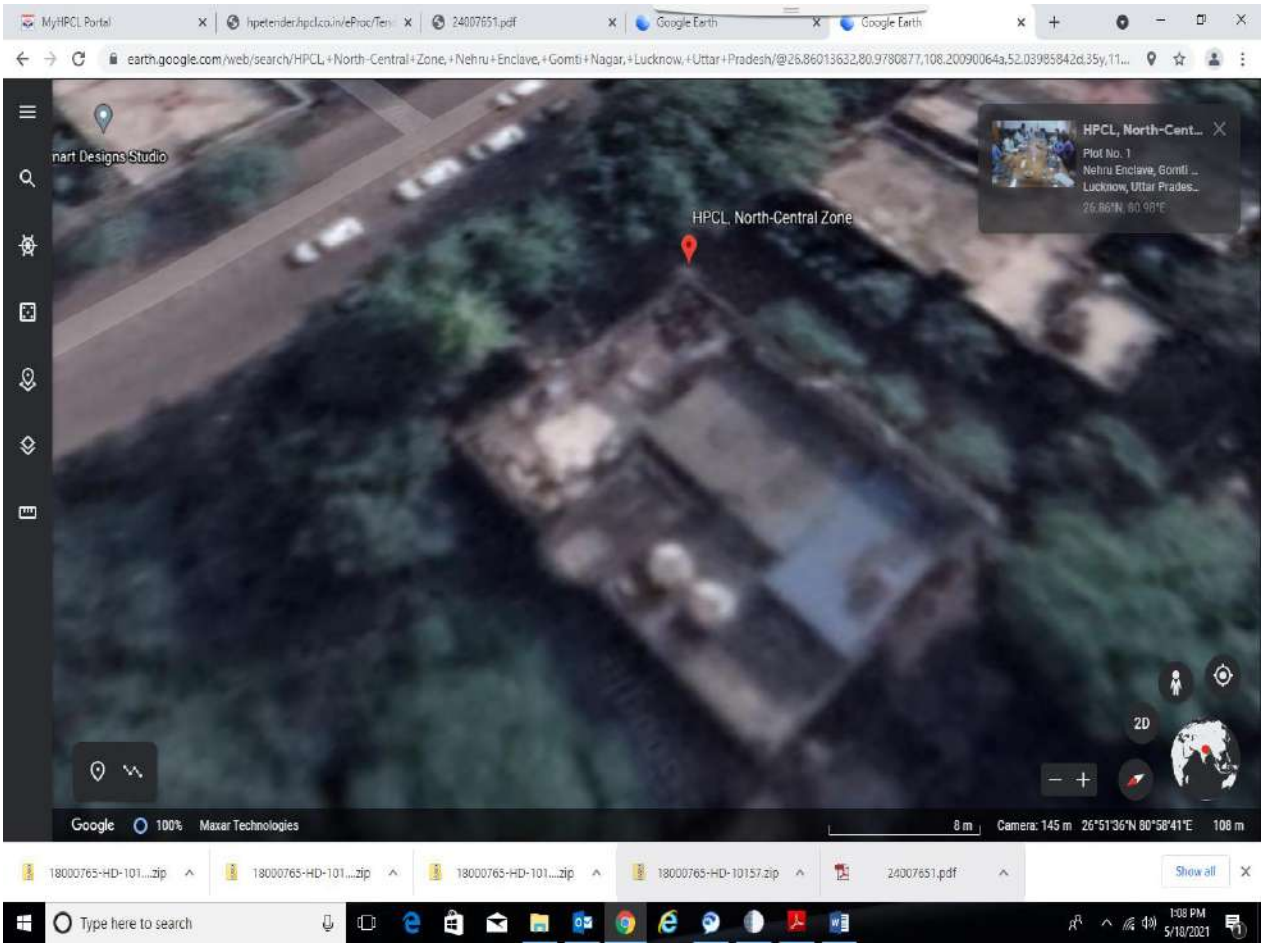
1) Line No 1 - One 15 KW Grid connected with meter having account ID 0081790000

2) Line No 2 - One 16 KW Grid connected with meter having account ID 9813101000

3) Line No 3 - Two 8 KW Grid connected with meter having account IDs 2586480000, 4150580000 resp.

4) Line No 4 - One 3 KW Off-Grid

5) Line No 5 - Provision for data loggers along with Wi-Fi based arrangement for remote system performance monitoring through mobile/web of oll the solar panels in thru integrated system.



Scope of Work & Services for Design, Supply, Installation & Commissioning:

1. The Interactive Solar PV Power Generating System to be Designed, Supplied, Installed & Commissioned at the HPCL location roof mounted plant. The DC Capacities and minimum AC Capacity of 50kW in total.
2. The scope of work and services includes but is not restricted to the following:
3. Design, Supply, Installation, Commission testing and 5 years comprehensive Operation & Maintenance of the respective Solar PV Power Plant**.**

a. Solar Modules of adequate quantity to meet the design requirements.
b. The Solar Module Mounting structure adequately designed to meet the technical requirements along with frames, purlins, rafters, sag rods and foundations with foundation bolts and other accessories.
d. Grid Interactive String Inverters with Surge Protection Devices (SPD) either within the inverter or externally mounted in Array Junction Boxes.
e. Array Junction Boxes, if required.
f. Solar DC Copper Cables

g. LT Power and Control Cables including end terminations and required accessories for AC & DC power.
h. Data logger for remote data monitoring along with Ambient Temperature Sensor, Module Temperature Sensor, Solar Irradiance Sensor and Wind Sensor.
i. Inverter Interaction Panel/s with AC SPD's.
j. Grid Interaction Panel/ Solar L.T Panel with SPD's, Digital Display of PF, Current, Voltage, Energy in KWh.
k. Communication cable sand other control cables.
l. Lighting Arrestors and Protection system, earthing kits and earthing systems.
m. PVC Pipe, trenches, Cement Pipes and accessories as required by design.
n. Pathways around the Solar Site and upto inverter and ACDB/ LT Panels locations.
o. Fencing along the perimter of the Solar PV Yard with gate as per site requirement.
p. RCC Room / Enclosure for housing Inverters, Solar LT panel or other equipment.
q. HT Metering cubicle, CT's, PT's, Bidirectional Net Energy Meter as per guidelines of Local DISCOM and net metering policy. Necessary Check meter and accessories as per Local DISCOM requirements and as per net metering policy.
r. Solar LT Metering Cubicle/s along with suitable CT's, PT's etc as per Local DISCOM requirements and as per net metering policy.
s. Liasoning and seeking permissions from local DISCOM for connecting the Solar PV Plant to the DISCOM Electrical Network.
t. Liasoning and seeking permissions / approvals from CEIG/ Electrical Inspectors office for setting up the Grid Interactive Solar PV Power Generating System.
u. Liasoning and seeking permissions from any other Government department for setting up and running of the Grid Interactive Solar PV Power Generating System.
v. Fire extinguishers, danger plates, name board etc.
w. Transportation, loading, unloading of all materials, equipments etc.
x. Training of HPCL nominated executives and technicians.
y. Testing equipments/ material for maintenance, monitoring and regular up keeping of the Solar PV Power Generating system.

4. The selected supplier shall submit the detailed design of the complete Solar PV Power Generation systems using PV SYST software to optimize the combination of modules considering the location, insolation nature of load etc. The weather data should be acquired from the latest version of Meteonorm software.
5. Civil Works shall be performed with respect to the following but not limited to
a. Site Grading, Levelling, landfilling, compacting, clearing of vegetation if required.
b. Construction of suitable foundation for Module Mounting structure having modules fixed at fixed tilt angle.
c. Trenching for cable laying and water piping with necessary sealants / adhesives/ cement binders etc.
d. Manholes for maintenance work at regular intervals for Cables and water pipes.
e. Civil work for Mounting AC Distribution Panels/ Inverter Interaction Panels in field.
f. Water Storage Tanks for Module cleaning.
g. Civil work for Earth chambers and Lightning Arrestors.

6. Installation work shall be performed with respect to the following but not limited to:
a. Clamping and securing the Solar Modules on the MMS frame / purlins.
b. Installation of String Inverters, Switchgears, AC Distribution Panels/ Inverter Interaction Panels, Solar LT Panels etc.
c. Installation and laying of DC and AC cables through Conduit pipes / Hume Pipes/ Cement pipes with proper sealing.
d. Installation of Cable trays, supports, brackets, Lighting Arrestor. Testing of all strings, DC inputs, Control Panels, AC & DC Terminations, Solar LT Panels , Communication systems, earth pits, etc. and commissioning of the Solar PV Power Plant.
8. Obtaining CEIG clearance form Electrical Inspectors office as per Government rules and with any other government department for setting up the Solar PV Power Plant.
9. Application and seeking permission approval from local DISCOM for net metering arrangement as per rules and regulations. Testing of Energy meters (HT, LT Check meter), CT's , PT's, metering Kiosks as per directive of local DISCOM and /or electrical inspector or any concerned office. Net metering agreement between DISCOM and HPCL to be ensured by the selected bidder.
10. Submission of following documents, drawings, Datasheets, design and engineering information to HPCL or its authorized representative for approval in 3 copies.
a. Datasheets of all equipment / components.
b. Design calculation for LA, Switchgears, cable, Busbars, Earthing pits selection.
c. All Layout drawings
d. Wiring drawings
e. SLD's
f. PVSYST report
h. Foundation report approved by Structural engineer
i. Module Mounting structure wind speed calculations approved by Structural engineer.
j. O&M Manuals
k. Test reports of all equipments and components.
11. Establishing a system to maintain an inventory of spare parts, tools, testing equipments, consumables and other supplies that would be used to facilitate the daily operation of the Solar PV Plant.
12. The installation shall be carried out by the selected bidder or his licensed electrical contractor holding a valid license as required by the State Government Authorities. All skilled labors like electricians, welders, fitters etc should possess valid certificates / licenses as applicable by local authorities.
13. The selected bidder shall provide the necessary drawings and documents required by statutory authorities and obtain approval before commencement of installation work. It shall be the sole responsibility of the selected bidder to obtain safety certificate/ approval from local statutory authorities.
14. Any modification in the equipment or installation that may be demanded by the inspecting authorities shall be carried out by the selected bidder at no additional cost to HPCL.
15. Clearing the site of after installation work should be carried out by the selected bidder. The site during construction stage should also be regularly cleaned of any unwanted material/ plastic packaging/ boxes etc.

16. The selected bidder shall furnish a schedule of inspection / testing of major equipment so that
HPCL may send its representative to witness the tests. All equipment testing/ inspection reports, factory test reports, site commissioning report should be furnished by the selected bidder upon completion of installation and commissioning of the project. However, this shall not absolve the responsibility of the bidder on providing the performance guarantee/ warrantee.
18. HPCL team and /or its authorized representative may carry out physical inspection of all material delivered at site.
19. All equipment, components and material supplied should adhere to the latest version of international / national standards. (Certification given in technical specifications section)
20. Any other item not specifically mentioned in the specification but which are required for installation, commissioning and satisfactory operation of the Solar Power plant are deemed to be included in the scope of the specification unless specifically excluded on turnkey basis.

Summary of activities is as given below:

SUMMARY OF ACTIVITIES

A	Approvals	Vendor	HPCL
1	All the documentation work related approval, clearance, submission from various State or govt. or any other legal authority to successful implementation and commissioning of the project. This includes permissions from CEIG, CEA (if required), Forest department, Electricity Board for net metering, any local bodies etc.		√ (HPCL will provide only supporting document)
2	PESO Approval		√
B	**General Works**		
1	Contour & topography in AutoCAD with kmz at site as per signed off boundary coordinates between EPC and HPCL, SBC with Angle of friction, Cohesion and unit weight, chemical properties of Soil, ERT, CBR, Water sample testing	√	
2	Transit insurance, Workmen compensation, EAR insurance	√	
3	Handling Local issues (if any) for EPC Scope of Work	√	
4	Land development, Tree's cutting, bushes clearing for Complete plant area	√	
5	Construction Power and Water	√	
6	Temporary storage, security and manpower basic amenities	√	
7	Health, Safety and Environment Standards	√	
C	**Supply, Design, Installation, Testing & Commissioning**		

	DC Part		
1	Supply of Photovoltaic Module	√	
2	Unloading at site, storage, inter carting, shipping on desired location from storage yard, Security and Installation of Photovoltaic Module	√	
3	Responsibility of Disposal of PV cartoons and any packing material	√	
4	Interconnecting Cables for PV Modules 4 sq. mm and 6 sq. mm as per design concept with supply of UV Resistance cable tie	√	
5	DC Connectors and termination kits and tools	√	
6	Cable Trench for DC Cable	√	
7	DC side Earth Pit (As per detailed engineering)	√	
8	PV Module Earthing	√	
9	MMS Earthing	√	
10	Inverter Body/Dedicated Earthing	√	
11	ESE Lighting Arrester Earthing	√	
12	Chain Link fencing with Gate and Fence Earthing	√	
13	Weather Monitoring System-Meteorological station with sensors and data logger with its fixing arrangement including pyranometer, anemometer, temperature sensor, ambient temperature sensor etc.	√	
14	Complete DC Yard Earthing	√	
15	ESE Lightening Arrester	√	
16	Cable termination and jointing kits (Indoor/Outdoor)	√	
17	Cable Tray along with Support structure/HDPE Pipe/Hume Pipe/Conduits for cable laying wherever required	√	
18	Connection accessories – lugs, ferrules, glands etc.	√	
19	Module Mounting Structures (Fix/ Seasonal Tilt structure) with associated accessories and Hardware fasteners	√	
20	Associated civil foundations for MMS	√	
	AC Part	√	
1	Supply of Power On Grid Inverters with Remote Monitoring and data logging	√	
2	Unloading at site, storage, inter carting, shipping on desired location from storage yard, Security and Installation of Inverter	√	
3	Supply of Inverter Interaction Panels (IIP)	√	
4	Trenching cable laying between inverter to IIP's to ACDB/ Main LT Panel upto grid point as per requirement of Utility for net metering	√	
5	Cable Tray along with Support structure/HDPE Pipe/Hume Pipe/Conduits for	√	