

File No.: VIS(2023-24)-PL298-247-354

Dated: 11-09-2023

# LENDER'S INDEPENDENT ENGINEER'S REPORT

OF

## 3.24 ( $\pm 10\%$ ) MWp GRID CONNECTED ROOF- TOP SOLAR POWER PLANT

PROPOSED TO BE SET-UP AT

GOVERNMENT MEDICAL COLLEGE, SIROHI, RAJASTHAN

&

RACL GEARTECH LIMITED, UPSIDC INDUSTRIAL AREA, GAJRAULA, U.P.

&

VACANT DDA LAND OPPOSITE MILLENNIUM PARK, SARAI KALE KHAN, NEW  
DELHI

DEVELOPER:

■ Corporate Valuers

■ Business/ Enterprise/ Equity Valuations

■ Lender's Independent Engineers (LIE)

■ Techno Economic Viability Consultants (TEV)

■ Agency for Specialized Account Monitoring (ASM)

■ Project Techno-Financial Advisors

■ Chartered Engineers

■ Industry/ Trade Rehabilitation Consultants

■ NPA Management

■ Panel Valuer & Techno Economic Consultants for PSU  
Banks

M/S OPWR DEL SPV PRIVATE LIMITED

REPORT PREPARED FOR

STATE BANK OF INDIA, SME, SOUTH EXTENSION, SOUTH DELHI

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report will be considered to be correct.*

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# LIE REPORT

3.24 (± 10%) MWp GRID CONNECTED  
SOLAR POWER PLANT

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## PART A

## REPORT SUMMARY

1.	Name of the Project	3.24 (±10%) MWp Grid Connected Solar Power Plant
2.	Project Location	<p><b>a. DDA, Sarai Kale Khan-</b> Vacant DDA Land opposite Millennium Park, Sarai Kale Khan, New Delhi GPS Coordinates– 28°35'42.1"N 77°15'32.2"E</p> <p><b>b. RACL, Gajraula-</b> M/s RACL Geartech Limited, A-3, UPSIDC Industrial Area, Gajraula, Uttar Pardesh GPS Coordinates– 28°48'55.3"N 78°13'38.8"E</p> <p><b>c. Sirohi, Rajasthan-</b> Government Medical College, Kolar, Sirohi, Rajasthan 307043 GPS Coordinates– 24°57'31.5"N 72°53'08.8"E</p>
3.	Seller Company	M/s OPWR DEL SPV Private Limited
4.	Prepared for Organization	State Bank of India, SME, South Extension, New Delhi
5.	LIE Consultant Firm	M/s. R.K. Associates Valuers & Techno Engineering Consultants (P) Ltd
6.	Date of Survey	NA
7.	Date of Report	11-09-2023
8.	Details & documents provided by	Mr. Mohit Jangra; Assistance Manager Finance and Accounts M/s Oriana Power Pvt. Ltd.
9.	Report Type	Lender's Independent Engineering Report
10.	Purpose of the Report	Review of Project cost, CUF and Irradiation Data to facilitate bankers to take business decision on the Project.
11.	Scope of the Report	To review Project cost and examine the current status of installation/ Commissioning of the Project.
12.	Documents produced for Perusal	<p>a. Copy of Power Purchase Agreements (PPAs)</p> <p>b. Copy of Techno-Commercial offer from OPPL to OPWR DEL SPV Pvt. Ltd.</p> <p>c. Copy of Plant Layout</p> <p>d. Copy of PV Syst reports</p>
13.	Annexure with the Report	<ul style="list-style-type: none"> <li>Benchmark Cost by MNRE</li> <li>Market Comparables</li> <li>Global Solar Atlas by World Bank Group</li> <li>Layout Plans</li> </ul>





**PART B****INTRODUCTION**

- 1. NAME OF THE PROJECT:** 3.24 ( $\pm 10\%$ ) MWp Grid Connected Solar Power Plant in RESCO Model to be installed at 3 locations which are described in Part A.2 above by M/s OPWR DEL SPV Pvt. Ltd.
- 2. PROJECT OVERVIEW:** M/s OPWR DEL SPV Pvt. Ltd. is a SPV of M/s Oriana Power Private Limited (OPPL) which is an associate company of Trinix Impex & BCS Switchgear Industries. It is a MNRE approved channel partner and into the business of Solar EPC / Design & Supply of BoS (Balance of System – Module Mounting Structure, LT/ ACCB/ ACDB/ DCCB Panel, Weather Monitoring Sensors, LA, Earthing, Cable Tray, etc.) for PV Solar Plants in India.

M/s OPWR DEL SPV Pvt. Ltd. (hereinafter referred to as "Power Producer") in March, June & July 2023 signed 3 nos. of Power Purchase Agreement (PPAs) with different purchaser for Design, Manufacture, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance of 2 roof-top & 1 ground mounted solar power plants at their respective locations having a total DC capacity of 3.24 ( $\pm 10\%$ ) MWp for 25 years of plant operation/ PPA tenure.

For the implementation of the subject project, M/s OPWR DEL SPV Pvt. Ltd. has engaged its parent company M/s OPPL for the design, supply, erection, commissioning of Roof Mounted Grid Tie Solar PV plant (Subject Project)

In this respect M/s OPPL has shared a Techno-Commercial offer to M/s OPWR DEL SPV Pvt. Ltd. which is deemed to be accepted, as per the verbal information shared by the management of the subject company. However no contract agreement has been signed between both in this regard. As per the same, the total project cost is estimated at a price of Rs.14.44 Cr. including duties and taxes.

M/s OPWR DEL SPV Pvt. Ltd. has approached SBI for credit facility to construct these plants who have in turned appointed M/s R.K Associates Valuers & Techno Engineering Consultants Pvt. Ltd. as Lenders Independent Engineer for a specific scope of work.

**Since, presently no physical work has begun yet on the site and more so our scope of work includes only review & comment on total Project cost, CUF and Irradiation Data, therefore site visit has not been carried out.**





**RESCO Model: -**

MNRE had introduced the PPP/RESCO model policy setting tariff rates for solar to be arrived on transparent competitive bidding model through PPP route.

*The RESCO model is one of the methods of implementing rooftop solar installations. Under the RESCO model, a renewable energy service company ("**RESCO**"), (i.e., an energy service company that provides energy to consumers from renewable energy sources), develops, installs, finances, operates and owns the rooftop solar power project ("**Project**"), and supplies power generated from the Project to the consumer on whose premises the Project is set up ("**Customer**") or to the grid through net-metering.*

*'Build, Own, Operate and Transfer' (BOOT) is a special kind of RESCO model in which the RESCO constructs, owns, operates, and transfers the ownership of the Project to the Customer after the expiry of a predefined period. The RESCO and the Customer enter into a long-term power purchase agreement ("**PPA**") for an agreed tenure, which sets out, among others, the terms at which the power generated from the Project will be sold to the Customer and the tariff at which the power will be sold. Excess power from the Project (if any) could be sold by the Customer to the distribution utility through net metering system – the net metering regulations differ from state to state.*

*Under the PPA, the RESCO owns the Project and is responsible for its installation as well as its operation and maintenance of the Project throughout the tenure of the Project, and at the end of the PPA term, the ownership of the Project is transferred to the Customer. Thereafter, the Customer may either choose to retain the RESCO for operation and maintenance services or engage a third-party operator.*

*If the entity on whose premises the Project is located does not intend to buy the power generated from the Project and does not entered into a PPA with the RESCO, that entity can either lease the rooftop premises to the RESCO by means of a lease agreement or enter into a license agreement granting the RESCO the right to use the premises for the limited purpose of setting up and operating the Project. The RESCO then operates the Project and exports the energy generated to the local distribution utility at a predetermined feed-intariff (FiT) approved by the State Electricity Regulator under relevant schemes issued by the relevant state.*



**3. SCOPE OF THE REPORT:** To verify and review the Project cost, CUF and Irradiation Data of the Solar Power Plants set-up/ being set-up by M/s OPWR DEL SPV Pvt. Ltd.

- *Industry/ sector research and demand & supply trend is out of scope of the report.*
- *Financial feasibility study of the Project is out of scope of the report.*
- *Providing any kind of design report or map is out-of-scope of the report.*
- *Scrutiny of contracts, Agreements and arrangement between the parties from legal perspective is out-of-scope of this report.*
- *Location feasibility is ascertained based on the PVSyst Report provided by the client.*
- *Any kind of technical & economic feasibility of the Project is out-of-scope of this Report.*

*All the assessment carried out for the Project is done based on the documents and information provided to us and various other discussions with the Project proponents and thus forming an opinion out of it.*

*Component wise verification is not carried out.*

**4. PURPOSE OF THE REPORT:** To provide fair detailed analysis report to the Bank based on the "in-scope points" mentioned above for facilitating them to take appropriate business decision on the Project.

**5. METHADODOLOGY ADOPTED:**

- To gather relevant data/ information/ documents related to Project planning, execution, current status.
- Study of copy of Project Planning documents/ Agreements to know the scope of work of the company.
- To procure, study and analysis of any additional information, data, and documents required/ provided by the company.
- Research about the Project/ sector from the sources in the public domain.
- Correlation of the provided information against Industry/ sector benchmarks/ trend.
- Information compilation, analysis and reporting.





**PART C****PROJECT DETAILS AND KEY TECHNICAL PARAMETERS**

As per the information and copy of documents shared by the management of the company, details of the subject plants has been tabulated below:

S. No.	Offtaker	Capacity DC Power (kWp)	Capacity AC Power (kWp)	Address
1	DDA, Sarai Kale Khan	2,000	1600	Vacant DDA Land opposite Millennium Park, Sarai Kale Khan, New Delhi
2	RACL, Gajraula	740	600	M/s RACL Geartech Limited, A-3, UPSIDC Industrial Area, Gajraula, Uttar Pradesh 244223
3	Sirohi, Rajasthan	500	400	Government Medical College, Kolar, Sirohi, Rajasthan 307043
<b>Total</b>		<b>3,240</b>	<b>2600</b>	<b>(± 10%)</b>

As per the copy of module layout plans of both the sites, Key Technical Parameters & Configuration of the projects like Modules, Inverter, tilt angle, capacity, etc. are tabulated below:

**1. DDA, Sarai Kale Khan – New Delhi**

S. No.	Particular	Figure	UOM
1	Proposed Capacity	2000	kWp
2	Total No. of PV Modules	3696	No.
3	PV Module Capacity (Mono-Crystalline)	540	Wp
4	Pitch	8.16	mtr
5	PV Module Mounting Orientation	Landscape	
6	Module Mounting Structure Angle	as per surface	

**2. RACL Gajraula – Uttar Pradesh**

S. No.	Particular	Figure	UOM
1	Proposed Capacity	740.34	kWp
2	Total No. of PV Modules	1371	No.
3	PV Module Capacity (Mono-Crystalline)	540	Wp
4	PV Module Dimension	2080 x 1135 x 35	mm
5	PV Module Mounting Orientation	Landscape	
6	Module Mounting Structure Angle	as per Tin Shed	
7	Minimum Height of PV module from Tin Shed	100	mm

**3. Sirohi– Rajasthan**

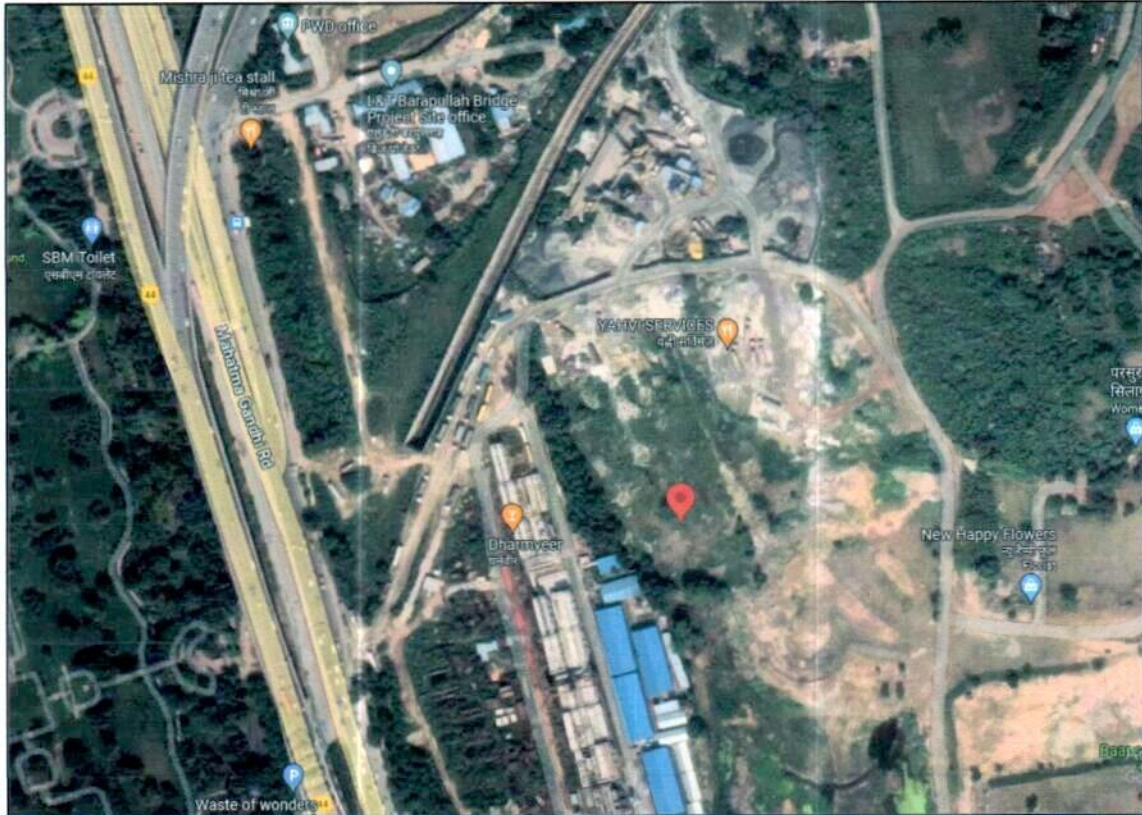
S. No.	Particular	Figure	UOM
1	Proposed Capacity	500	kWp
2	Total No. of PV Modules	926	No.
	PV Module Capacity (Mono-Crystalline)	574	Wp
4	PV Module Dimension	2284 x 1137 x 35	mm
5	PV Module Mounting Orientation	Portrait & Landscape	
6	Module Mounting Structure Angle	20° & as per Tin Shed	
	Minimum Height of PV module from Tin Shed	100	mm



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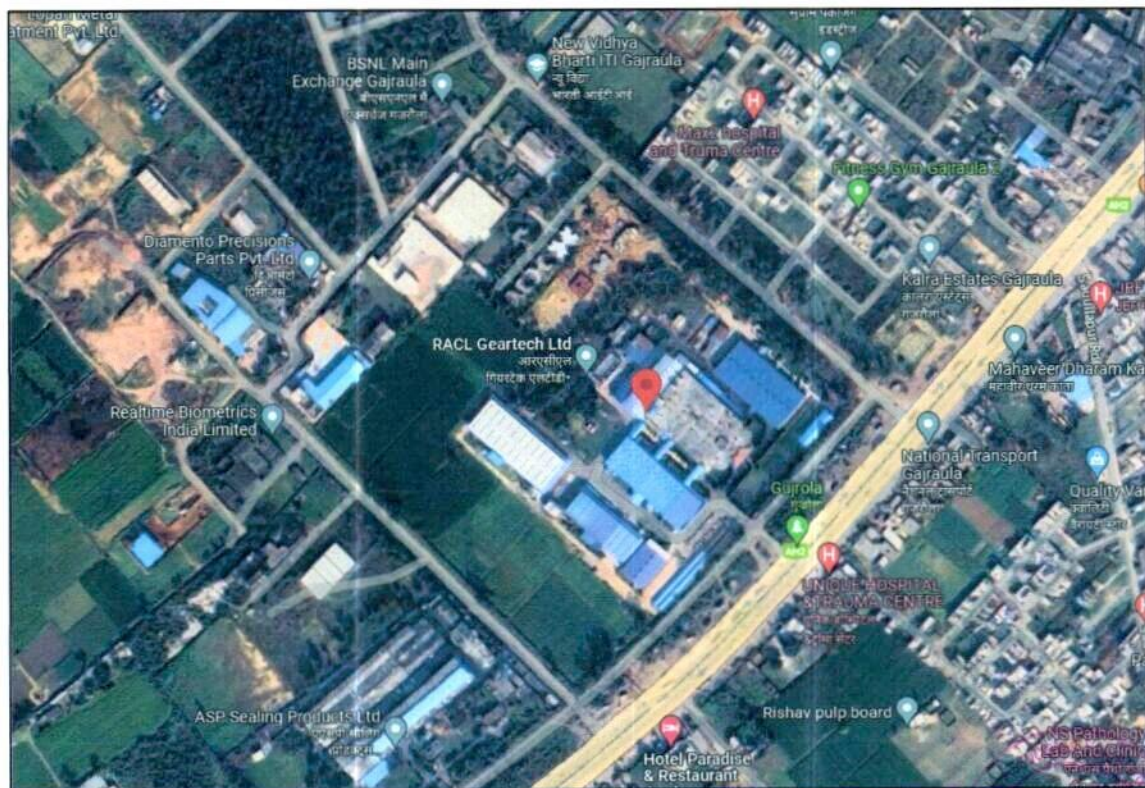
3.24 ( $\pm 10\%$ ) MWp GRID CONNECTED  
SOLAR POWER PLANT

### Location Maps: -



Location: DDA, Sarai Kale Khan

GPS: 28°35'42.1"N 77°15'32.2"E



Location: RACL Gajraula

GPS: 28°48'55.3"N 78°13'38.8"E

*Handwritten signature*  
rk Associates Pvt. Ltd.  
Valuers & Techno Engineering Consultants (P) Ltd.



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Location: Sirohi, Rajasthan

GPS: 24°57'31.5"N 72°53'08.8"E





## Technical details as per Techno-Commercial offer from Orient Power

S. No.	Item Description	Technical Specifications	Quantity	Unit	Make
<b>A PV Section</b>					
1	Solar PV module	230Wp-550Wp Mono-PERC/Multi-Si 25yrs. Linear warranty Certifications: IEC 61215, IEC 61730 & UL 1703; IEC 62804 (PID) IEC 62716 (Ammonia Resistance), IEC 60068-2-68 (Blowing Sand) IEC 61701 (Salt Mist level 6), , ISO 11925-2 (Class E) ISO 9001: 2015, ISO 14001: 2004, OHSAS 18001: 2007	3.24	MWp.	ALMM Approved/As per Policy
2	Connectors (male & female) pair MC4	Connectors (male & female) pair, MC4 Connector Pin Copper with tin coating Insulation Voltage: 1000V	As per requirement	Nos.	Multi Contact
3	Solar String Inverter – 50/100/250kVA, 415V	50/100/250kVA, 415V output, Outdoor type-IP65, Eff. >98%	As per Design	Nos.	Sungrow/ Grow att /Equivalent
<b>B Structures</b>					
1	Design & Supply of Module Mounting structure supply.	Roof Mounted Ballasted Solar Module Mounting Structure. <b>Material: MS HDG Grade: E 250</b> Galvanisation: 80micron Structure designed at 170kmph wind speed as per IS- 875 Ground Clearance 1 mtr.	As per requirement		Oriana Power
2	Structure & Module Mounting Accessories.	<b>Material: SS Grade: SS 304</b> Structure designed at 170kmph wind speed as per IS-875	As per requirement		Oriana Power
<b>C Remote Monitoring System</b>					
1	Ambient Temperature sensor	PT1000 sensor element	1	Set	IMT
2	Module Back Surface Temperature sensor	PT1000 sensor element	1	Set	IMT
3	Solar Irradiation sensor for radiation measurement	Cell Based sensor with calibration certificate	1	Set	IMT
4	2 Pair Twisted Un - armoured communication cable, Cu		As per Design	Mtr	K-flex/parasheild
5	HDPE DWC Conduit, Size of 32/26mm & Accessories (PVC bends & couplers etc.)	Double Wall Corrugated HDPE Conduit for communication cable laying over shed. Conduit will be fixed with shed using GI Saddles and aluminum pop rivets.	As per Design	Mtrs	Duraline/ equivalent
6	3C 1.5Sq. mm Armored Copper Cable - Data Logger Power cable		As per Design	Mtr	Polycab
7	CAT 6 cable		As per Design	Mtr	Dlink
8	Data logger Installation and IP 65 Box	For Remote monitoring	As per Design	Nos	Webdyn
9	SCADA for Solar Plant monitoring and Grid monitoring	Visual inter-facing for plant monitoring and data analysis	As per Design	Lot	Webdyn



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S. No.	Item Description	Technical Specifications	Quantity	Unit	Make
<b>D DC side - Cables &amp; Accessories</b>					
1	1 Core 4 Sq mm Cu Solar Cable	Solar DC cable, Tin-coated copper cable as per EN standard. UV protected double sheathed XLPO, Halogen free cable.	As per Design	Mtrs	Apar/Siechem/Equivalent
2	1C 2.5 Sq mm Green Cable (for Earthing), with accessories	2.5 sqmm. Single core flexible PVC insulated cable for module to module earthing with SS-304 fasteners, teeth washer and copper thimbles.	As per Design	Mtrs	Polycab/KEI
3	DC Electrical accessories	(Consumables like Lugs, Glands, Ferrules, Cable Ties, uPVC tape, uPVC saddle, Cable clips etc.)	As per Design	Set	As per Design RFQ
4	HDPE DWC Conduit, Size of 32/26mm & Accessories (PVC bends & couplers, T Joints etc.)	Double Wall Corrugated HDPE Conduit for DC cable laying over shed. Conduit will be fixed with shed using GI Saddles and aluminum pop rivets.	As per Design	Mtrs	Apollo/ Duraline/ equivalent
<b>E AC side - Cables &amp; Accessories</b>					
1	4 C, 25 Sq.mm Cu PVC Flexible Cable.	1.1kV insulated, Copper conductor, PVC insulated, PVC outer sheathed cable	As per Design	Mtrs	Polycab/KEI/Havells
2	3.5 C, 150 Sq.mm AL XLPE Arm Cable.	1.1kV insulated, Aluminum conductor, XLPE insulated, GI strip armoured, PVC outer sheathed cable as per IS-7098 Part-1	As per Design	Mtrs	Polycab/KEI/Havells
3	Cable for earthing- 1C 10 sq.mm Cu flexible (for Inverter earthing)		As per Design	Mtrs	As per Design RFQ
4	Field ACDB for inverters output	3 phase, 415 V, 50 Hz ACCB Panel with - Enclosure material made of CRCA with Powder coated paint - 4P, MCCB's - as per requirement - 4P, Isolator - 3 phase, 4 W, AL, bus bar. - IP 65 with canopy - Panel with double door & lock - SPD Type 2 - with mounting arrangement	As per Design	Nos	Breakers Make: L&T
5	Isolator Panel near Metering Panel	3 phase, 415 V, 50 Hz ACCB Panel with - Enclosure material made of CRCA with Powder coated paint - 4P, 700A MCCB's - 3 phase, 4 W, AL, bus bar. - IP 54 with canopy - Panel with single door & lock - with mounting arrangement	As per Design	Nos	Breakers Make: L&T
4	Cable tray for AC cable laying after inverter	50mmX50mmX2mm Hot dip galvanized cable tray with cover and other accessories i.e. cable tray stand, cable tray cover clamp, cable tray coupler, M8 MS HDG Fasteners, anchor bolts etc.	As per Design	Nos	Oriana Power
<b>F Civil Works</b>					
1	As per site requirement	Civil work for Structure, electrical panel foundations, Structure Foundation, earthing pit chamber construction.	1	Set	As per RFQ



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S. No.	Item Description	Technical Specifications	Quantity	Unit	Make
<b>G</b>	<b>Safety &amp; Protections</b>				
1	Fire extinguisher With sand bucket ( 4 Kg ABC type )	4 Kg ABC type fire extinguishers with stand	As per design	Set	As per Design RFQ
2	Earthing Kit for plant AC and DC earthing	Copper Bonded rods 3m, 17.2 mm, chemical bags and other required accessories. Earthing pit chamber will be constructed and Cast iron cover will be installed	1	Set	VNT/JMV/GS Electrode
3	Lightning Arrester for protection of solar power plant	ESE Type, GI mast, 2 Earthing pit , 1 C 70 mm2 Cu PVC cable, 2 set of earthing for one lightning arrester, R-109 Meter , Stay Set support.	As per design	Nos.	VNT/JMV/Allied Power
4	GI Strip 25X3 mm for DC side	Hot dip galvanized earthing strip with minimum 80 micron. Material grade E-250	As per Site Req	Meter	As per Design RFQ
<b>H</b>	<b>Services</b>				
1	Installation, testing and Commissioning	Complete plant service work	5	MWp	As per Design RFQ
2	Module cleaning system with uPVC pipe line system and pump.	1 HP, 230V Centrifugal pump, CPVC Pipe (1/2 inch) line over roof with shut-off valves, CPVC pipe will be fixed over roof with SS saddles gitti-pench. Flexible Hosepipe (1 inch) of 40 Meter length, Wiper 1.5 Meter length, Extendable Pole Piping for Each Roof, Piping as per detail drawing	1	Set	Ashirwad/Astral/ Equivalent

**The above-mentioned installations/parts are provided as per best industrial practice and can be verified after commissioning of the project. The specification for the items mentioned in the above Techno Commercial Offer to be inline and with as per government guidelines.**

## Client's (site owner) Scope of work

- Provision of permission to work on site.
- Clear shadow free area / Tin shed for the installation of PV modules & equipment's.
- Entrance/working permission for local labor for loading/un-loading work.
- Electrical power point nearby to site for electricity requirement during construction.
- Water tap points (minimum 1 inch ) at PV plant site for module cleanings system.
- Internet / SIM card with data packs shall be provided at site for remote monitoring of inverters and other devices.
- Documents required for CEIG approval/DISCOM NOC/Bi-directional Meters.





**PART D****ENERGY YIELD ASSESSMENT**

Company has used PVSyst V7.2.21 to assess energy yield calculation which is the standard Industry practice. The yearly average of main results of irradiation and energy yield from the provided PVSyst is as under:

S. No.	Plant Location	Annual production probability (MWh)		Specific Production (kWh/kWp/year)		Performance Ratio (%)
		P50	P90	As per PPA	As per PVSyst	
1	DDA, Sarai Kale Khan	2,869	2,803	1,314	1,435	82.77
2	RACL, Gajraula	996.7	973.7	1,036	1,346	84.69
3	Sirohi, Rajasthan	800.9	782.4	1500	1603	79.11

**Analysis of Irridiation & PV Output data:** In respect to Irridiation & PV Output data, company has provided to us PVSyst report V7.2.21 in which key Irridiation components and PV Output data is given as enumerated in table below. We have analysed and compared it with other data source points also such as Solar Resource by Global Solar Atlas of World Bank and ISRO Solar Calculator to confirm its legitimacy as mentioned in table below:

Particulars	DDA, Sarai Kale Khan		RACL, Gajraula		Sirohi, Rajasthan	
	As per Global Solar Atlas	As per PVSyst	As per Global Solar Atlas	As per PVSyst	As per Global Solar Atlas	As per PVSyst
Global horizontal Irradiation (kWh/m <sup>2</sup> )	1715.7	1618.2	1750.0	1551.6	2049.4	1869.1
Diffuse horizontal Irradiation (kWh/m <sup>2</sup> )	928.6	906.4	926.1	894.9	775.8	813.7
Direct Normal Irradiation (kWh/m <sup>2</sup> )	1159.2	-	1224.7	-	1936.5	-
Specific Photovoltaic Power Output	1469.2	1274	1502.9	1346	1749.6	1603
Annual Global Insolation (ISRO Solar Calculator) (kWh/m <sup>2</sup> /year)	1342		1378		1839	

**Observations and Remarks:**

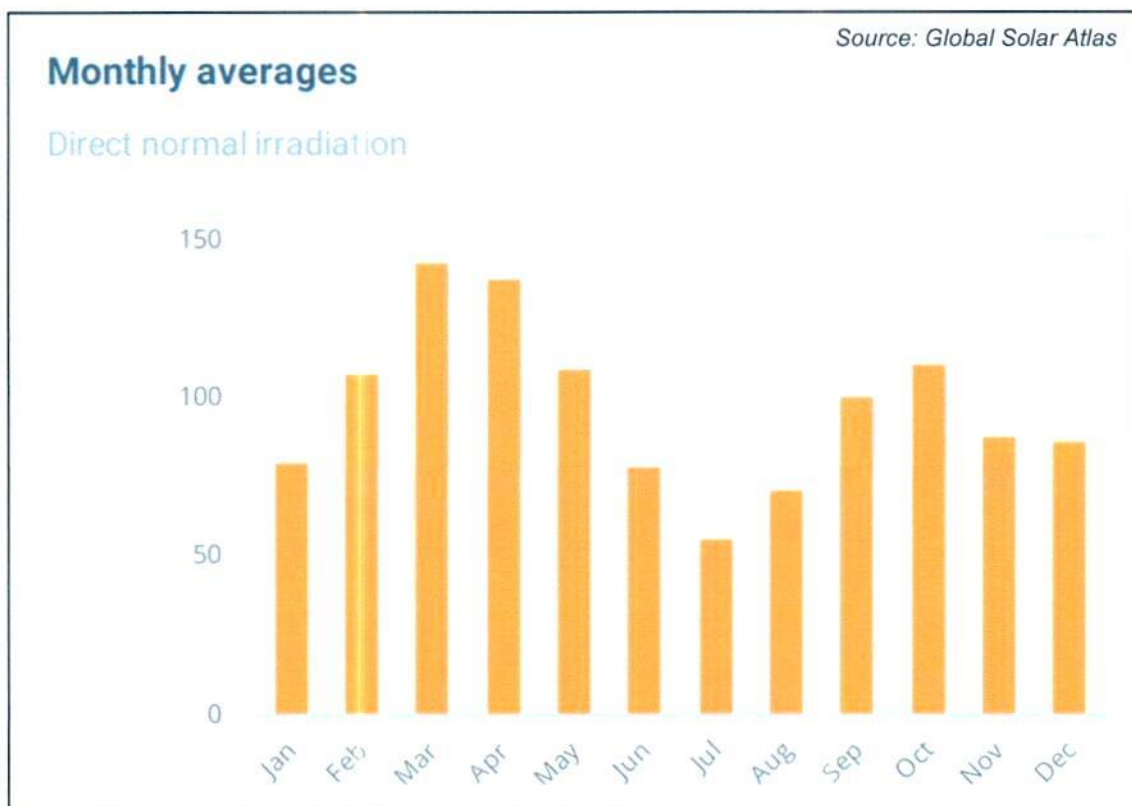
1. As per the PVSyst - Simulation reports dated 08<sup>th</sup> July 2023, the estimated energy that can be produced by the subject plants and their respective performance ratio is almost equal as agreed in the PPA.
2. As per comparative analysis, PVSyst Irridiation and PV Output data is in line to our analysis from Global Solar Atlas of World Bank and ISRO Solar Calculator.
3. As per the information provided by the management of the company, the estimated Plant Load Factor (CUF at P90) is 16.00%, 15.00% & 18.27% for DDA-Sarai Kale Khan, RACL-Gajraula & Sirohi-Rajasthan respectively.





## Monthly averages- Direct normal irradiation (kWh/m<sup>2</sup>)

### 1. DDA, Sarai Kale Khan



*[Signature]*

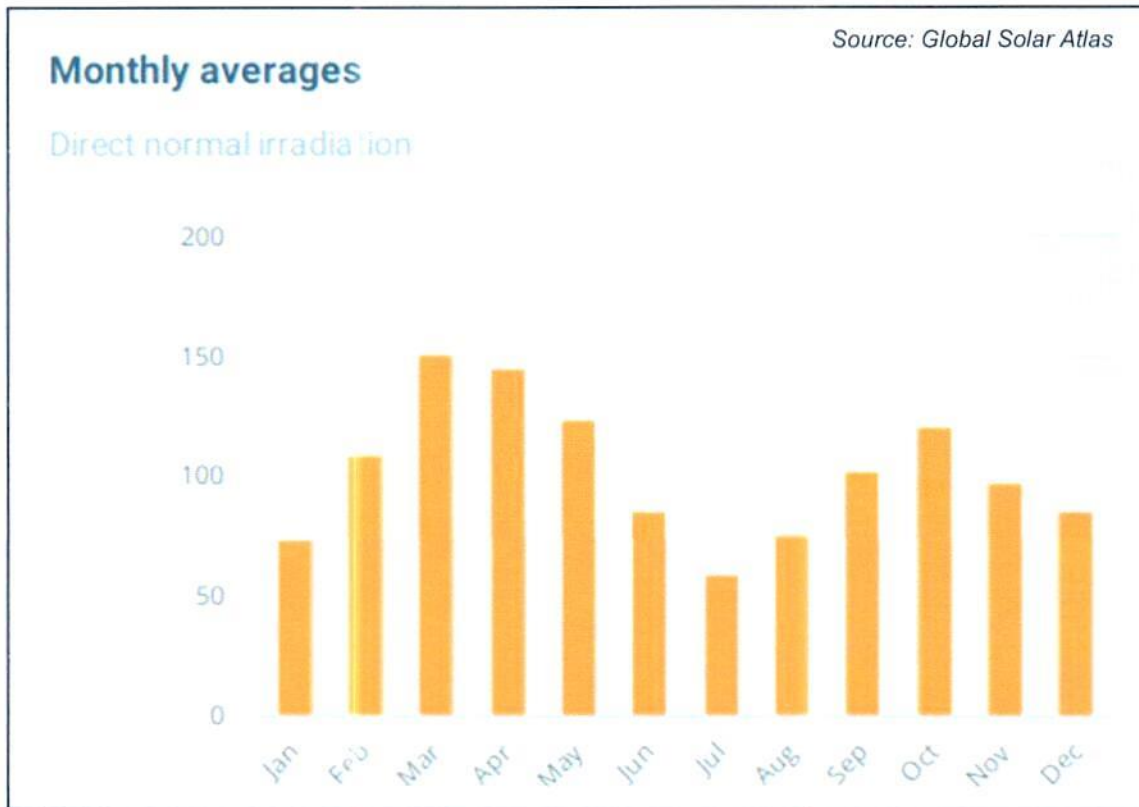
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rk Associates Valuers & Techno Engineering Consultants Pvt. Ltd.

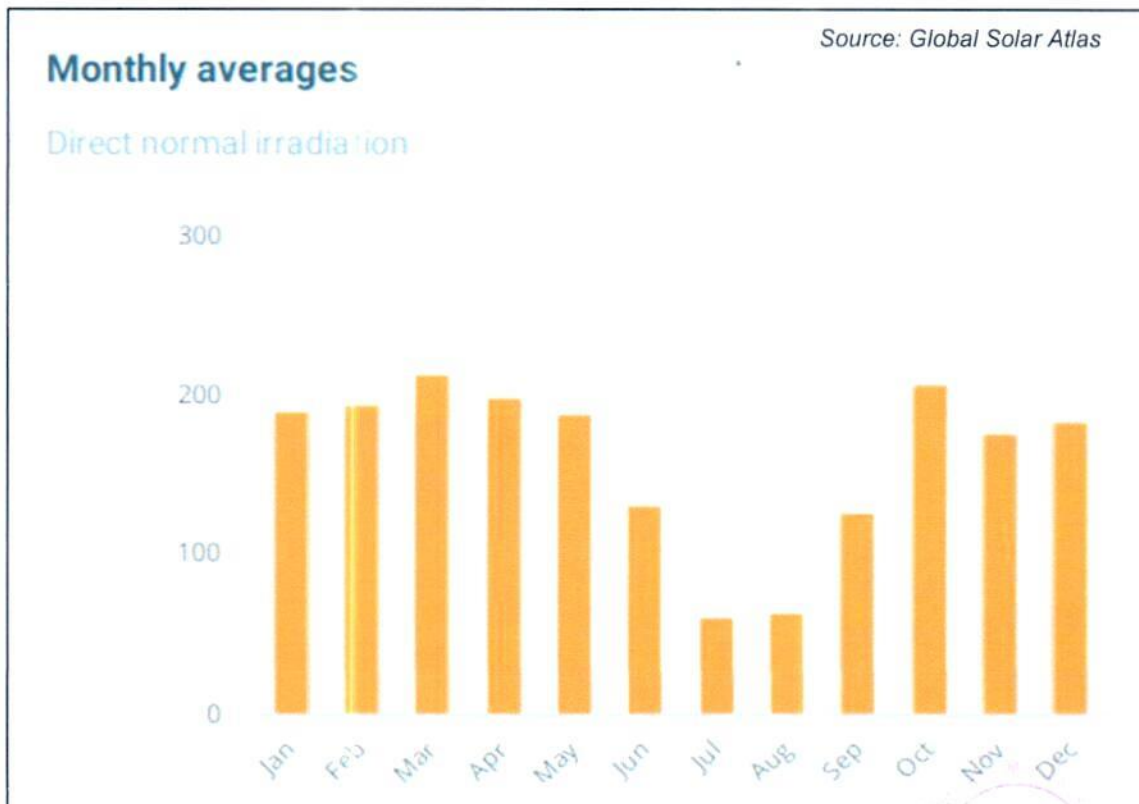
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### 2. RACL- Gajraula



### 3. Sirohi- Rajasthan



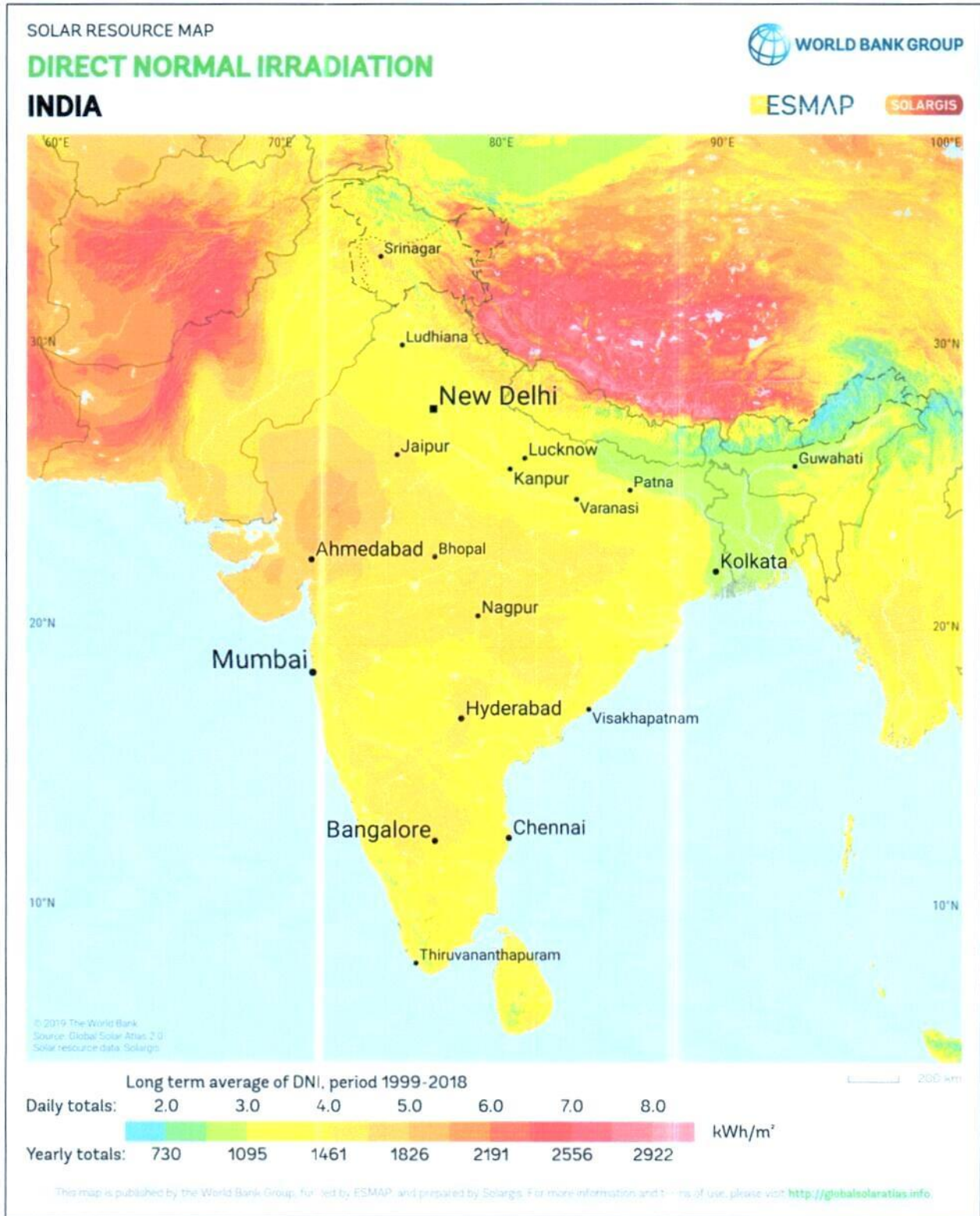
*Abhi*

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Valuation Center of Excellence  
& Research Centre



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**DAA-Satrai Kale Khan lies above 3.0 daily (1095 annually) Kwh/m<sup>2</sup>.**

**RACL-Gajraula lies above 3.0 daily (1095 annually) Kwh/m<sup>2</sup>.**

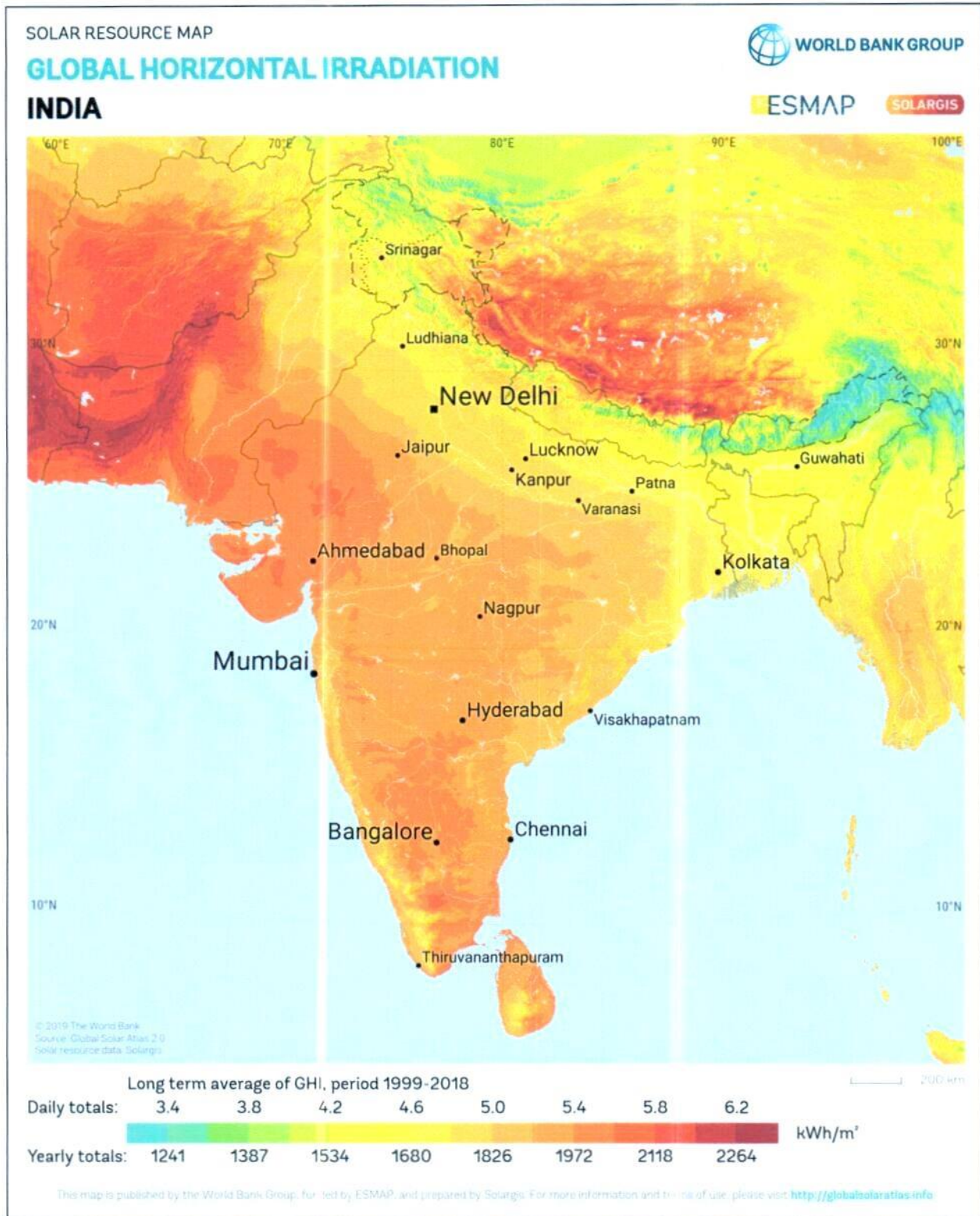
**Sirohi-Rajasthan lies below 6.0 daily (2191 annually) Kwh/m<sup>2</sup>.**

*Signature*

rk

Valuers & Techno Engineering Consultants (P) Ltd.





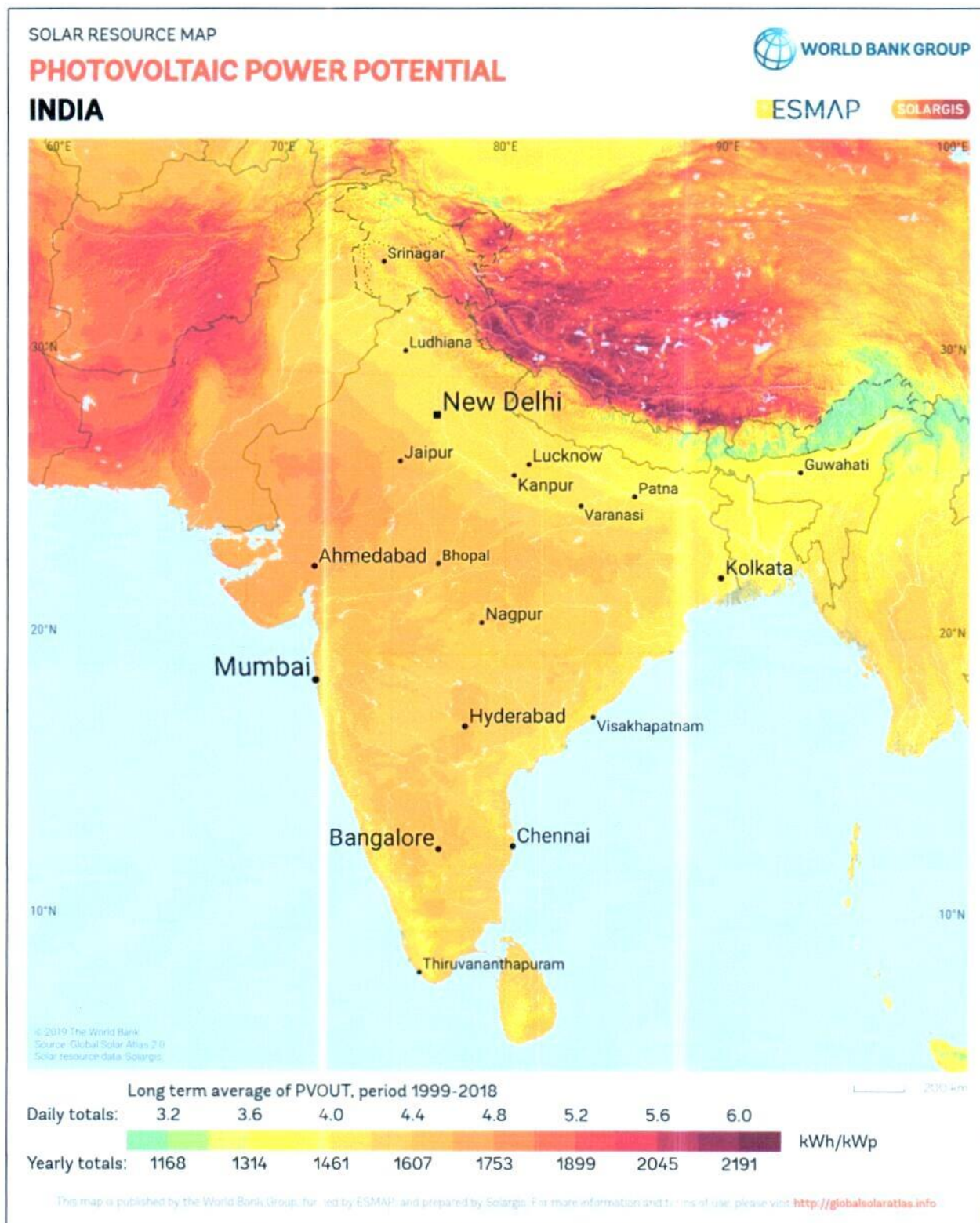
**DAA-Satrai Kale Khan lies above 5.0 daily (1826 annually) Kwh/m<sup>2</sup>.**

**RACL-Gajraula lies above 5.0 daily (1826 annually) Kwh/m<sup>2</sup>.**

**Sirohi-Rajasthan lies below 5.8 daily (2118 annually) Kwh/m<sup>2</sup>.**







**DAA-Satrai Kale Khan lies above 4.0 daily (1461 annually) Kwh/kWp.**

**RACL-Gajraula lies above 4.0 daily (1461 annually) Kwh/kWp.**

**Sirohi-Rajasthan lies just above 4.8 daily (11753 annually) Kwh/ kWp.**

*Handwritten signature and a circular stamp.*



**PART E****POWER PURCHASE AGREEMENT TERMS**

As per the information provided by the company, the total proposed capacity of the subject roof-top solar power plant is 3.24 MWp (± 10%). As on date, company has signed 3 no. of PPAs to install the power plant and supply power at both the project sites. Details of the same are tabulated below:

S. No.	Offtaker	DC Capacity (kWp)	Tariff (Rs./kWh)	PPA Date
1	DDA, Sarai Kale Khan	2,000	4.42	17-03-2023
2	RACL, Gajraula	740	4.50	05-06-2023
3	Sirohi, Rajasthan	500	4.05	28-07-2023
<b>Total</b>		<b>3,240</b>		

Source: PPAs

**Important Clauses:** All PPA's are signed for a period of 25 years with fixed tariff as stated above. Some of the important clauses from the signed PPAs are as follows:-

**Clause-3: Terms and Termination****3.1. Term**

<b>DDA, Sarai Kale Khan</b>	The term of the Agreement shall commence on the Effective Date and shall continue for twenty-five (25) years from the start of the financial year starting immediately after Commercial Operation Date (the "Term"), unless and until terminated earlier pursuant to the provisions of the Agreement. (i.e. if Commercial Operation Date is any date between 01.04.2022 and 31.03.2023, then the 25- year term shall continue till 31.03.2048. After the term, the Power producer shall vacate the site and hand over the same to purchaser. Payment of the last three months' invoices bills of the power producer shall be released only after handing over the vacant site to DDA. Safe disposal of the Power plant system shall be the responsibility of the power producer. Solar power project construction time shall not be part of commercial operation, PPA is valid of 25 years of commercial operation.
<b>RACL, Gajraula</b>	The term of the Agreement shall commence on the Effective Date and shall continue for Twenty Five (25) years from the Commercial Operation Date (the "Term"), unless and until terminated earlier pursuant to the provisions of the Agreement. After the Term, the ownership of the System shall be transferred to the Purchaser at Rs. 1/-.
<b>Sirohi, Rajasthan</b>	The term of the Agreement shall commence on the Effective Date and shall continue for twenty-five (25) years from the start of the financial year starting immediately after Commercial Operation Date (the "Term"), unless and until terminated earlier pursuant to the provisions of the Agreement. i.e., if Commercial Operation Date is any date between 01.04.2023 and 31.03.2024, then the 25-year term shall continue till 31.03.2048. After the Term, the ownership of the System shall be transferred to the Purchaser free of cost at the discretion of Power Purchaser.

**3.2.**

<b>DDA, Sarai Kale Khan</b>	<b>Conditions of the Agreement prior to installation</b> In the event that any of to the Commercial operation. the following events or circumstances occur prior Operation Date, the Power Producer may terminate the Agreement, in which case neither Party shall have any liability to the other except for any such liabilities that may have accrued prior to such termination. <b>a)</b> There has been a material adverse change in the rights of Purchaser to occupy the Premises Power Producer to install the System at the Premises.
-----------------------------	--



	<p><b>b)</b> The Power Producer has determined that there are casements, Capacity Cost Recovery (CCRs) or other liens or encumbrances that would materially impair or prevent the installation, operation, maintenance or removal of the System. If any dispute arises before commercial operation date, the same shall be resolved under the clause, 17.7 (c).</p>
<b>RACL, Gajraula</b>	<p><b>Purchase Option/Purchase Obligation</b> So long as a Purchaser default shall not have occurred and be continuing, Purchaser has -the option to purchase the System by paying the Power Producer the Purchase price as per Schedule III to this Agreement. To exercise its purchase option, the Purchaser shall not less than Ninety (90) days prior to the proposed Purchase Date, provide written notice to the Power Producer, of Purchaser's intent to exercise its option to purchase the System on such purchase date. In the event Purchaser confirms its intention to exercise the purchase option in writing to the Power Producer, (1) Purchaser shall pay the applicable Purchase Price and any other unpaid dues that have accrued under this agreement to the Power Producer on the Purchase Date, and such payment shall be made in accordance with any written instructions Le. NEFT/RTGS delivered to Purchaser by the Power Producer for payments under the Agreement, and (ii) the Parties shall promptly execute all documents necessary to cause title to the System to pass to Purchaser on the Purchase Date, free and clear of all liens. Upon execution of the documents and payment of the applicable purchase price in each case as described in the preceding sentence, the agreement shall terminate automatically and the Purchaser shall become the owner of the System.</p>
<b>Sirohi, Rajasthan</b>	<p><b>Purchase Option/Purchase Obligation</b> So long as a Purchaser default shall not have occurred and be continuing, Purchaser has -the option to purchase the System by paying the Power Producer the Purchase price as per Schedule III to this Agreement. To exercise its purchase option, the Purchaser shall not less than Ninety (90) days prior to the proposed Purchase Date, provide written notice to the Power Producer, of Purchaser's intent to exercise its option to purchase the System on such purchase date. In the event Purchaser confirms its intention to exercise the purchase option in writing to the Power Producer, (i) Purchaser shall pay the applicable Purchase Price to the Power Producer on the Purchase Date, and such payment shall be made in accordance with any written instructions delivered to Purchaser by the Power Producer for payments under the Agreement, and (ii) the Parties shall promptly execute all documents necessary to (A) cause title to the System to pass to Purchaser on the Purchase Date, free and clear of all liens and (B) assign all vendor warranties for the System to Purchaser. Upon execution of the documents and payment of the applicable purchase price in each case as described in the preceding sentence, the agreement shall terminate automatically, and the Purchaser shall become the owner of the System. Upon such termination, the Power Producer shall offer its operations and maintenance ("O&amp;M") services to the Purchaser and the Parties may enter into an O&amp;M agreement in this regard. The terms and conditions of the O&amp;M agreement will be negotiated in good faith between the parties.</p>

#### 4.1 Installation Work

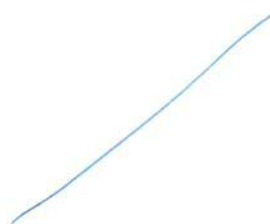
<b>DDA, Sarai Kale Khan</b>	<p>a) The Power Producer will cause the Project to be designed, manufactured, supplied, engineered, erected, tested and commissioned, operated &amp; maintained and constructed substantially in accordance with REIL RFS No REIL/BID/RTS(C)/2019-20/001 DATED 04.10.2019 and the sanction letter issued by REIL subjected to the terms &amp; conditions of PPA. The Power Producer shall provide to the Purchaser a bill of materials listing the major equipment constituting the System. Such a bill of materials shall be provided within 30 days of the Commercial Operation Date.</p>
<b>RACL, Gajraula</b>	<p>a) The Power Producer will cause the Project to be designed, manufactured, supplied, engineered, erected, tested and commissioned, operated &amp; maintained and constructed substantially in accordance with this agreement. The Power Producer shall provide to the Purchaser a list of materials listing the major equipment constituting the System. Such list of materials shall be provided within 45 days of execution of this Agreement.</p>
<b>Sirohi, Rajasthan</b>	<p>a) The Power Producer will cause the Project to be designed, manufactured, supplied, engineered, erected, tested, and commissioned, operated &amp; maintained, and constructed substantially in accordance with NIT No REIL/BID/RTS(C)/2019-20/001 DATED 04.10.2019. The Power Producer shall provide to the Purchaser a bill of materials listing the major equipment constituting the System. Such a bill of materials shall be provided within 30 days of the Commercial Operation Date.</p>



## 7.1 Tariff and Payment

DDA, Sarai Kale Khan	Consideration Purchaser shall pay to the Power Producer a monthly payment (the "Solar Power Payment") for the Solar Power generated by the System as per the Metering clause 5.2 (b) above during each calendar month of the Term equal to the actual Monthly Production as recorded in Joint Meter Reading Report for the System for the relevant month multiplied by the Tariff irrespective of (i) whether any or all units of Solar Power has been drawn, consumed or utilized by Purchaser and / or (ii) whether any Solar Power has been injected, whether inadvertently or otherwise, into the grid of the Distribution Utility. The Power Producer will bill the Purchaser for each KWh metered as above at the Delivery Point, at the Tariff prevailing at that point of time as detailed in Schedule - II, the Tariff will be equal to <b>Rs. 4.42 /kWh</b> levelized tariff as per REIL allocations. The 'year' considered shall be the financial year which April 1st to 31st March of every year as per REIL. Schedule II provides a detailed year on year tariff schedule.
RACL, Gajraula	Purchaser shall pay to the Power Producer a monthly payment (the "Solar Power Payment") for the Solar Power generated by the System as per the Metering clause 5.2 (b) above during each calendar month of the Term equal to the actual Monthly Production as recorded in Joint Meter Reading Report for the System for the relevant month multiplied by the Tariff irrespective of whether any or all units of Solar Power has been drawn, consumed or utilized by Purchaser and / or (ii) whether any Solar Power has been injected, whether inadvertently or otherwise, into the grid of the Distribution Utility. The Power Producer will bill the Purchaser for each KWh metered as above at the Delivery Point, at the Tariff prevailing at that point of time as detailed in Schedule-II, the Tariff will be equal to <b>Rs. 4.50/kWh</b> (fixed for 25 years). For the sake of simplicity, the second year shall begin from the first date of month following completion of one year from the commercial operation date so as to maintain a monthly billing cycle. Schedule II provides a detailed year on year tariff schedule. For the avoidance of doubt, it is clarified the base tariff is exclusive of transmission charges, wheeling charges, cross subsidy charges, electricity duty, generation tax/ duty/cess (or any other nomenclature), taxes levied by government and / or discom and such other charges that may be included or payable from time to time pertaining to the generation and/or supply of electricity from Solar power developer to purchaser by government and / or discom. The same have to be borne by the purchaser. Further, in the event of any change / imposition of statutory charges / levies including but not limited to electricity/ cess/ tax/ wheeling / transmission charges / cross subsidy charges/ additional surcharge/ etc., after execution of this agreement, on the supply of solar power from the power producer to purchaser due to change in law, the impact shall be fully absorbed by purchaser. The units of power shall be billed to purchase, shall be based on the meter reading installed at the delivery point.
Sirohi, Rajasthan	Consideration Purchaser shall pay to the Power Producer a monthly payment (the "Solar Power Payment") for the Solar Power generated by the System as per the Metering clause 5.2 (b) above during each calendar month of the Term equal to the actual Monthly Production as recorded in Joint Meter Reading Report for the System for the relevant month multiplied by the Tariff irrespective of (i) whether any or all units of Solar Power has been drawn, consumed or utilized by Purchaser and/ or (ii) whether any Solar Power has been injected, whether inadvertently or otherwise, into the grid of the Distribution Utility. The Power Producer will bill the Purchaser for each KWh metered as above at the Delivery Point, at the Tariff prevailing at that point of time as detailed in Schedule - II, the Tariff will be equal to <b>Rs. 4.05/kWh</b> . The year considered shall be the financial year which April 1st to 31st March of every year. Schedule II provides a detailed year on year tariff' schedule.

Please note that the above main clauses of PPA are mentioned only for illustration purpose of the convenience of the lenders to analyze the Project in terms of technicality. However, this shall not be construed as professional opinion on the contract legality which is out of scope of this report.




**PART F****CURRENT STATUS OF WORK**

As per information and documents shared by the company's representative, following are our observations and remarks on the current status of the project:

- a. As per the verbal information received from the management of the subject company, installation work is yet to be started.
- b. As per information shared by the company officials, the proposed COD of the entire project is scheduled in the month of October 2024 which seems to be achievable as more than 12 months are enough for project implementation provided that the Project implementation starts in next 1-2 months.





**PART G****PROJECT COST & EXPENDITURE**

1. **PROJECT COST:** Project cost has been taken from the Copy of Techno-Commercial offer from M/s OPPL to M/s OPWR DEL SPV Pvt. Ltd. dated 31<sup>st</sup> August 2023, for the installation of Roof Mounted Grid Tie Solar PV plant located at Delhi, Rajasthan & Uttar Pradesh. The terms of engagement are tabulated below:

S. No.	Description	Amount (Including duties and taxes)
1	Solar Panel: multi/Mono-Si, IEC certification, BIS certification and other relevant standard as per Government	Rs. 7,79,68,800/-
2	Solar Inverter: String inverter with multiple MPPT provision, Outdoor Mounted, IP65 Protection and all relevant standards as per Government	Rs. 1,15,38,800/-
3	BOS: Module Mounting Structure, DC Cable, AC Cable, LT Panel, Civil material, Conduit, MCS, RMS, Earthing and Protection Systems, Lightning Arrester, Weather Sensor and monitoring system, Metering Unit, DISCOM approvals etc.	Rs. 4,33,35,500/-
4	I&C: Supply of civil material, Installation, testing and commissioning of Solar Power plant as per site requirement	Rs. 1,15,43,350/-
<b>Total</b>		<b>Rs. 14,43,86,450/-</b>

- Freight & Transit Insurance: Inclusive
- Taxes GST- as per government norms
- Net-metering fee will be paid by consumer
- Any changes in Tax/Duties shall be borne by the Purchase
- Excludes-  
Any approval  
Anything out of BOQ

**Observations and Remarks:**

- a. Project cost calculated on the basis of the Benchmark Cost provided by the MNRE has been tabulated below:

S. No.	Particulars	Benchmark Cost (In Rs./kW)	Project Capacity (In MW)	Total Project Cost (Excluding GST) (In Rs.)	Total Project Cost (Including ~14% GST) (In Rs.)
1	As per Ministry of New & Renewable Energy	35,886*	3,240	11,62,70,640	13,25,48,530
			<b>3.24 MWp</b>		<b>~Rs. 13.25 Cr.</b>

\*Benchmark cost for 2021-22



b. Project cost calculated on the basis of market comparable:

S. No.	Particulars	Excluding GST	Including GST	Remark
		Per KW Cost (In Rs.)	Per KW Cost (In Rs.)	
1	Subject project installation cost	-	44,560	as per Techno-Commercial offer from OPPL
<b>Market Research Details</b>				
2	MNRE Benchmark Cost	35,886	-	Refer Annexure-1
<b>Market Research</b>				
3	Quotation-1	48,700	55,400	Refer Annexure-2
4	Quotation-2	37,740	42,500	
5	Quotation-3	45,000	51,200	
6	Quotation-4 (Tata Solar)	60,000	68,300	

c. As per our analysis and market research, the installation cost of Rooftop Mounted Solar Power Plant varies from Rs. 45,500/- per KW to Rs. 68,300/- per KW. For the smaller setups the price is higher and for large set-up, price is less.

d. The project cost is solely depends upon the project location, contractors profit, type of module and its supporting structures, etc.

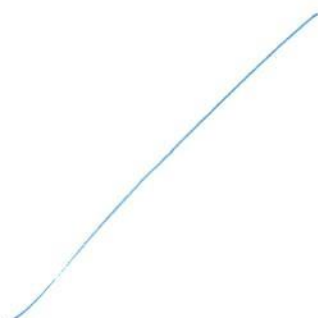
e. Based upon the above mentioned details, the project cost amounting to Rs. 14.44 Cr. inclusive of GST for the installation of subject rooftop solar power plant seems to be reasonable.

f. As per the verbal information received from the management of the subject company, installation work is yet to be started.

**Note:**

- Project cost is analyzed based on lump sum cost only and not item wise.
- Project cost is assessed for the date of this report only and due to price fluctuations it may vary from time to time.

**2. EXPENDITURE:** As per information/details shared by the company, the installation work related to power plant is yet to start. Thus, the expenditure incurred till date on the project is NIL.






## PART H

## PHOTOGRAPHS

***Since the installation work related to solar panels is yet to start and this is just a Desktop LIE based upon documents provided. Thus, Photographs are not available.***



## PART I

## OTHER DOCUMENTS &amp; REFERENCES

**Annexure-1: Benchmark Cost by MNRE:**

No. 32/24/2020-SPV Division  
Government of India  
Ministry of New & Renewable Energy  
\*\*\*

Block No. 14, CGO Complex, Lodhi Road,  
New Delhi, Dated 27<sup>th</sup> October 2021

**ORDER**

**Subject: Amendment in Benchmark costs for Grid-connected Rooftop Solar PV systems for the financial year 2021-22 -reg.**

Vide Order no.318/38/2018-GCRT dated 18.08.2021 dated 18.08.2021, benchmark costs including taxes, were issued for FY 2021-22 by the Ministry. Subsequently, applicable Goods & Services Tax (GST) rates have been revised by GST Council for identified renewable energy equipment. In order to address the recent changes in GST rates and also any further changes in GST rates in future, it has been decided to issue benchmark costs excluding GST. For the purpose of calculating CFA available under MNRE Scheme, applicable GST rates may be added to these benchmark costs. Accordingly, undersigned is directed to convey the approval of competent authority for issuing the benchmark costs, excluding GST, for Grid-connected Rooftop Solar PV systems applicable for MNRE Scheme for the year 2021-22. Rooftop solar system capacity-wise benchmark costs are given below:

(A) For General Category States/ UTs:

RTS System Capacity range	Up to 1 kW	> 1 kW upto 2 kW	>2kW Upto 3kW	> 3kW upto 10 kW	>10 kW upto 100 kW	>100 kW upto 500 kW
Benchmark cost (Rs./kW) excluding GST	46923	43140	42020	40991	38236	35886





**Market Comparables:****Annexure-2**

Installation Cost of 1MW Power Plant	
For better understanding of investment in 1 megawatt solar power system, we have break down the overall cost in fragments. You can now compare and analyse the cost of solar panels, solar inverters and other accessories individually.	
Particulars	Estimated Cost
Solar Panels	3 Cr.
Solar Inverter	1 Cr.
Combiners + Junction Boxes	20 Lakh
Protective Gears Arrangement	10 Lakh
SCADA & Data Logger System	7 Lakh
Land Bank	*5 Acre
Erection of Project	50 Lakh
<b>Total Project Cost</b>	<b>4.87 Cr. (Approx.)</b>
<ul style="list-style-type: none"> <li>*Land value of 5 acre is not included in this table.</li> <li>All the figures in above table are just to provide a rough idea. Don't consider it as an exact and final cost of 1MW solar power plant.</li> </ul>	


**Project Cost (Mono-Crystalline) included GST**

S. No.	Description	On Tin Roof
1.	Turnkey EPC prices for Design, Supply, Erection, Testing & Commissioning of 250 KW Solar Power Generating System	94,35,000
2.	GST	11,90,000
<b>Total (GST Included)</b>		<b>1,06,25,000 /-</b>

➤ Discom Legal &amp; Liasioning Fees included above.

Shubham Agarwal & Praveen Mehta  
SOLAR NATIONM- +91 9461846401, 9829227948 Email – [solarnationbusiness@gmail.com](mailto:solarnationbusiness@gmail.com)



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You can later on also buy this plant from the vendor.

## Cost of 1 MW solar plant

Now, let us discuss the cost of 1 MW solar plant. There is no fixed number for the final 1 MW solar plant cost. However, we have a tentative figure – between 4 to 5 crore.

This price range is subject to increase or decrease depending on various factors. Here are some factors affecting the overall 1 megawatt solar power plant cost.

- Type of solar panels selected – **monocrystalline or polycrystalline panels**
- Manufacturing technology and efficiency of the solar inverter selected
- Solar brand opted
- Type of solar power plant – on-Grid, off-grid, or hybrid

Concerning the 1 MW solar power plant subsidy 2020, the **government provides subsidies** on solar plants for residential setups and housing societies. No subsidy is offered for solar systems being installed for commercial purposes.



### Tata Solar Power Plants

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Country of Origin: **Made in India**

Minimum Order Quantity: **10 KW**

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# LIE REPORT

3.24 (± 10%) MWp GRID CONNECTED  
SOLAR POWER PLANT

## Data by Global Solar Atlas by World Bank Group

### 1. DDA, Sarai Kale Khan

#### GLOBAL SOLAR ATLAS BY WORLD BANK GROUP

##### Delhi

28.595028°, 077.258944°  
unnamed road, Delhi, India  
Time zone: UTC+05:30, Asia/Kolkata [IST]

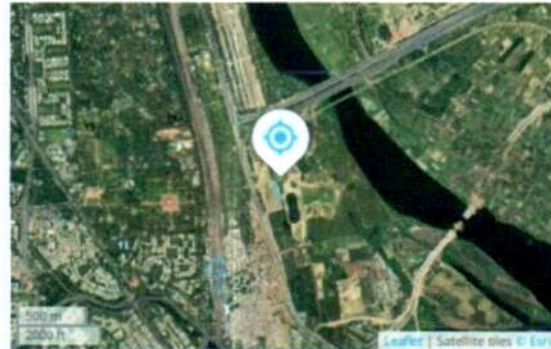
Report generated: 5 Sep 2023

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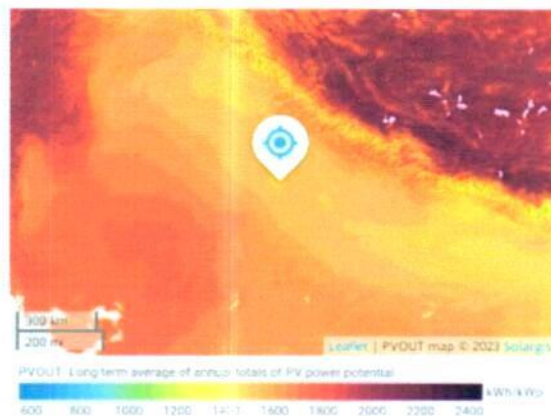
###### Map data

		Per year
Specific photovoltaic power output	PVOUT specific	1469.2 kWh/kWp
Direct normal irradiation	DNI	1159.2 kWh/m <sup>2</sup>
Global horizontal irradiation	GHI	1715.7 kWh/m <sup>2</sup>
Diffuse horizontal irradiation	DIF	928.6 kWh/m <sup>2</sup>
Global tilted irradiation at optimum angle	GTI opta	1864.1 kWh/m <sup>2</sup>
Optimum tilt of PV modules	OPTA	26 / 180
Air temperature	TEMP	24.9 °C
Terrain elevation	ELE	202 m

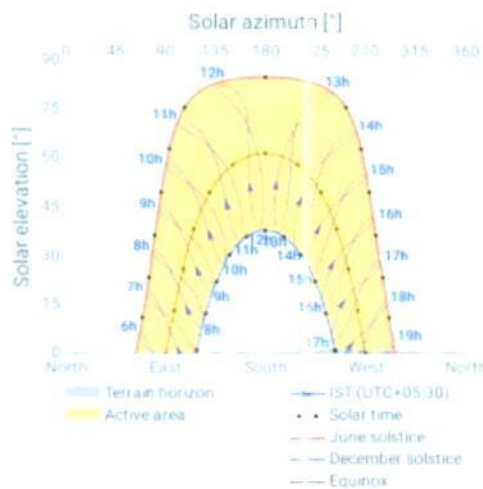
###### Map



###### PVOUT map



###### Horizon and sunpath



Abhi



# LIE REPORT

3.24 (± 10%) MWp GRID CONNECTED  
SOLAR POWER PLANT

## GLOBAL SOLAR ATLAS BY WORLD BANK GROUP

### PV ELECTRICITY AND SOLAR RADIATION

#### Annual averages

Direct normal irradiation

**1166.5**

kWh/m<sup>2</sup> per year

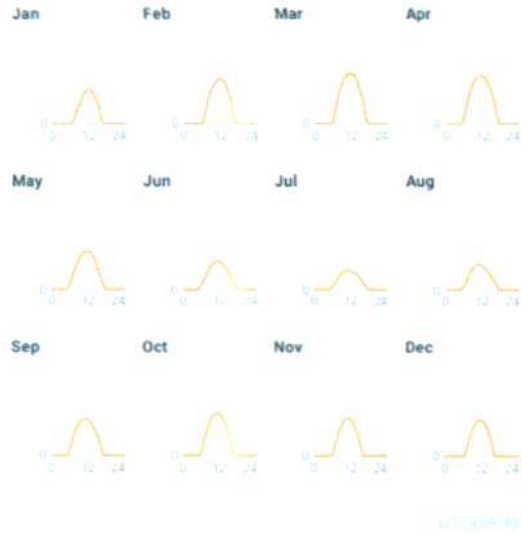
#### Monthly averages

Direct normal irradiation



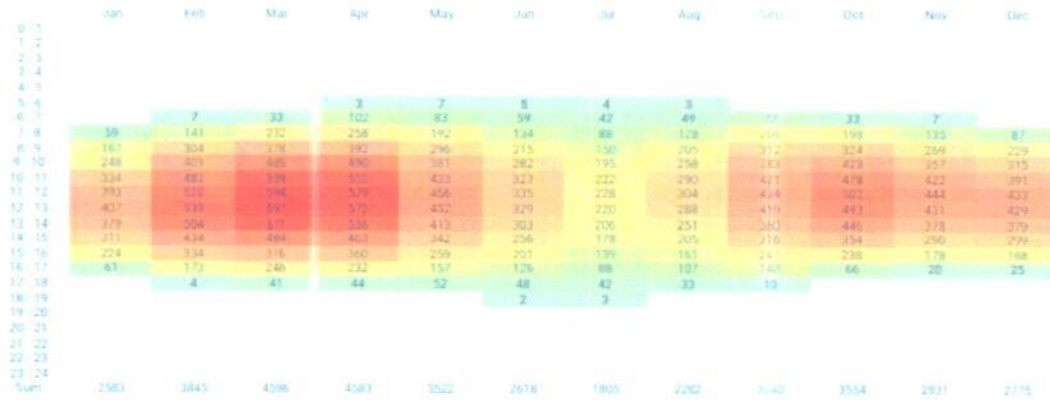
#### Average hourly profiles

Direct normal irradiation (kWh/m²)



#### Average hourly profiles

Direct normal irradiation (kWh/m²)



*Adi*

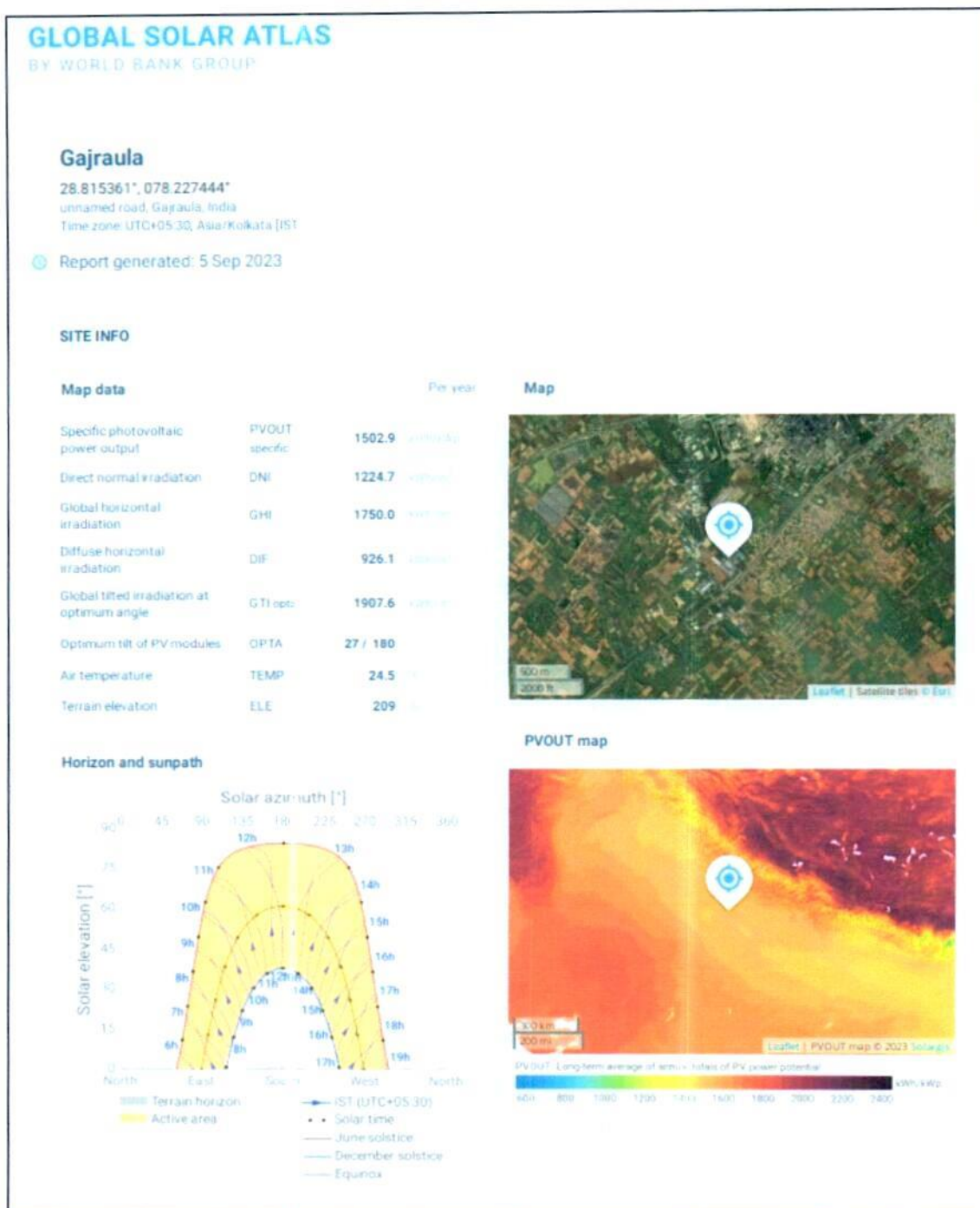
Valuers & Techno Engineering Consultants Pvt. Ltd.



# LIE REPORT

3.24 ( $\pm 10\%$ ) MWp GRID CONNECTED  
SOLAR POWER PLANT

## 2. RACL, Gajraula



*[Handwritten signature]*

*[Circular stamp: R.K. Associates Pvt. Ltd., Valuation Center of Excellence, Research Centre]*

# LIE REPORT

3.24 (± 10%) MWp GRID CONNECTED  
SOLAR POWER PLANT

## GLOBAL SOLAR ATLAS BY WORLD BANK GROUP

### PV ELECTRICITY AND SOLAR RADIATION

#### Annual averages

Direct normal irradiation

**1231.2**

kWh/m<sup>2</sup> per year

#### Average hourly profiles

Direct normal irradiation (W/m<sup>2</sup>)



#### Monthly averages

Direct normal irradiation



#### Average hourly profiles

Direct normal irradiation (W/m<sup>2</sup>)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0-1												
1-2												
2-3												
3-4												
4-5												
5-6												
6-7		2	49	6	13	11	6	2		47	20	
7-8	66	147	273	134	120	78	53	60	117	243	179	91
8-9	163	309	415	409	333	232	152	205	319	311	308	219
9-10	223	413	515	506	413	296	196	269	384	463	400	303
10-11	286	480	581	569	465	333	224	297	415	517	458	377
11-12	338	534	638	599	488	348	233	312	432	535	475	429
12-13	375	537	615	564	483	343	231	306	426	526	461	430
13-14	366	509	552	508	462	329	219	273	390	478	413	388
14-15	314	443	508	469	393	292	194	232	329	388	323	311
15-16	225	345	407	393	310	252	157	186	214	271	195	190
16-17	45	173	252	259	200	153	107	133	146	98	23	25
17-18		4	35	52	72	62	49	35	5			
18-19						1						
19-20												
20-21												
21-22												
22-23												
23-24												
Sum	2403	3890	4863	4833	3987	2865	1923	2450	3413	3898	3250	2763

*Abhi*



### 3. Sirohi, Rajasthan

## GLOBAL SOLAR ATLAS BY WORLD BANK GROUP

### Rajasthan

24.95875°, 072.885778°

NH62, Rajasthan, India

Time zone: UTC+05:30, Asia/Kolkata [IST]

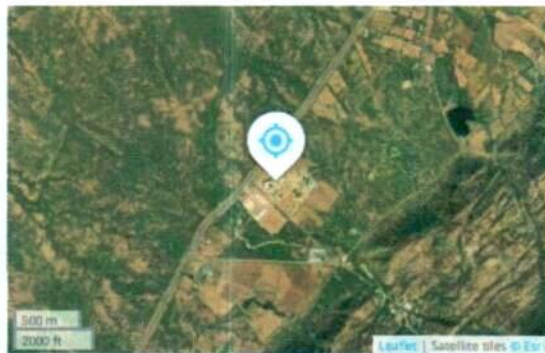
Report generated: 5 Sep 2023

#### SITE INFO

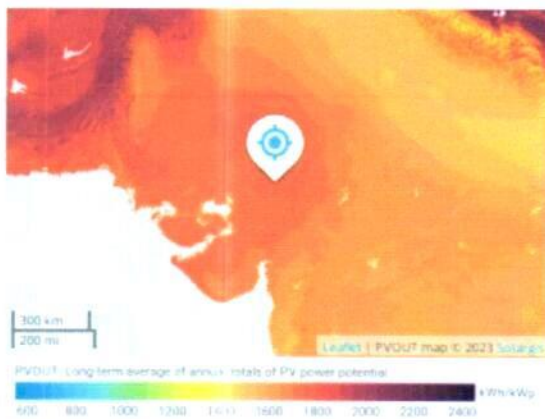
##### Map data

		Per year
Specific photovoltaic power output	PVOUT specific	1749.6 kWh/kwp
Direct normal irradiation	DNI	1936.5 kWh/m <sup>2</sup>
Global horizontal irradiation	GHI	2049.4 kWh/m <sup>2</sup>
Diffuse horizontal irradiation	DIF	775.8 kWh/m <sup>2</sup>
Global tilted irradiation at optimum angle	GHI opta	2272.4 kWh/m <sup>2</sup>
Optimum tilt of PV modules	OPTA	28 / 180
Air temperature	TEMP	26.3 °C
Terrain elevation	ELE	279 m

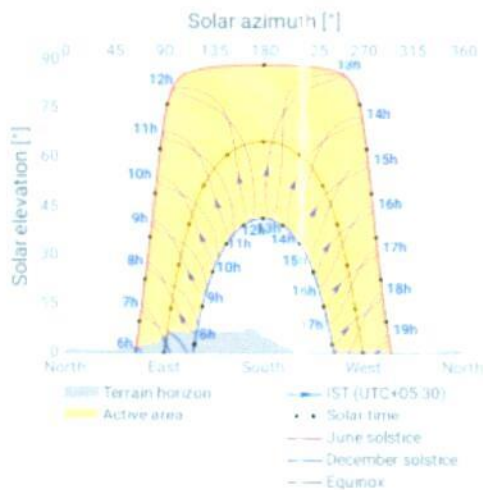
##### Map



##### PVOUT map



##### Horizon and sunpath



*[Handwritten signature]*

*[Circular stamp: rk Associates, Valuers & Techno Engineering Consultants (P) Ltd., 10/10, 1st Floor, 1st Stage, 1st Cross, 1st Main Road, 1st Stage, 1st Cross, 1st Main Road, 1st Stage, 1st Cross, 1st Main Road]*

# LIE REPORT

3.24 (± 10%) MWp GRID CONNECTED  
SOLAR POWER PLANT

## GLOBAL SOLAR ATLAS BY WORLD BANK GROUP

### PV ELECTRICITY AND SOLAR RADIATION

#### Annual averages

Direct normal irradiance

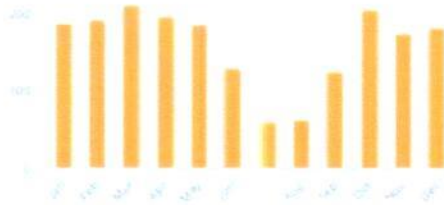
**1940.8**

KWh/m<sup>2</sup> per year

#### Monthly averages

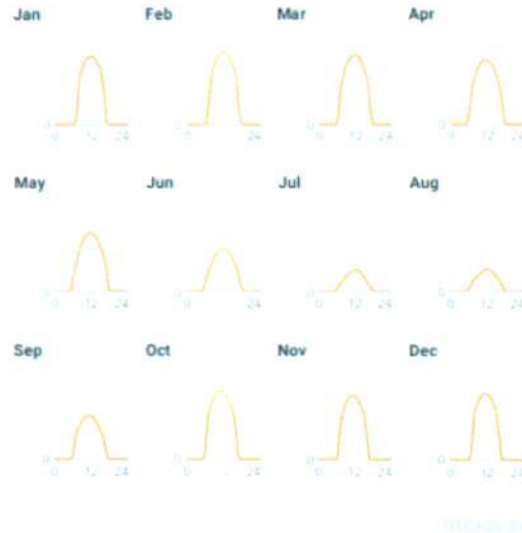
Direct normal irradiation

kWh



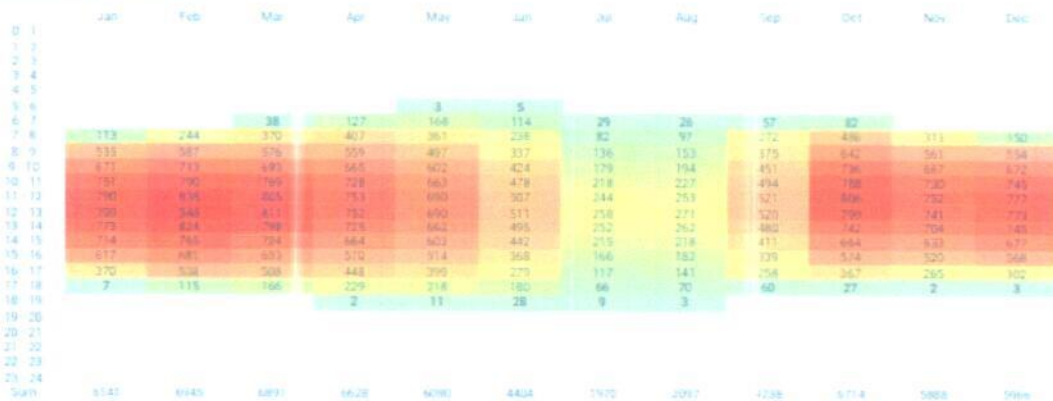
#### Average hourly profiles

Direct normal irradiance (W/m<sup>2</sup>)



#### Average hourly profiles

Direct normal irradiation (W/m<sup>2</sup>)



*Signature*





# LIE REPORT

3.24 (± 10%) MWp GRID CONNECTED  
SOLAR POWER PLANT

## Layout Plans

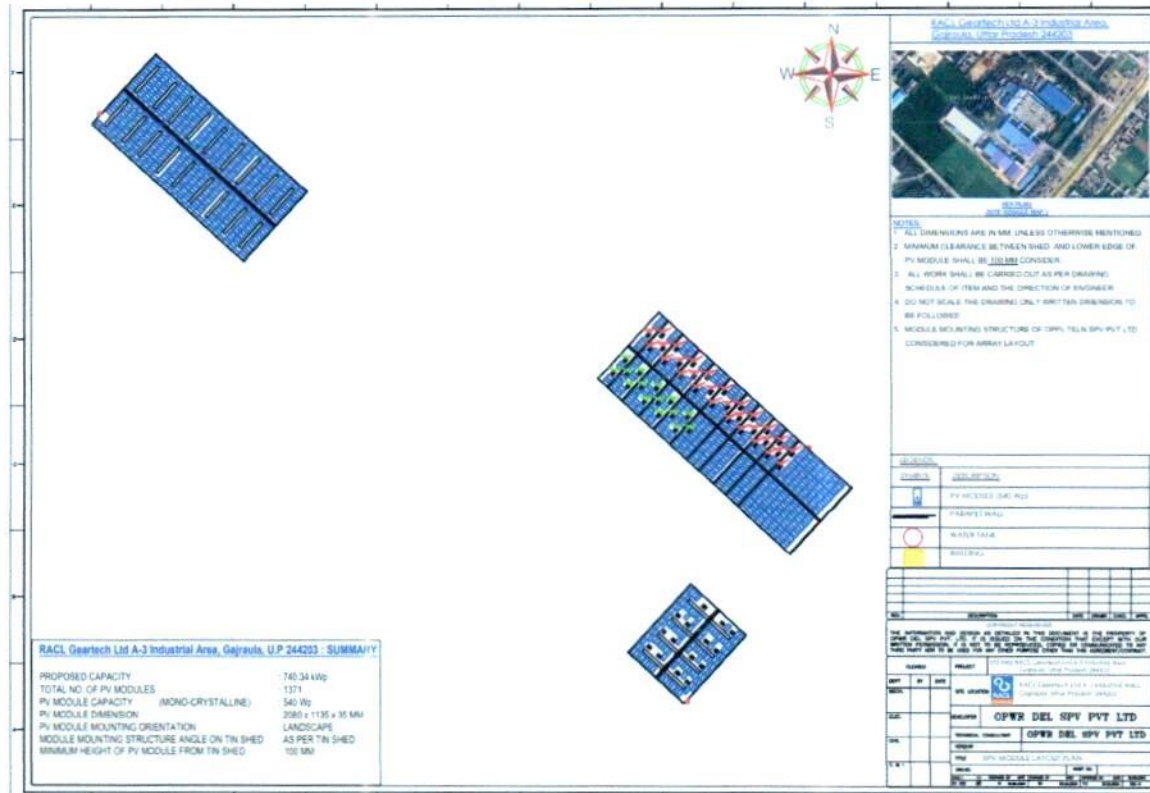
### 1. DDA, Sarai Kale Khan



# LIE REPORT

3.24 (± 10%) MWp GRID CONNECTED  
SOLAR POWER PLANT

## 2. RACL, Gajraula





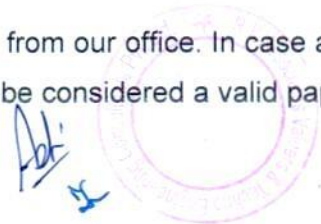
### GOVERNMENT MEDICAL COLLEGE SIROHI: SUMMARY

PROPOSED CAPACITY	: 500 KwP
TOTAL NO. OF PV MODULES	: 926 NOs
PV MODULE CAPACITY (MONO-CRYSTALLINE)	: 574 Wp
PV MODULE DIMENSION	: 2284X1137X35MM
PV MODULE MOUNTING ORIENTATION	: PORTRAIT ,LANDSCAPE
MODULE MOUNTING STRUCTURE ANGLE	: 20°, As Per Shed

PROJECT		GOVERNMENT MEDICAL COLLEGE SIROHI	
CLIENT		GOVERNMENT MEDICAL COLLEGE SIROHI	
DESIGNER		OPWR DEL SPV PVT. LTD.	
CONTRACTOR		OPWR DEL SPV PVT. LTD.	
DATE		20/08/2024	
BY		[Signature]	
FOR		[Signature]	

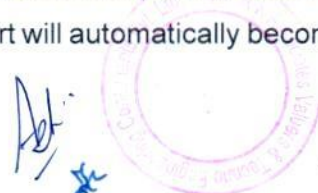
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## LIE REPORT

3.24 (± 10%) MWp GRID CONNECTED  
SOLAR POWER PLANT

### FOR INTERNAL USE

Place : Noida

SURVEYED BY: NA as Desktop LIE

Date : 11.09.2023

PREPARED BY: Abhinav Chaturvedi

Note : This report contains 40 pages

REVIEWED BY: Sr. V.P. Projects



For R.K Associates Valuers & Techno Engineering Consultants (P) Ltd.

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