



SOLAR GROUPED PROJECT BY ACME GROUP (EKIESL-VCS-AUG-16-01)



Document Prepared by EKI Energy Services Limited

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CONTENTS

PROJECT DETAILS	4
1.1 Summary Description of the Implementation Status of the Project	4
1.2 Audit History.....	5
1.3 Sectoral Scope and Project Type	6
1.4 Project Proponent	6
1.5 Other Entities Involved in the Project	9
1.6 Project Start Date	10
1.7 Project Crediting Period	10
1.8 Project Location	10
1.9 Title and Reference of Methodology	12
1.10 Double Counting and Participation under Other GHG Programs	13
1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions.....	13
1.12 Sustainable Development Contributions	13
1.13 Commercially Sensitive Information.....	17
2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT	17
2.1 Stakeholder Engagement and Consultation.....	17
2.2 Risks to Stakeholders and the Environment.....	21
2.3 Respect for Human Rights and Equity	23
2.4 Ecosystem Health	26
3 IMPLEMENTATION STATUS	27
3.1 Implementation Status of the Project Activity	27
3.2 Deviations	34
3.3 Grouped Projects	36
3.4 Baseline Reassessment.....	36
4 DATA AND PARAMETERS.....	36
4.1 Data and Parameters Available at Validation	36
4.2 Data and Parameters Monitored.....	38
4.3 Monitoring Plan.....	40
5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS	47
5.1 Baseline Emissions	47

5.2	Project Emissions	48
5.3	Leakage Emissions	48
5.4	GHG Emission Reductions and Carbon Dioxide Removals	48
APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION.....		50
APPENDIX 2: METER CALIBRATION DETAILS		51
APPENDIX 3: TRAINING RECORDS		54

PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The grouped project activity is a step towards supporting the implementation and installation of grid connected renewable energy power plants in India. The implementation of grouped project activity ensures energy security; diversification of the grid generation mix and sustainable growth of the electricity generation sector in India.

The grouped project activity is a voluntary action and each SPV is the Project Proponent for their project activity Instance. ACME Cleantech Solution Private limited as a parent company formed different SPV (Special Purpose Vehicles) for solar projects and projects are developed by name of SPVs. There are no mandatory laws or regulations existing in India requiring PP or any other party to develop a programme for renewable generation plants. The project activity instance is running very smoothly with scheduled maintenance activity since commissioning.

The details of 11 project proponents and 13 project activity instances involved in current monitoring period are as below.

Project Activity instance	PP (SPV) Name	Commercial Operation Date	MW
1	Mihit Solar Power Private Ltd. 25 MW	21-March-2016	74
	Mihit Solar Power Private Ltd. 25 MW	21-March-2016	
	Mihit Solar Power Private Ltd. 24 MW	28-February-2016 (for 11.5 MW) 30-March-2016 (for 12.5 MW)	
2	ACME Jaisalmer Solar Power Private Ltd.	12-May-2016	20
3	Aarohi Solar Private Ltd.	29-March-2016	50
4	Dayanidhi Solar Power Private Ltd.	01-April-2016	40
5	Niranjana Solar Energy Pvt. Ltd.	31-March-2016	20
6	Vishwatma Solar Energy Private Ltd.	02-April-2016 (for 10 MW) 30-April-2016 (for 20 MW)	30
7	Acme Raipur Solar Power Private Ltd.	09-January-2016 (for 23 MW) 15-March-2016 (for 7 MW)	30
8	Dayakara Solar Power Private Ltd.	21-June-2016	30
9	Grahati Solar Energy Pvt Ltd	20-July-2016 (for 20 MW) 03-August-2016 (for 30 MW)	50
10	Acme Odisha Solar Power Private Ltd.	22-June-2015	25
11	Eminent Solar Power Private Ltd.	09-February-2017	12.5
Total Capacity			381.5

The total GHG Emission reductions generated in current monitoring period of 01-February-2023 to 15-April-2024 (Inclusive of both the dates) are 805,459 tCO₂e. No more project activity instance is included in the grouped project activity during current monitoring period.

1.2 Audit History

Audit Type	Period	Program	VVB Name	Number of years
Validation/ Verification (joint)	22-June-2015-- 31-January-2017	Verified Carbon Standard (VCS)	Carbon Check (India) Pvt. Ltd.	1 Year 7 Months 9 Day
Verification	01-February- 2017--30- November-2017	Verified Carbon Standard (VCS)	LGAI Technological Center S.A. (Applus+ Certification)	10 Months
Verification	01-December- 2017--30- September-2018	Verified Carbon Standard (VCS)	LGAI Technological Center S.A. (Applus+ Certification)	10 Months
Verification	01-October- 2018--31 August- 2019	Verified Carbon Standard (VCS)	LGAI Technological Center S.A. (Applus+ Certification)	11 Months
Verification	01-September- 2019--31 December-2020	Verified Carbon Standard (VCS)	LGAI Technological Center S.A. (Applus+ Certification)	1 Year 4 Months
Verification	01-January- 2021--31-August- 2021	Verified Carbon Standard (VCS)	LGAI Technological Center S.A. (Applus+ Certification)	8 Months
Verification	01-September- 2021--30-April-- 2022	Verified Carbon Standard (VCS)	LGAI Technological Center S.A. (Applus+ Certification)	8 Months
Verification	01-May-2022-- 31-January-2023	Verified Carbon Standard (VCS)	LGAI Technological Center S.A. (Applus+ Certification)	9 Months
Verification	01-February- 2023 -- 15-April- 2024	Verified Carbon Standard (VCS)	TUV SUD	1 Years 2 Months 15 Days
Total	22-June-2015-- 15-April-2024	Verified Carbon Standard (VCS)	-	8 Years 9 Months 24 Days

1.3 Sectoral Scope and Project Type

Sectoral scope ¹	1: Energy industries (renewable / non-renewable sources)
Project activity type	Renewable Energy Projects

1.4 Project Proponent

Organization name	Mihit Solar Power Private Ltd
Contact person	Gursharan Jassal
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

Organization name	ACME Jaisalmer Solar Power Pvt. Ltd.
Contact person	Gursharan Jassal
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

Organization name	Aarohi Solar Pvt. Ltd
Contact person	Jyoti Arora
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India

¹ Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: <https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes>

Telephone	+91-124-7117001
Email	info@acme.in

Organization name	Dayanidhi Solar Power Pvt. Ltd.
Contact person	Manish Karna
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

Organization name	Niranjana Solar Energy Pvt. Ltd.
Contact person	Yudhvir Singh Gulia
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

Organization name	Vishwatma Solar Energy Pvt Ltd.
Contact person	Ashish K. Saxena
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

Organization name	Acme Raipur Solar Power Pvt. Ltd.
Contact person	Rajesh Sodhi
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

Organization name	Dayakara Solar Power Pvt Ltd
Contact person	Rajesh Sodhi
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

Organization name	Grahati Solar Energy Pvt Ltd
Contact person	Jyoti Arora
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

Organization name	Acme Odisha Solar Power Pvt Ltd
Contact person	Gursharan Jassal

Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

Organization name	Eminent Solar Power Pvt Ltd
Contact person	Gursharan Jassal
Title	Director
Address	Plot No.152, Sector – 44, Gurgaon -122 002, Haryana, India
Telephone	+91-124-7117001
Email	info@acme.in

ACME Cleantech Solutions Private Limited as a parent company of all project activity instances formed as different SPV (Special Purpose Vehicles) for solar projects and projects are developed by name of SPVs.

1.5 Other Entities Involved in the Project

Organization name	EKI Energy Services Limited
Role in the project	Project Consultant
Contact person	Ankit Sethiya
Title	Manager – Operations
Address	Office No. 201, Plot 48, Scheme 78, Part 2, Vijay Nagar, Indore-452010 Madhya Pradesh, India
Telephone	0731 428 9086
Email	ankit@enkingint.org , registry@enkingint.org

1.6 Project Start Date

Project start date	22-June-2015
Justification	As per VCS standard Version 4.7, The start date for a non-AFOLU project is the date on which the project began generating GHG emission reductions or removals. So, the first project activity instance of the grouped project was commissioned and power generation started on 22-June-2015. This project activity instance is SPV- Acme Odisha Solar Power Pvt Ltd under ACME group having installed capacity of 25 MW.

1.7 Project Crediting Period

Crediting period	☐ Seven years, twice renewable ☐ Ten years, fixed ☒ Other (10 Years twice renewable as per Approved register documents)
Start and end date of first or fixed crediting period	22-June-2015 to 21-June-2025

1.8 Project Location

All the project activity instances in the grouped project activity would be located within geographical boundaries of Republic of India. Thus, geographical area of grouped project is India.

The geographical boundary is delineated in the form of extreme geographic coordinates as follows²:

Latitude - 8° 4' to 37° 6' N

Longitude - 68° 7' to 97° 25' E

Each SPV location is being mentioned over section 3.1.

The map of India is as indicated in the following figure:

² Precise latitude and longitude details of each project instances are provided in section 3.1 of this monitoring report. Please refer below web link for the range of co-ordinates https://en.wikipedia.org/wiki/Geography_of_India



The location details of each instance of the project activity are mentioned in the table below: -

Table 1 Details of the project locations-

SPV Name	MW	State	Project Location /Sub Station	Village	Tehsil	District
Mihit Solar Power Private Ltd.	25	Punjab	Kherakhurd	Khaira Khurd	Sardulgarh	Mansa
Mihit Solar Power Private Ltd.	25	Punjab	Mankhera	Mankhera	Sardulgarh	Mansa
Mihit Solar Power Private Ltd.	24	Punjab	Jandekalan	Jhande Kalan	Sardulgarh	Mansa
ACME Jaisalmer Solar Power Pvt. Ltd.	20	Andhra Pradesh	Rayachotti	Pothukurupalli	Ramapuram Mandal	Kadapa
Aarohi Solar Pvt. Ltd.	50	Andhra Pradesh	Hindupur	Kalipi	Roddam Mandal	Anathapur
Dayanidhi Solar Power Pvt. Ltd.	40	Andhra Pradesh	Santipuram	Gunjarlapalle & Morasanapalle	Santipuram Mandal	Chittoor
Niranjana Solar Energy Pvt. Ltd.	20	Andhra Pradesh	Pattikonda	Puchakayalam anda	Pattikonda Mandal	Kurnool

Vishwatma Solar Energy Pvt Ltd.	30	Andhra Pradesh	Yemmiganur	Kadivella	Yemmiganur	Kurnool
Acme Raipur Solar Power Pvt. Ltd.	30	Chhattisgarh	Bagbahara	Bhikapali	Bagbahara	Mahasamund
Dayakara Solar Power Pvt Ltd	30	Telangana	Maddur	Damkanpur	Maddur	Mehbubnagar
Grahati Solar Energy Pvt Ltd	50	Telangana	Balanagar	Narellapalli	Balanagar	Mehbubnagar
Acme Odisha Solar Power Pvt Ltd	25	Odisha	Bolangir	Mursing & Sikuan	Deogaon	Bolangir
Eminent Solar Power Pvt Ltd.	12.5	Uttarakhand	Udham Singh Nagar	Ratanpur Bazpur	Bajpur	Udham Singh Nagar
Total (MW)	381.5					

1.9 Title and Reference of Methodology

Type (methodology, tool or module)	Reference ID, if applicable	Title	Version
Methodology	ACM0002	Grid-connected electricity generation from renewable sources	17.0 ³
Methodology	AMS I.D	Grid connected renewable electricity generation	18.0 ⁴
TOOL	07	Tool to calculate the emission factor for an electricity system.	05.0 ⁵
TOOL	01	Tool for the demonstration and assessment of additionality.	07.0 ⁶

³ <https://cdm.unfccc.int/methodologies/DB/8W400U6E7LFHHYH2C4JR1RJWWO4PVN>

⁴ <https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTFQ00FQQH4SBK>

⁵ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v5.0.pdf>

⁶ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

1.10.2 Registration in Other GHG Programs

Was the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the *VCS Program Definitions* for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the *VCS Program Definitions* for definition of GHG-related environmental credit system.

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

1.12 Sustainable Development Contributions

The four indicators stipulated by the NCDMA, MOEF&CC (National CDM Authority) which is the DNA (Designated National Authority) of India, for defining sustainable development are:

Social well-being:

- The project is implemented in a rural area that does not have proper roads and other infrastructure facilities. The project activity has augmented infrastructural development like roads etc. in the area, thus benefitting local communities.
- The project activity leads to enhanced direct and indirect employment opportunities at all levels from unskilled to skilled workers.

Economic well-being:

- The project activity involves capital investments, thus leading to the overall development of the region.
- The project activities lead to enhanced business opportunities for local stakeholders like consultants, suppliers, manufacturers, contractors etc. All this has led to improved financial security and overall development of the region.

Environmental well-being:

- The project activity being solar power project has minimum environmental impact.
- Contribute in bridging the demand-supply gap of electricity by producing green energy
- The electricity generated by the project activity is supplied to the Unified Indian grid, which otherwise would have been generated by fossil fuel fired power plants in the grid.
- The project activity also helps in conservation of depleting fossil fuels which at present are predominantly used for power generation.

Technical well-being:

The project activity is a clean and eco-friendly type of power generation in comparison to fossil fuel-based projects. This not only helps reduce environmental pollution but also helps in conserving fossil fuels.

The Project activity is a new facility (Greenfield) and the electricity generated by the project is exported to the Indian electricity grid. The project therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The Project Proponent plans to avail the VCS benefits for the project. In the Pre- project scenario the entire electricity, delivered to the grid by the project activity, would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

In a nutshell, the various contributions by the Project Proponent (PP) through the Special Purpose Vehicles (SPVs) towards the SDGs has been given below: -

1. **SDG 7 Affordable and Clean Energy:** Since the project activity is a solar power project, it generates clean energy. The Project activity is a new facility (Greenfield) and the electricity generated by the project is exported to the Indian electricity grid. The project

therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid.

2. **SDG 13 Climate Action:** The main purpose of this project activity is to generate clean form of electricity through renewable solar energy sources. The project activity involves total capacity of 381.5 MW solar power project which are installed in Panjab, Andhra Pradesh, Chhattisgarh, Telangana, Odisha and Uttarakhand states of India. ACME Cleantech Solutions Private Limited as a parent company formed different SPV (Special Purpose Vehicles) for solar projects and projects are developed by name of SPVs.
3. **SDG 4 Quality Education:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Table 2: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	7.2	7.2.1: Renewable energy share in the total final energy consumption	Implemented activities to increase	About 823,831 MWh renewable electricity has supplied to Indian grid during the reported period that helps to increase the renewable energy share in the energy mix.	Overall, 1,739,748 (483,649+ 432,268 + 823,831) MWh renewable electricity will be used that helps to increase the renewable energy share in the energy mix.
2)	13.0	13.2.2: Total greenhouse gas emissions per year	Implemented activities to increase	By supplying 823,831 MWh clean electricity (generated through this solar project) to Indian grid, the project avoided release of 805,459 tCO ₂ e in to the atmosphere during the reporting period.	Overall prevented the release of 1,700,948 (472,857+ 422,632 + 805,459) tCO ₂ e into the atmosphere since project commissioning.
3)	4.4	4.4.1: Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill	Implemented activities to increase	Together with the technology supplier, the Project organize 272 training during current monitoring period. The training documents can be referred in Error! Reference source not found..	Overall, 450 (272+ 178) trainings are provided.

1.13 Commercially Sensitive Information

Not applicable. No any commercially sensitive information has been excluded from the public version of the project description. There is no commercially sensitive information.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Stakeholder Identification	Following stakeholders have been identified for this project activity by analyzing the beneficiaries /people who are directly affected in daily life by the project activity, impact of local/regional/provincial/national government policies in implementation and operation of the project activity, other groups having social/political influences in the project location. 1. Gram panchayat Representatives 2. Local Villagers 3. Civil contractors 4. All employees (PP's) 5. Representatives from the local pollution control board
Legal or customary tenure/access rights	Among the local stakeholders, employees have access to the project site and access to the resources (as per their designation/work profile). Local community members have access to project site if they want to share any VCS Project feedback/grievance about the project activity (implementation and operation)/ Local NGOs/representatives from media are welcome to the project with prior appointment. Local/provincial/national government officials can also visit the project for any inspection regarding compliance to the regulations or any other purpose as required by the government.
Stakeholder diversity and changes over time	Stakeholders identified for this project activity are diverse in nature – in terms of socio-economic status, age and gender wise and the diversity is unlikely to change over time.
Expected changes in well-being	Expected changes 1. Economic well-being – the project activity is likely to provide employments to the locality thus economic well beings are expected

	2. Environmental well-being – as this project activity cuts down GHG emissions in the atmosphere generating electricity using solar energy; thus, it will bring environmental well-being in the locality.				
Location of stakeholders					
	SPV Name	M W	State	Project Location	District
	Mihit Solar Power Private Ltd.	25	Punjab	Kherakhurd	Mansa
	Mihit Solar Power Private Ltd.	25	Punjab	Mankhera	Mansa
	Mihit Solar Power Private Ltd.	24	Punjab	Jandekalan	Mansa
	ACME Jaisalmer Solar Power Pvt. Ltd.	20	Andhra Pradesh	Rayachotti	Kadapa
	Aarohi Solar Pvt. Ltd.	50	Andhra Pradesh	Hindupur	Anathapur
	Dayanidhi Solar Power Pvt. Ltd.	40	Andhra Pradesh	Santipuram	Chittoor
	Niranjana Solar Energy Pvt. Ltd.	20	Andhra Pradesh	Pattikonda	Kurnool
	Vishwatma Solar Energy Pvt Ltd.	30	Andhra Pradesh	Yemmiganur	Kurnool
	Acme Raipur Solar Power Pvt. Ltd.	30	Chhattisgarh	Bagbahara	Mahasamund
	Dayakara Solar Power Pvt Ltd	30	Telangana	Maddur	Mehbubnagar
	Grahati Solar Energy Pvt Ltd	50	Telangana	Balanagar	Mehbubnagar
	Acme Odisha Solar Power Pvt Ltd	25	Odisha	Bolangir	Bolangir
	Eminent Solar Power Pvt Ltd.	12.5	Uttarakhand	Udham Singh Nagar	Udham Singh Nagar
Location of resources	Not Applicable				
	There no the location of territories and resources which stakeholders own or to which they have customary access.				

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	As a part of on-going communication with local stakeholders, end users were verbally informed about the grievance register during the current monitoring period. Thus, ongoing communication of stakeholders was followed through grievance mechanism. If any concerns received during operation of project activity, same were to be addressed if relevant to project activity. Stakeholders' consultation is a continuous process and hence a feedback register is kept at the project site office where any stakeholder can come and share his/her feedback. The feedback irrespective of the type is taken care by PP with utmost priority.
Date(s) of stakeholder consultation	-
Communication of monitored results	The monitoring results are communicated from the concerned individuals (stakeholders) to PP, through the grievance register. The site officials acknowledge and address the comments, suggestions, or grievances submitted by stakeholders, resolving issues as needed. Identified stakeholders were local community members i.e., local villagers, local government officials (village council members), local NGO workers and media personnel. Stakeholders were invited through invitation letter – local community members were invited through invitation letter while local government, local NGO workers and media personnel were invited mostly by telephonic communications. Languages used in invitation to stakeholders included both English and local language.
Consultation records	The meeting was outlined towards making aware local stakeholders including local community, local administration representatives, NGOs working for environmental cause etc., about the project activity that involves electricity generation using solar energy through solar PV technology litter with the primary objective of reducing emissions of GHGs in compared to pre-project or baseline scenario.
Stakeholder input	The feedbacks/comments received from stakeholders were quite positive and no negative comments were received. The questions asked by stakeholders were only on process and these are explained by PP representatives.

2.1.3 Free, Prior, and Informed Consent

Consent	Following clause 3.18.8 of VCS standard v.4.7⁷, the project proponent has disclosed, at a minimum, the following information: 1. The nature, size, pace, reversibility, and scope of the solar project activity; 2. The reason/purpose of the project, which is to implement the project activity that utilizes the renewable source of solar energy to produce electricity; 3. The locations that will be affected, primarily the building premises where the solar projects are implemented. 4. Moreover, information regarding personnel likely to be involved in the execution of the project activity, (including Indigenous Peoples, private sector staff, research institutions, government employees, and others), was shared with stakeholders, and the project was implemented after their collective consent.
Outcome of FPIC	Adhering to the FPIC rights of the stakeholders, they were informed in advance regarding the implementation, the overall impacts and other relevant details of the project activity, through the stakeholders' consultation. And only after receiving the collective consent of the stakeholders, the project activity was implemented. The project has not encroached on land, relocated people without consent, and forced physical or economic displacement.

2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome
There has been no grievance received for the current monitoring period	Not Applicable

2.1.5 Public Comments

Summary of comments received	Actions taken
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⁷ <https://verra.org/wp-content/uploads/2024/04/VCS-Standard-v4.7-FINAL-4.15.24.pdf>

No any comment received in this current monitoring period.	Not Applicable
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2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

The management team of the project proponent has significant expertise and experience in implementing similar project activities, including community engagement. There are no new entities involved in the project's design or implementation, ensuring continuity and stability within the project's management. The team has a proven track record of managing construction, operations, and community engagement, with a particular focus on environmental and social aspects. This includes overseeing registration, monitoring, measurement, reporting, and review processes.

The project team operates within an organizational structure approved by the board members and consists of professionals with diverse expertise in environmental management, data handling, and project management. This combined experience ensures the effective implementation and monitoring of the project, fully compliant with Verra requirements. In case there are any areas where additional experience is needed, the project proponent has the necessary internal and external resources to address these gaps and ensure successful project delivery.

2.2.2 Risk assessment

	Risk identified	Mitigation or preventative measure(s) taken
Natural and human-induced risks to stakeholders' wellbeing	No Natural and human-induced risks to stakeholders' wellbeing	The project activity site is located in a low-risk area with no history of natural disasters such as earthquakes, floods, or landslides. It complies with all relevant local and international safety regulations, including occupational health and safety standards, to ensure the protection of employees and stakeholders. Additionally, the project activity does not involve hazardous materials or processes that could pose risks related to pollution, accidents, or health hazards. Regular monitoring

		systems and emergency response plans have been established to address any unforeseen events, further safeguarding stakeholders. Community engagement activities and stakeholder consultations were conducted, and no concerns regarding safety or wellbeing were identified. Based on this evaluation, it is concluded that the project activity poses no significant risks to stakeholders' wellbeing, either from natural or human-induced causes
Risks to stakeholder participation	No risk to stakeholder participation is anticipated because that the project or initiative in question is expected to proceed smoothly without significant barriers or obstacles that could hinder stakeholders from being involved or engaged.	No mitigation or preventive measure is required as no risk has been identified.
Working conditions	No risk identified	PP has taken all measures to ensure proper working condition by implementing EHS policy. Project is solar activity, which is not involving any aspect which can make difficult to work.
Safety of women and girls	No risk identified	PP ensures safety of women and girls in the project site and abide by the relevant national laws of "The Protection of Women from Domestic Violence Act, 2005" ⁸ . Project is solar activity, which is not involving any aspect which can create unsafe condition of women and girls. Employees shall comply with all guidelines framed from

⁸ <https://wcd.delhi.gov.in/scert/protection-women-domestic-violence-act-2005>

		time to time including the Prevention of Sexual Harassment (POSH) guidelines of the Company.
Safety of minority and marginalized groups, including children	No risk identified	PP ensures safety of minority and marginalized communities, including children at the project site as per the national laws of “The Child Labour (Prohibition and Regulation) Act, 1986” ⁹ .
Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers)	No risk identified	There is negligible pollution in air, noise, water due to implementation and operation of the project activity. Solar create a waste hazardous and non-hazardous or same will be applicable as per “Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016 and amended in November, 2021”.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

	Risks identified ¹⁰	Mitigation or preventative measure(s) taken
Discrimination	No risk identified	PP has issued a statement affirming the absence and prevention of discrimination within its operations. PP is committed to establishing a workplace environment devoid of discrimination in accordance with local regulations.
Sexual harassment	No risk identified	PP is committed to establishing a workplace environment devoid of

⁹ https://labour.gov.in/sites/default/files/act_2.pdf

¹⁰ The identified risks and commensurate mitigation or preventative measure(s) for forced labor, child labor, and human trafficking, must be inclusive of staff and contracted workers employed by third parties.

		Sexual harassment in accordance with local regulations. PP shall oblige to create a workplace free of sexual harassment as per national law of “The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013” ¹¹ .
Gender equity in labor and work	No risk identified	PP has provided a declaration stating its commitment to non-discrimination based on gender in job opportunities and wage distribution among workers.
Forced labor	No risk identified	PP has provided declaration that project activity does not use forced labor.
Child labor	No risk identified	PP has provided declaration that project activity does not use child labor.
Human trafficking	No risk identified	PP has provided declaration that project activity does not use victims of human trafficking.

2.3.2 Human Rights

Risks identified	Mitigation or preventative measure(s) taken
No Risk Identified	The following preventative measure by the PP has been taken for how the project is committed to safeguard the rights of IPs, LCs, and customary right holders, while following the international human rights law¹², the UNDRIP¹³ and ILO Convention 169- Free, Prior, and Informed Consent (FPIC): The project activity has obtained the FPIC from the local stakeholders including the IPs, LCs and customary right holders, ensuring their unforced

¹¹ <https://www.iitk.ac.in/wc/data/Sexual-Harassment-at-Workplace-Act.pdf>

¹² <https://www.ohchr.org/sites/default/files/Documents/Publications/fs9Rev.2.pdf>

¹³ https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

	consent before the project operation, respecting their right to make decisions. Non-discriminatory Participation in the Project Activity- The project distributed devices without cultural or social biases, safeguarding the rights of IPs, LCs, and customary rights holders to be free from discrimination. Employment due to the Project Activity- The project activity also leads to the employment from the IPs, LCs and customary right holders, enabling them to exercise their right to fair treatment in employment and salary.
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2.3.3 Indigenous Peoples and Cultural Heritage

Risks identified	Mitigation(s) or preventative measure taken
No Risk identified	The project activity does not impact the tangible or intangible cultural heritage or the indigenous people nearby.

2.3.4 Property Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	The land / property for the project activity belongs to the project proponent and, it can be supported through the relevant documents. Additionally, the project activity has obtained the free, prior and informed consent of the stakeholders (including the IPs, LCs, and customary rights holders). This ensures that their lands and property rights are protected and respected.

2.3.5 Benefit Sharing

Summary of the benefit sharing plan	Not applicable, since the benefits of the carbon credits lies with the project proponent.
Benefit sharing during the monitoring period	Not applicable, since PP is the sole owner of the revenue generated from the project activity.

2.4 Ecosystem Health

Risk identified		Mitigation or preventative measure(s) taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	No impact on biodiversity is likely to be caused. It is used for domestic purpose.
Soil degradation and soil erosion	No risk identified	No soil erosion and degradation are likely to be caused
Water consumption and stress	No risk identified	Water consumption will be of moderate level and hence stress is likely to be caused

2.4.1 Rare, Threatened, and Endangered species

Species or habitat	The project is not located in or adjacent to habitat for rare, threatened or endangered species, hence no species is likely to be harmed.
Areas needed for habitat connectivity	The project has not adversely impacted areas needed for habitat connectivity during the monitoring period.

Risks identified		Mitigation or preventative measure(s) taken
Habitats for rare, threatened, and endangered species	No risk identified	Project participant has been declared that project has not areas needed for habitat connectivity for rare, threatened, or endangered species during the monitoring period.
Areas for habitat connectivity	No risk identified	The project has not adversely impacted areas needed for habitat connectivity during the monitoring period.

2.4.2 Introduction of species

Since project activity is not involved with planting or species introduction & this section may be indicated as Not Applicable.

Species introduced	Classification	Justification for use	Adverse effects and mitigation
N/A	N/A	N/A	N/A

Existing invasive species	Mitigation measures to prevent the spread or continued existence of invasive species
N/A	N/A

	Risks identified	Mitigation or preventative measure(s) taken
Invasive species	No risk identified	No mitigation measures are required as no invasive species are identified.

2.4.3 Ecosystem conversion

	Risks identified	Mitigation or preventative measure(s) taken
Ecosystem conversion	No risk identified	There is no invasive species identified hence no mitigation measure is required.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project activity involves the installation of Solar Power Projects. The total capacity of the project is 381.5 MW. The project is promoted by ACME Cleantech Solution Private Limited with its different group SPVs. The project activity is using solar energy to generate direct current (DC) using photovoltaic modules that converts into alternating current by inverters. The project activity instances under grouped project activity are grid connected and will install a new power plant (i.e. solar PV) at a site where no renewable power plant was operating prior to the implementation of the project activity (green-field plant). The generated electricity is being supplied to grid or uses grid network for captive or third-party sale.

The project activity instances are small scale project activities (with power generation capacity less than 15 MW) and large-scale project activities (with power generation capacity more than 15 MW). The Project activity follows AMS I.D. Version 18 or ACM0002 Version 17.0 based on scale of project activity instances.

The solar power generated from the Project is displacing the electricity generated from thermal power stations feeding into Indian grid and replacing the usage of diesel generators for meeting the power demand during shortage periods. Since, the solar power is Green House Gas (GHG) emissions free, the power generated prevent the anthropogenic GHG emissions generated by the fossil fuel based thermal power stations comprising coal, diesel, furnace oil and gas. The estimation of GHG reductions by this project is limited to carbon dioxide (CO₂) only.

All project activity instances are photovoltaic (PV) plant/unit, the project activity instances would use solar energy to generate direct current from photo voltaic modules that will be converted into alternating current by inverters. The technical specifications of the plants are tabulated below:

The geo co-ordinates and the commissioning information of each instance of the project activity are mentioned in the table below.

PP Name	MW	COD	State	Project Location	Latitude (N)	Longitude (E)
Mihit Solar Power Private Ltd.	25	21-March2016	Punjab	Kherakhurd	29.66	75.26
Mihit Solar Power Private Ltd.	25	21-March2016	Punjab	Mankhera	29.59	75.24
Mihit Solar Power Private Ltd.	24	28-February-2016 (for 11.5 MW) 30-March-2016 (for 12.5 MW)	Punjab	Jandekalan	29.62	75.20
ACME Jaisalmer Solar Power Pvt. Ltd.	20	12-May-2016	Andhra Pradesh	Rayachotti	14.11	78.78
Aarohi Solar Pvt. Ltd.	50	29-March-2016	Andhra Pradesh	Hindupur	13.98	77.48
Dayanidhi Solar Power Pvt. Ltd.	40	01-April-2016	Andhra Pradesh	Santipuram	12.88	78.38
Niranjana Solar Energy Pvt. Ltd.	20	31-March-2016	Andhra Pradesh	Patthikonda	15.36	77.49
Vishwatma Solar Energy Pvt Ltd.	30	02-April-2016 (for 10 MW) 30-April-2016 (for 20 MW)	Andhra Pradesh	Yemmiganur	15.67	77.47
Acme Raipur Solar Power Pvt. Ltd.	30	09-January-2016 (for 23 MW) 15-March-2016 (for 7 MW)	Chattishg arh	Bagbahara	21.12	82.48
Dayakara Solar Power Pvt Ltd	30	21-June-2016	Telangana	Maddur	16.88	77.58
Grahati Solar Energy Pvt Ltd	50	20-July-2016 (for 20 MW) 03-August-2016 (for 30 MW)	Telangana	Balanagar	16.93	78.13
Acme Odisha Solar Power Pvt Ltd	25	22-June-2015	Odisha	Balongir,	20.54	83.38
Eminent Solar Power Pvt Ltd.	12.5	09-February-2017	Uttrakhan d	Uddham Singh Nagar	29.2	79.1

Technical Specifications of the 13 project activity instances and 11 different PPs

1. Mihit Solar Power Private Ltd.

a) Mihit Solar Power Private Ltd. Kherakhurd 25 MW

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- Talesun, BYD
Specification of Module	250 Wp, 255 Wp, 260 Wp
Total No of Module	102744
AC Capacity	25 MW
DC Capacity	26.24 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	Schneider Electric
AC Power	680
Total No. of Inverter	29
Transformer Details	
Make	Schneider Electric
Transformer KVA	25 Mva
Total Number PT & Trafo	1

b) Mihit Solar Power Private Ltd. Mankhera 25 MW

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- BYD, Talesun
Specification of Module	255 Wp, 260 Wp, 250 Wp
Total No of Module	102528
AC Capacity	25 MW
DC Capacity	26.25 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	Schneider Electric
AC Power	680
Total No. of Inverter	29
Transformer Details	
Make	Schneider Electric
Transformer KVA	25 Mva
Total Numb PT & Trafo	1

c) Mihit Solar Power Private Ltd. Jhandekalan 24 MW

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- Waree, BYD, Talesun
Specification of Module	250 Wp, 260 Wp, 275 Wp, 265 Wp, 255 Wp
Total No of Module	97886
AC Capacity	24 MW
DC Capacity	25.20 MW
Tilt Details	Seasonal Tilt

Inverter Details	
Make	ABB, TBEA, Delta
AC Power	1000
Total No. of Inverter	19
Transformer Details	
Make	Schneider Electric
Transformer KVA	25 Mva
Total Numb PT & Trafo	1

2. ACME Jaisalmer Solar Power Pvt. Ltd., Rayachotti (20 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- BYD, Talesun
Specification of Module	260 Wp, 255 Wp, 250 Wp
Total No of Module	97944
AC Capacity	20 MW
DC Capacity	25.31 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	ABB, TBEA
AC Power	1000
Total No. of Inverter	20
Transformer Details	
Make	Electrotherm
Transformer KVA	4Mva (4), 2Mva (2)
Total Numb PT & Trafo	6

3. Aarohi Solar Pvt. Ltd., Hindupur (50 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline & Thinfilmm, Make-Solar frontier
Specification of Module	165 Wp, 170 Wp,
Total No of Module	302012
AC Capacity	50 MW
DC Capacity	58.04 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	ABB
AC Power	1000
Total No. of Inverter	50
Transformer Details	
Make	ABB
Transformer KVA	25 Mva

Total Numb PT & Trafo	2
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4. Dayanidhi Solar Power Pvt. Ltd., Santipuram (40 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- BYD, Talesun, GCL
Specification of Module	260 Wp, 255 Wp, 250 Wp
Total No of Module	188256
AC Capacity	40 MW
DC Capacity	48.38 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	ABB, TBEA
AC Power	1000
Total No. of Inverter	38
Transformer Details	
Make	Schneider Electric
Transformer KVA	20 Mva
Total Numb PT & Trafo	2

5. Niranjana Solar Energy Pvt. Ltd., Pattikonda (20 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make-BYD, Talesun
Specification of Module	250 Wp, 255 Wp, 260 Wp
Total No of Module	97872
AC Capacity	20 MW
DC Capacity	25.04 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	ABB, Delta
AC Power	1000
Total No. of Inverter	20
Transformer Details	
Make	SUDHIR POWER TRANSFORMER, SERVOMAX
Transformer KVA	Sudhir -2Mva-(1),4Mva (4), Servo- 2Mva (1)
Total Numb PT & Trafo	6

6. Vishwatma Solar Energy Pvt Ltd., Yemmiganur (30 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- BYD, Talesun, Waree
Specification of Module	260 Wp, 255 Wp, 250 Wp

Total No of Module	126216
AC Capacity	30 MW
DC Capacity	36.68 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	ABB, TBEA
AC Power	1000
Total No. of Inverter	30
Transformer Details	
Make	Schneider Electric
Transformer KVA	4 Mva
Total Numb PT & Trafo	1

7. Acme Raipur Solar Power Pvt. Ltd., Chattisgarh (30 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- Talesun, BYD
Specification of Module	250 Wp, 255 Wp, 260 Wp
Total No of Module	132282
AC Capacity	30 MW
DC Capacity	32.25 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	ABB, Sungrow, Tbea
AC Power	1140, 630, 1250
Total No. of Inverter	28
Transformer Details	
Make	ABB
Transformer KVA	30 Mva
Total Numb PT & Trafo	1

8. Dayakara Solar Power Pvt Ltd., Maddur (30 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- Risen, Suntech, BYD, talesun
Specification of Module	260 Wp, 265 Wp, 255 Wp
Total No of Module	172760
AC Capacity	30 MW
DC Capacity	38.80 Wp
Tilt Details	Seasonal Tilt
Inverter Details	
Make	ABB, Tmeic

AC Power	1000
Total No. of Inverter	30
Transformer Details	
Make	ABB
Transformer KVA	30 Mva
Total Numb PT & Trafo	1

9. Grahati Solar Energy Pvt Ltd., Balanagar (50 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- BYD, Risen, Suntech, Talesun
Specification of Module	260 Wp, 255 Wp, 265 Wp
Total No of Module	248784
AC Capacity	50 MW
DC Capacity	64.5 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	ABB, Tmeic
AC Power	1000
Total No. of Inverter	50
Transformer Details	
Make	ABB
Transformer KVA	25 Mva
Total Numb PT & Trafo	2

10. Acme Odisha Solar Power Pvt Ltd, Bolangir, Odisha (25 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- BYD, Trina, Talesun
Specification of Module	250 Wp, 255 Wp, 260 Wp
Total No of Module	132504
AC Capacity	25 MW
DC Capacity	31.68 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	SCHNEIDER, TBEA
AC Power	680, 630
Total No. of Inverter	37
Transformer Details	
Make	CGL
Transformer KVA	25 Mva
Total Numb PT & Trafo	1

11. Eminent Solar Power Pvt Ltd., Udham Singh Nagar District, Uttarakhand (12.5 MW)

Technical detail of the equipment	Remark
PV Technology and Make	Poly-Crystalline and Make- Talesun, BYD
Specification of Module	260 Wp, 265 Wp
Total No of Module	59400
AC Capacity	12.5 MW
DC Capacity	15.75 MW
Tilt Details	Seasonal Tilt
Inverter Details	
Make	TBEA
AC Power	1000 kw
Total No. of Inverter	12
Transformer Details	
Make	Electrotherm
Transformer KVA	4.5 Mva (1), 4 MVA (2)
Total Numb PT & Trafo	3

The respective project is running smoothly, there were no any instances occurred that would alter the GHG reductions, methodology applicability and monitoring procedure. The plant went for the schedule maintenance at regular intervals. There were zero breakdown subsequently no impact in emission reduction. There are also no changes to the project proponent.

3.2 Deviations

3.2.1 Methodology Deviations

No methodology deviations have been applied during this monitoring period.

3.2.2 Project Description Deviations

Deviation 1:

Nature of Deviation is permanent.

Deviation took place during the 7th monitoring period. In technology description there are some revisions in plant configuration (make, ratings and number of equipment) due to maintenance of the project activity. The detail of changes is as follows.

Description	Changes happed during 7th Monitoring Period
Mihit Solar Power Private Ltd. 25 MW Mihit Solar Power Private Ltd. 25 MW Mihit Solar Power Private Ltd. 24 MW ACME Jaisalmer Solar Power Pvt. Ltd. Aarohi Solar Pvt. Ltd.	No. of Module

Dayanidhi Solar Power Pvt. Ltd. Niranjana Solar Energy Pvt. Ltd. Vishwatma Solar Energy Pvt Ltd. Acme Raipur Solar Power Pvt. Ltd. Dayakara Solar Power Pvt Ltd Grahati Solar Energy Pvt Ltd Acme Odisha Solar Power Pvt Ltd Eminent Solar Power Pvt Ltd.	
Mihit Solar Power Private Limited (Kherakhurd) Aarohi Solar Pvt. Ltd.	Transformer KVA ratings
Niranjana Solar Energy Pvt. Ltd.	Inverter make
Vishwatama Solar Energy Pvt. Ltd.	Transformer KVA and Central Inverter KVA rating
Acme Raipur Solar Power Pvt. Ltd. Eminent Solar Power Pvt. Ltd. Dayakara Solar Power Pvt. Ltd.	Central Inverter KVA rating
Mihit Solar Power Private Limited (Jhandekalan) Grahati Solar Energy Pvt Ltd Vishwatama Solar Energy Pvt. Ltd. Acme Jaisalmer Solar Power Pvt Ltd Aarohi Solar Pvt Ltd Dayakara Solar Power Pvt Ltd.	Module specification
Eminent Solar Power Pvt Ltd Acme Odhisha Solar Power Pvt Ltd. Mihit Solar Power Private Limited (Mankhera)	Module make

There is no impact of these changes on plant capacity, scale, baseline emission calculation, additionality and PLF of the of the project activity. These changes happened in last quarter of 2021 (04-September 2021 to 15 December 2021). Nature of Deviation is permanent.

The above deviation has already been approved during the previous verification.

The deviation applied in the current monitoring period (01-February-2023 to 15-April-2024):

The make and total number of modules installed have been updated based on the latest data received from the site, as shown below:

1. Mihit Solar Power Private Ltd. Jhandekalan (24 MW)

Total No of Module- 97886

2. ACME Jaisalmer Solar Power Pvt. Ltd., Rayachotti (20 MW)

Total No of Module- 97944

3. Aarohi Solar Pvt. Ltd., Hindupur (50 MW)

Total No of Module- 302012

4. Dayanidhi Solar Power Pvt. Ltd., Santipuram (40 MW)

Total No of Module- 188256

5. Niranjana Solar Energy Pvt. Ltd., Pattikonda (20 MW)

Total No of Module- 97872

6. Vishwatma Solar Energy Pvt Ltd., Yemmiganur (30 MW)

Total No of Module- 126216

7. Acme Raipur Solar Power Pvt. Ltd., Chattisgarh (30 MW)

Total No of Module- 132282

8. Dayakara Solar Power Pvt Ltd., Maddur (30 MW)

Total No of Module- 172760

9. Acme Odisha Solar Power Pvt Ltd, Bolangir, Odisha (25 MW)

Total No of Module- 132504

3.3 Grouped Projects

The project activity is grouped project activity. However, no new project activity instances have been added in this grouped project during the current monitoring period. Thus original 13 project activity instances are part of current monitoring period.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	EF _{grid,OM,y}
Data unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 11, April 2016 ¹⁴
Value applied	0.9941
Justification of choice of data or description of	Calculated as per "Tool to calculate the emission factor for an electricity system, version 05.0.0" as 3-year generation weighted average using data for the years 2012-2013, 2013-2014 & 2014-

¹⁴ <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>

measurement methods and procedures applied	2015. The data are obtained from “CO ₂ Baseline Database for Indian Power Sector” version 11.0, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire crediting period.

Data / Parameter	EF _{grid,BM,y}
Data unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 11, April 2016 ¹⁵
Value applied	0.9285
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per “Tool to calculate the emission factor for an electricity system, version 05.0.0” as 3-year generation weighted average using data for the years 2012-2013, 2013-2014 & 2014-2015. The data are obtained from “CO ₂ Baseline Database for Indian Power Sector” version 11.0, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire crediting period.

Data / Parameter	EF _{grid,CM,y}
Data unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 11, April 2016 ¹⁶
Value applied	0.9777
Justification of choice of data or description of measurement methods and procedures applied	The combined margin emissions factor is calculated as follows: $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ Where: EF_{grid,BM,y}= Build margin CO₂ emission factor in year y (tCO₂/MWh) EF_{grid,OM,y}= Operating margin CO₂ emission factor in year y (tCO₂/MWh) W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM} = Weighting of build margin emissions factor (%) = 25% Calculated as per “Tool to calculate the emission factor for an electricity system, version 05.0.0”. The data is obtained from “CO₂

¹⁵ <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>

¹⁶ <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>

	Baseline Database for Indian Power Sector” Version 11, April 2016, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire crediting period.

4.2 Data and Parameters Monitored

Data / Parameter	EG _{PJ,y}
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project (Solar) plant/unit to the grid in year y
Source of data	Credit note/ JMR / Form B reports / monthly generation report from respective state electricity board / DISCOM
Description of measurement methods and procedures to be applied	Data Type: Measured Monitoring equipment: Energy Meters are used for monitoring Recording Frequency: Continuous monitoring and Monthly recording from Energy Meters, Summarized Annually Archiving Policy: Paper & Electronic Calibration frequency: One in five years Electricity exported/imported to the grid is in kWh. However, for the calculation purpose electricity exported is converted in MWh. The Net electricity supplied to the grid by the project activity is calculated as a difference of electricity exported to the grid, electricity imported from the grid obtained from joint meter reading certificates/credit notes issued by state electricity board as per below equation: $EG_{PJ,y} = EG_{Export} - EG_{Import}$ The joint reading at metering point is carried out once in a month in presence of O&M officials and state electricity board personnel. The calculations/measurement of net electricity supplied to grid is under purview of state electricity board and the PP/Project activity Instance owner has no role on it. PP/Project activity Instance owner gets value of net electricity supplied to grid and hence this parameter is mentioned as a part of monitoring plan. Cross Checking: Quantity of net electricity supplied to the grid can be cross checked from the invoices raised by the PP to the State Electricity Board or invoices with third party.
Frequency of monitoring/recording	Continuous monitoring, hourly measurement and at least monthly recording

Value monitored	823,831

¹⁷ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

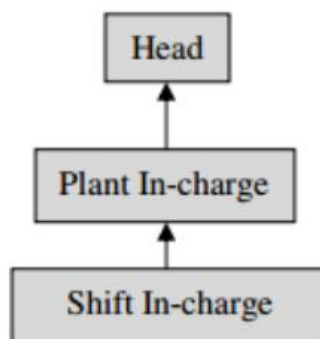
Purpose of the data	The Data/Parameter is required to calculate the baseline emission.
Calculation method	The parameter is measured and if any calculation is required, the calculation is based on measured parameters.
Comments	Data is archived electronically for a period of 2 years beyond the end of crediting period.

4.3 Monitoring Plan

The monitoring plan, which is implemented by the PP describes about the monitoring organization, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data results with the PP. PP follows the mentioned structure for data monitoring, collection, data archiving and calibration of equipment for this project activity instances. The team comprises of the following members:

Organisational Structure for Monitoring



PP has assigned the responsibility of operation and maintenance of project activity instances with relevant and authorized O&M contractors. The Plant In-charge and Shift In-Charge have been deployed by O&M contractors.

Responsibilities of Head: Overall functioning and maintenance of the data.

Responsibilities of Plant In-charge: Responsibility for Maintains the data records, ensures completeness of data, and reliability of data (calibration of equipment).

Responsibilities of Shift In-charge: Responsibility for day-to-day data collection and maintains day to day log book for monitored data.

In the event when the individual verification period dates and billing cycle dates of the project activity do not coincide, then the electricity export will be apportioned based on number of days. The ratio of number of days under monitoring period and total number of days under billing cycle will be multiplied to total electricity export to billing cycle and the same is used in this monitoring period.

For project activity instances which involves solar projects with common metering, apportioning is followed to determine net electricity export to grid. The apportioning procedure is not under control of PP; thus, value of net electricity supplied to grid is available to PP and same is mentioned as monitoring parameter. The value of net electricity supplied to grid is used for ER calculations.

It is to be noted that the metering arrangement, accuracy class of meters, feeder arrangements, calibration frequency of meters are under control of state electricity board and PP do not have any control on it. Thus, any deviation at actual site or during verification is accepted.

QA & QC Procedures to be followed

Necessary check meters as required have been installed, to operate in standby mode or when the main meters are not working. All meters are calibrated at least once in five year as per CEA notification. Records of calibration certificates are maintained for verification. Hence, high quality is ensured with the above parameters. The calibration of meters is under purview of state electricity board and CME/ project activity instances owner do not have any control on it.

Data Recording and Storage

For measuring the net energy supplied to grid by the project activity instances at the interconnection point, one set of Main meter and Check Meter is provided. Representatives of both project activity instances Owner and State Utility are present to record the monthly meter readings. The state utility prepares the credit report for the net energy supplied to the grid and same is used as a basic document for monitoring and verification of the net energy supplied to the grid. Based on the monthly credit report, the project activity instances Owner raise an invoice to the utility. Utility pays to the project activity instances Owner based on this document.

The above documents are kept at safe storage for verification of emission reductions generated from the project activity. The period of data storage will be 2 years beyond crediting period.

Emergency preparedness

The project activity does not result in any unidentified activity that can result in substantial emissions from the project activity. However, in case monitoring equipment get failed or is found faulty, they are replaced with calibrated meters as quickly as possible. In case main meter get failed or is found faulty, the reading of check meter will be considered.

Personnel training

In order to ensure a proper functioning of the project activity instances and a properly monitoring of emission reductions, the staff are trained. The Shift In-charge and Plant In-charge are trained in equipment operation, data recording, operation and maintenance and emergency procedures in compliance with the monitoring plant.

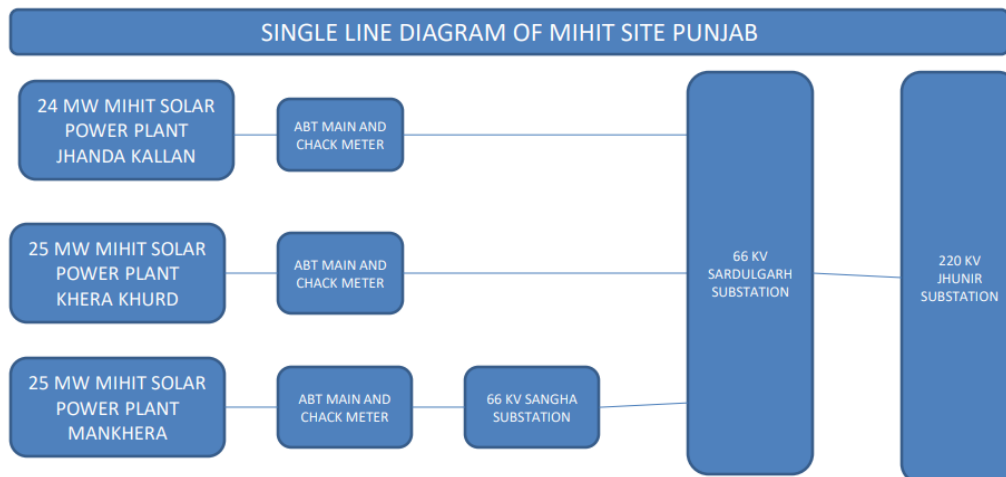


Figure 1. Metering block layout of Mihit Solar Power Private Ltd.

Jaisalmer solar power Pvt Ltd		SLD Jaisalmer Solar power Pvt Ltd Rayachoti /PSS							
ACME									
Block.No.	INV-NO.	HT SWITCHGEAR	OUT GOING FEDDER		POWER TRAFD		BUS	Line	GSS
1	1&2	Incomer Feeder-1	OIG-1		PTR (35MVA)		33KV Bus	33 kv Line	220/132/33kv GSS
4	1,2,3,4								
5	1,2,3,4								
1	3&4	Incomer Feeder-2	OIG-2		PTR (35MVA)		33KV Bus	33 kv Line	220/132/33kv GSS
2	1,2,3,4								
3	1,2,3,4								

Figure 2. Metering block layout of Acme Jaisalmer Solar Power Pvt. Ltd.

Aaroohi solar Pvt Ltd		SLD Aaroohi Solar Pvt Ltd Hindupur /PSS/GSS							
ACME		HT SWITCHGEAR	OUT GOING FEDDER		POWER TRAFO		BUS	Line	GSS
1	1,2,3,4	Incomer Feeder-1	O/G-2	→	PTR-2(25MVA)	→	132KV Bus	132 kv Line	220/132/33kv GSS
2	1,2,3,4	Incomer Feeder-2							
3	1,2,3,4	Incomer Feeder-3							
4	1,2,3,4	Incomer Feeder-4							
5	1,2,3,4	Incomer Feeder-5							
6	1,2,3,4	Incomer Feeder-6							
7	1,2,3,4	Incomer Feeder-7	O/G-1	→	PTR-1(25MVA)	→	132KV Bus	132 kv Line	220/132/33kv GSS
8	1,2,3,4	Incomer Feeder-8							
9	1,2,3,4	Incomer Feeder-9							
10	1,2,3,4	Incomer Feeder-10							
11	1,2,3,4	Incomer Feeder-11							
12	1,2,3,4	Incomer Feeder-12							
13	1,2	Incomer Feeder-13							

Figure 3. Metering block layout of Aaroohi Solar Pvt. Ltd.

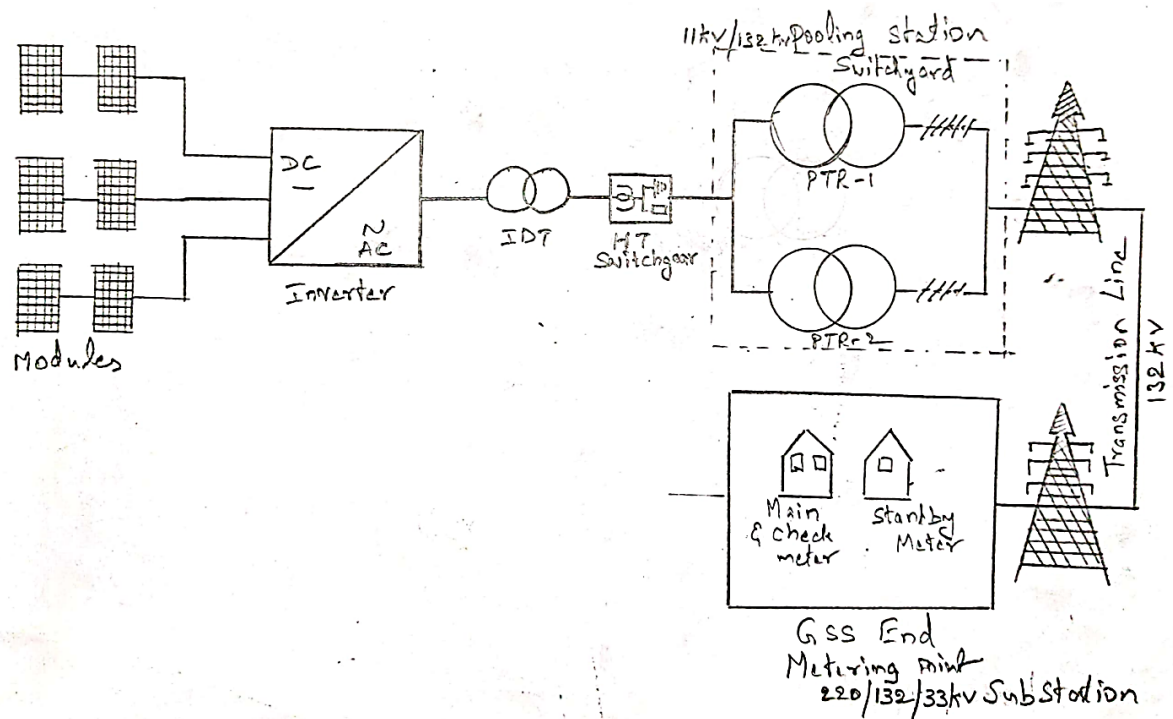


Figure 4. Metering block layout of Dayanidhi Solar Power Pvt. Ltd.

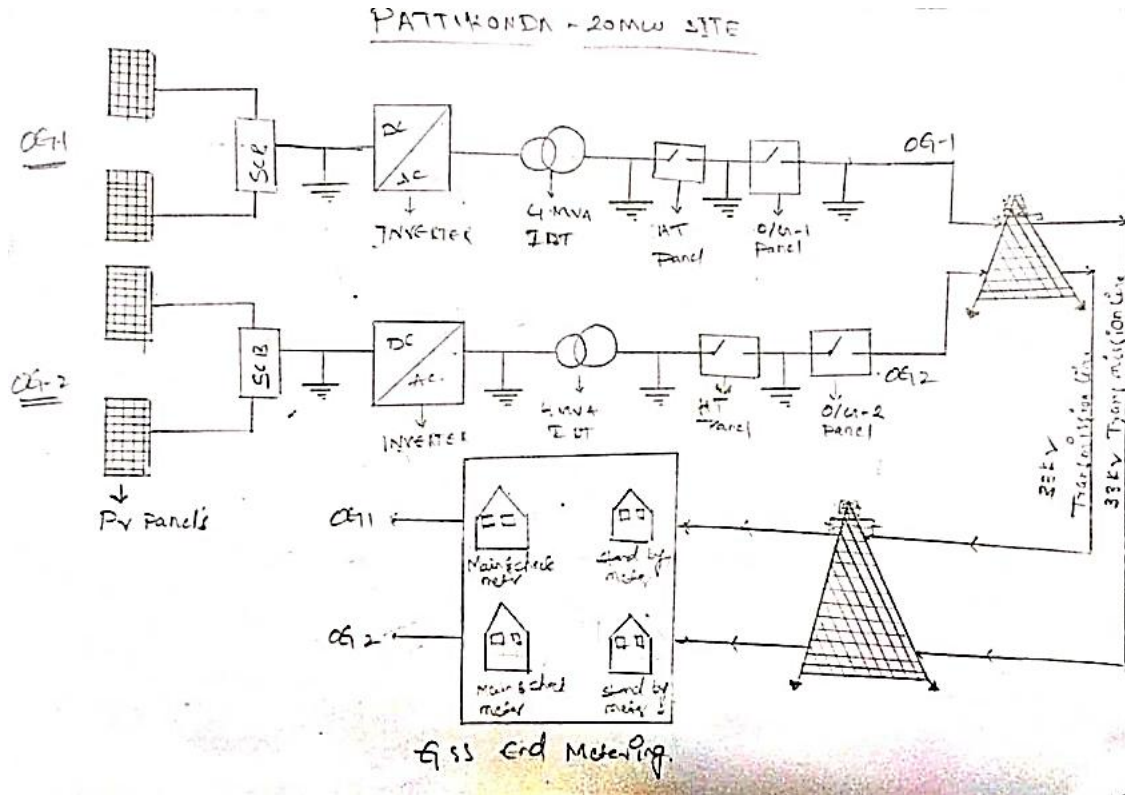


Figure 5. Metering block layout of Niranjana Solar Energy Pvt. Ltd.

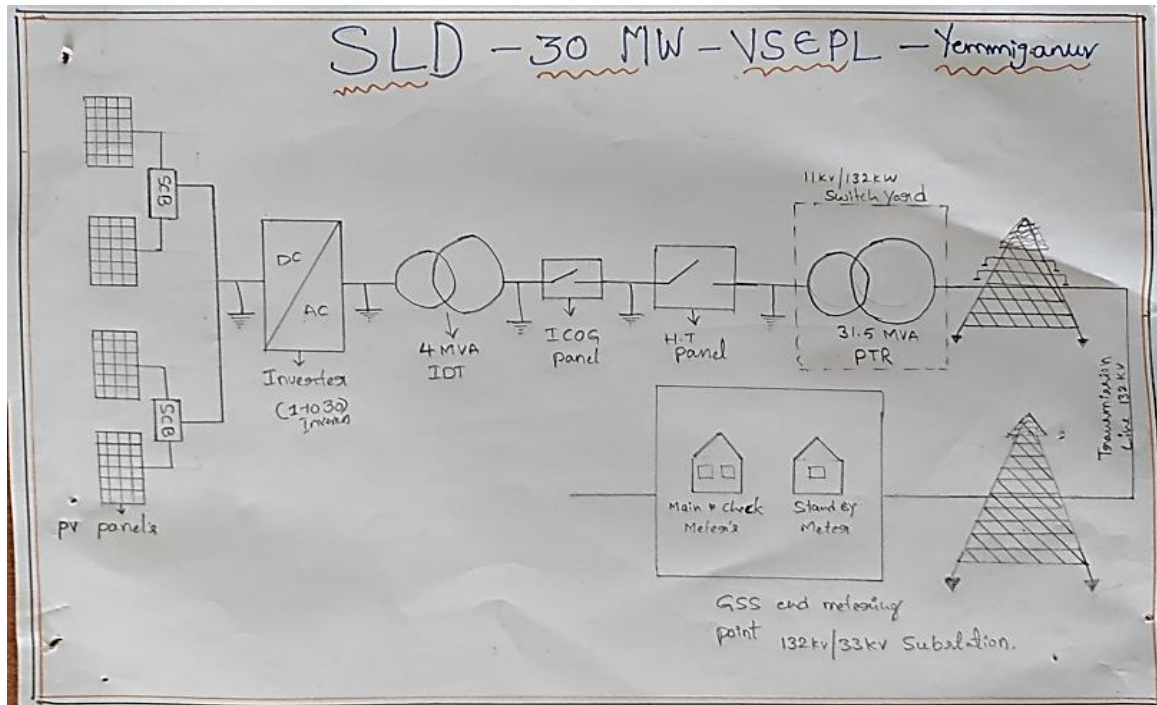


Figure 6. Metering block layout of Vishwatama Solar Energy Pvt. Ltd.

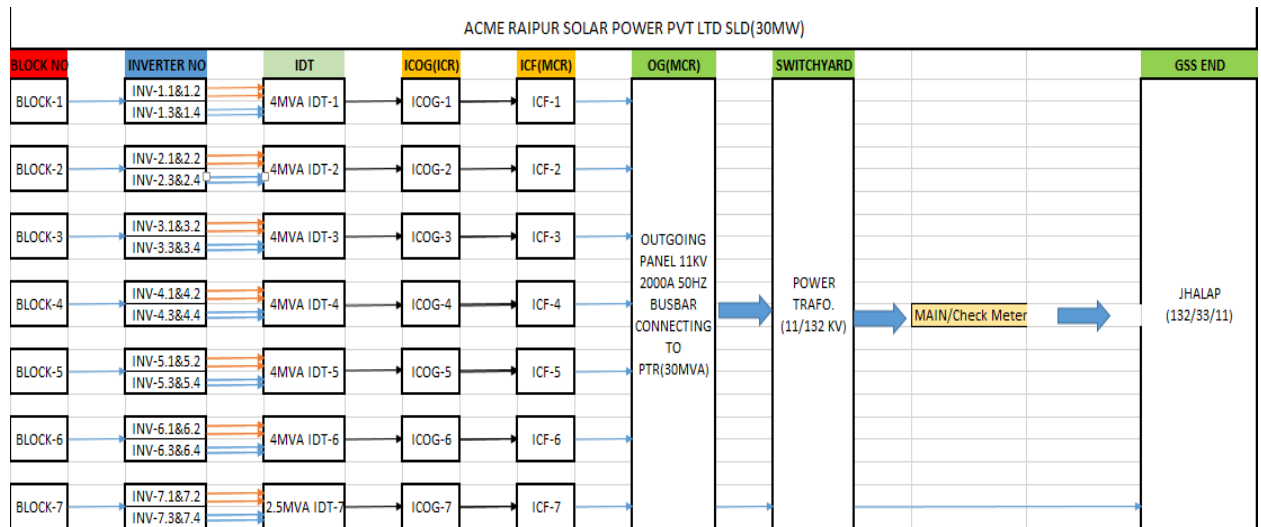


Figure 7. Metering block layout of Acme Raipur Solar Power Pvt. Ltd.

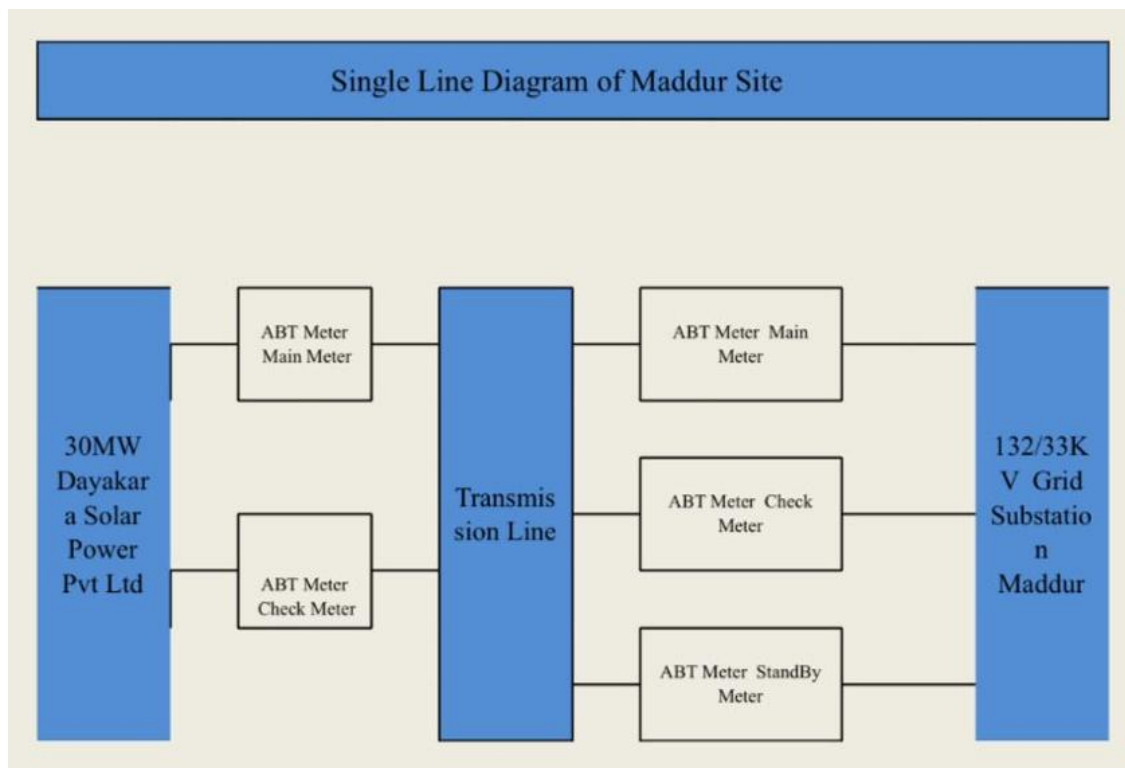


Figure 8. Metering block layout of Dayakara Solar Power Pvt. Ltd.

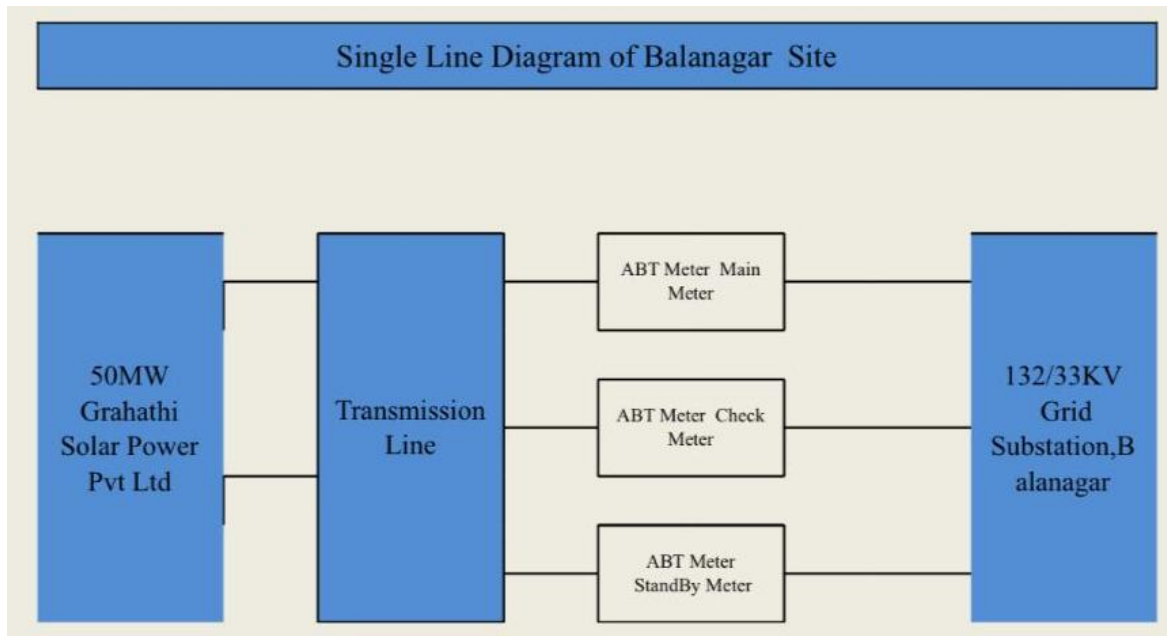


Figure 9. Metering block layout of Grahathi Solar Energy Pvt. Ltd.

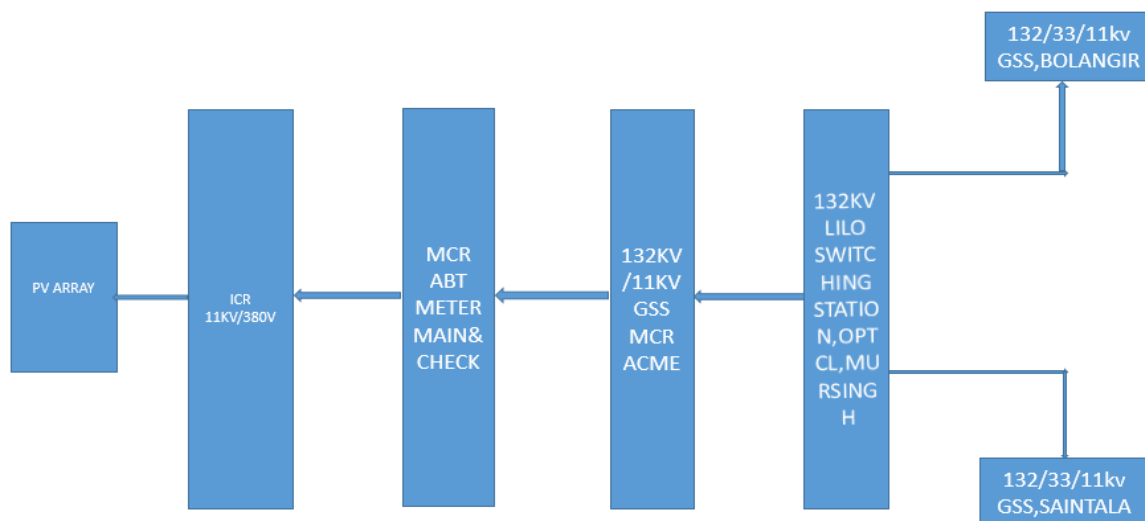


Figure 10. Metering block layout of Acme Odhisha Solar Power Pvt Ltd.

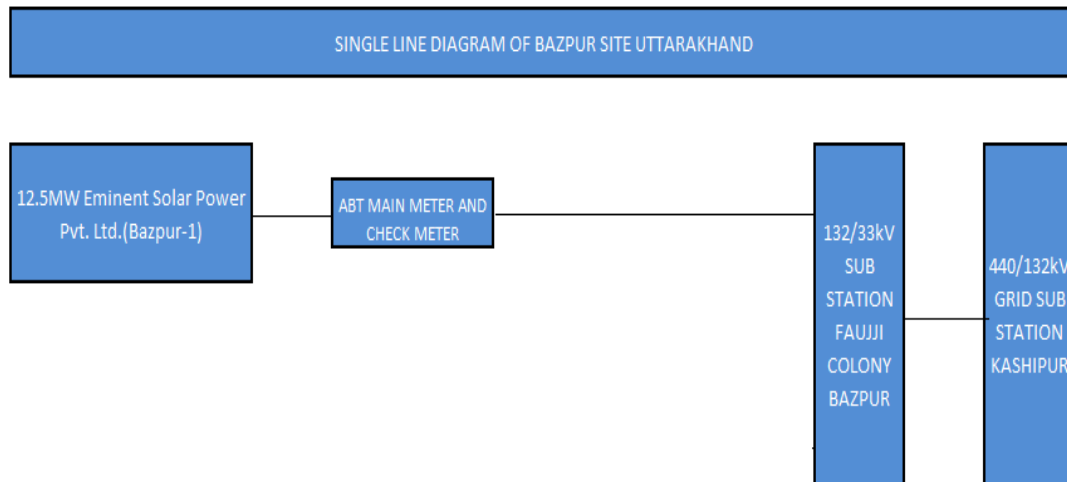


Figure 11. Metering block layout of Eminent Solar Power Pvt Ltd.

For Punjab state projects (74 MW), the project activity meters are connected to 66 kV supply line (CT/PT connected to 66 kV/110 V) and for rest sites the solar plants are connected at 132 kV/33 kV substation.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The baseline emission calculation for the project activity instances is attributable to the CO₂ Emission that could have been produced by the fossil fuel-based power plants in absence of the project activity. Therefore, the amount electricity supplied to the Indian grid will be multiplied by the grid emission factor of Indian grid to calculate the baseline emissions reduced by the project activity.

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$$

Where,

BE_y	=	Baseline Emissions in year y; tCO ₂ e
$EG_{PJ,y}$	=	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
$EF_{grid,CM,y}$	=	CO ₂ emission factor of the grid in year y; tCO ₂ e/MWh

Thus,

$$EG_{PJ,y} = 823,831 \text{ MWh}$$

$$EF_{grid,CM,y} = 0.9777 \text{ tCO}_2\text{e}$$

$$BE_y = 823,831 * 0.9777$$

$$= 805,459 \text{ tCO}_2\text{e (round down values)}$$

Note that above value of emissions is summation of rounded down for each SPV, thus overall value is less than simply multiplication of $823,831 * 0.9777$.

5.2 Project Emissions

As per the approved consolidated Methodology ACM0002 (Version 17.0) para 36: “For most renewable energy power generation project activities, $PE_y = 0$. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$$

Where:

$$PE_y = \text{Project emissions in year } y \text{ (t CO}_2\text{e/yr)}$$

$$PE_{FF,y} = \text{Project emissions from fossil fuel consumption in year } y \text{ (t CO}_2\text{/yr)}$$

$$PE_{GP,y} = \text{Project emissions from the operation of dry, flash steam or binary geothermal power plants in year } y \text{ (t CO}_2\text{e/yr)}$$

$$PE_{HP,y} = \text{Project emissions from water reservoirs of hydro power plants in year } y \text{ (t CO}_2\text{e/yr)}$$

As the project activity is the installation of a new grid-connected Solar PV Power plant and does not involve any project emissions from fossil fuel, operation of dry, flash steam or binary geothermal power plants, and from water reservoirs of hydro power plants. Therefore, $PE_{FF,y}$, $PE_{GP,y}$, $PE_{HP,y}$ is equal to zero and thus, $PE_y = 0$.

5.3 Leakage Emissions

As per methodology ACM0002 Version 17.0, for renewable energy projects, there is no any leakage emissions occurred.

Hence, $LE_y = 0$.

5.4 GHG Emission Reductions and Carbon Dioxide Removals

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Reduction VCUs (tCO ₂ e)	Removal VCUs (tCO ₂ e)	Total VCUs (tCO ₂ e)
01-February-2023 to 31-December-2023	610,589	0	0	610,589	0	610,589

01-January-2024 to 15-April-2024	194,870	0	0	194,870	0	194,870
Total	805,459	0	0	805,459	0	805,459

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01-February-2023 to 31-December-2023	668,418	610,589	-8.65%	The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant. The lower generation during the current verification period is due to certain natural conditions.
01-January-2024 to 15-April-2024	212,133	194,870	-8.14%	The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant. The lower generation during the current verification period is due to certain natural conditions.
Total	880,550	805,459	-8.53%	The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant. The lower generation during the current verification period is due to certain natural conditions.

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

No commercially sensitive information has been provided in the MR.

Section	Information	Justification

APPENDIX 2: METER CALIBRATION DETAILS

The meter serial number (0.2s Accuracy class) and their calibration details of the meters are as below.

PP Name	M W	Project Location	Main Meter Serial number	Check Meter Serial Number	Stand By Meter if available	Calibration Date	Due date of calibration
Mihit Solar Power Private Ltd.	25	Kherakhurd	PBB48 607	PBB48 608 ¹⁸	NA	21-February-2022	20-February-2027
Mihit Solar Power Private Ltd.	25	Mankhera	PBB48 603	PBB48 604	NA	21-February-2022	20-February-2027
Mihit Solar Power Private Ltd.	24	Jhandekalan	PBB48 610	PBB48 609	NA	09-August-2022	08-August-2027
ACME Jaisalmer Solar Power Pvt. Ltd.	20	Rayachotti	Feeder-1 - APX009 10 & Feeder-2 - APX009 13	Feeder-1 - APX009 11 & Feeder-2 - APX009 14	Feeder-1 - APX009 12 & Feeder-2 - APX009 15	21-October-2021	20-October-2026
Aarohi Solar Pvt. Ltd.	50	Hindupur	APX005 84 23014 914 ¹⁹	APX005 85 230149 15 ²⁰	APX005 86 23014 927 ²¹	13-December-2021, 21-September-2023	12-December-2026, 20-September-2028

¹⁸ The old Check Meter with SL. No. PBB48608 was replaced with the SAMSAT Meter with SI. No. PST00101 & PST00116, which was calibrated and installed on 10-April-2023. The check meter was removed by PSPCL under the SAMSAT scheme in April 2023, and two separate meters were installed.

¹⁹ The old Main Meter with SL. No. APX00584 was replaced with the new Main Meter with SI. No. 23014914, which was calibrated and installed on 21-September-2023.

²⁰ The old Check Meter with SL. No. APX00585 was replaced with the new Check Meter with SI. No. 23014915, which was calibrated and installed on 21-September-2023.

²¹ The old Stand Meter with SL. No. APX00586 was replaced with the new Stand Meter with SI. No. 23014927, which was calibrated and installed on 21-September-2023.

Dayanidhi Solar Power Pvt. Ltd.	40	Santipuram	APX006 04	APX006 05	APX006 00	20-December-2021	19-December-2026
Niranjana Solar Energy Pvt. Ltd.	20	Pattikonda	Feeder-1 - 15196518 & Feeder-2 - 15196512 Feeder-1 - 23001330 ²² & Feeder-2 - 23001333 ²³	Feeder-1 - 15196519 & Feeder-2 - 15196521 Feeder-1 - 23301331 ²⁴ & Feeder-2 - 23001334 ²⁵	Feeder-1 - 15196516 & Feeder-2 - 15197462 Feeder-1 - 23001332 ²⁶ & Feeder-2 - 23001335 ²⁷	15-June-2021, 12-April-2023	14-June-2026, 11-April-2028
Vishwatma Solar Energy Pvt Ltd.	30	Yemmiganur	15197463 23001327 ²⁸	15197470 23001328 ²⁹	15196511 23001329 ³⁰	16-June-2021 27-February-2023	15-June-2026 26-February-2028

²² The old Main Meter with SL. No. 15196518 was replaced with the new Main Meter with SI. No. 23001330, which was calibrated and installed on 12-April-2023.

²³ The old Main Meter with SL. No. 15196512 was replaced with the new Main Meter with SI. No. 23001333, which was calibrated and installed on 12-April-2023.

²⁴ The old Check Meter with SL. No. 15196519 was replaced with the new Check Meter with SI. No. 23001331, which was calibrated and installed on 12-April-2023.

²⁵ The old Main Meter with SL. No. 15196521 was replaced with the new Check Meter with SI. No. 23001334, which was calibrated and installed on 12-April-2023.

²⁶ The old Stand Meter with SL. No. 15196516 was replaced with the new Check Meter with SI. No. 23001332, which was calibrated and installed on 12-April-2023.

²⁷ The old Check Meter with SL. No. 15197462 was replaced with the new Check Meter with SI. No. 23001335, which was calibrated and installed on 12-April-2023.

²⁸ The old Main Meter with SL. No. 15197463 was replaced with the new Main Meter with SI. No. 23001327, which was calibrated and installed on 27-February-2023.

²⁹ The old Check Meter with SL. No. 15197470 was replaced with the new Check Meter with SI. No. 23001328, which was calibrated and installed on 27-February-2023.

³⁰ The old Stand Meter with SL. No. 15196511 was replaced with the new Stand Meter with SI. No. 23001329, which was calibrated and installed on 27-February-2023.

Acme Raipur Solar Power Pvt. Ltd.	30	Bagbahara	CSE52062	MSP54469	NA	28-December-2019 ³¹	27-December-2024
						29-August-2020 ³²	28-August-2025
Dayakara Solar Power Pvt Ltd.	30	Maddur	APX00907	APX00908	APX00909	02-September-2021	01-September-2026
Grahati Solar Energy Pvt Ltd.	50	Balanagar	APX00971	APX00972	APX00973	25-November-2021	24-November-2026
Acme Odisha Solar Power Pvt Ltd.	25	Bolangir	OPT01170 OPT00723 ³³	OPT01399 OPT00869 ³⁴	NA	02-August-2022 16-February-2024	01-August-2027
							15-February-2029
Eminent Solar Power Pvt Ltd.	12.5	Uddham Singh Nagar	UKD02407	UKD02412	NA	01-November-2019	31-October-2024

The calibration frequency of the energy meters is once in five years. The calibrations are still valid during the current monitoring period. As a result, error factor is not applicable to the generation data.

For Punjab state projects (74 MW), the project activity meters are connected to 66 kV supply line (CT/PT connected to 66 kV/110 V) and for rest sites of the solar plants are connected at 132 kV/33 kV substation.

³¹ This is the calibration date of the testing for the main meter.

³² This is the calibration date of the testing for the check meter.

³³ The old Main Meter with SL. No. OPT01170 was replaced with the new Main Meter with SL. No. OPT00723, which was calibrated and installed on 16-February-2024.

³⁴ The old Check Meter with SL. No. OPT01399 was replaced with the new Check Meter with SL. No. OPT00869, which was calibrated and installed on 16-February-2024.

APPENDIX 3: TRAINING RECORDS

SPVs	State	No. of Trainings
Mihit Solar Power Private Ltd. 25 MW	Punjab	31
Mihit Solar Power Private Ltd. 25 MW	Punjab	15
Mihit Solar Power Private Ltd. 24 MW	Punjab	17
ACME Jaisalmer Solar Power Pvt. Ltd.	Andhra Pradesh	10
AaroHi Solar Pvt. Ltd.	Andhra Pradesh	25
Dayanidhi Solar Power Pvt. Ltd.	Andhra Pradesh	27
Niranjana Solar Energy Pvt. Ltd.	Andhra Pradesh	28
Vishwatma Solar Energy Pvt Ltd.	Andhra Pradesh	8
Acme Raipur Solar Power Pvt. Ltd.	Chhattisgarh	16
Dayakara Solar Power Pvt Ltd.	Telangana	39
Grahati Solar Energy Pvt Ltd.	Telangana	4
Acme Odisha Solar Power Pvt Ltd.	Odisha	39
Eminent Solar Power Pvt Ltd.	Uttarakhand	13
Total		272