



Verified Carbon Standard

100 MW SOLAR PROJECT IN BHADLA IN RAJASTHAN.



Project title	100 MW SOLAR PROJECT IN BHADLA IN RAJASTHAN.
Project ID	VCS ID 1842
Monitoring period	01-September-2021 to 31-March-2023 (inclusive of both the dates)
Original date of issue	29-April-2024
Most recent date of issue	07-January-2025
Version	05
VCS Standard Version	v4.7
Prepared by	Kosher Climate India Private Limited

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PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The project activity involves installation of 100 MW_{ac} solar power project in Bhadla in the state of Rajasthan, India. The main purpose of this project activity is to generate clean electricity through renewable source of solar energy and to supply electricity to the Indian grid system via Power Purchase Agreement (PPA) between Clean Sustainable Energy Private Limited and Solar Energy Corporation of India Limited (SECI).

The project activity has been successfully commissioned and in operation since commissioning. The project activity has been commissioned in two phases; 30 MW of both plot no. P4 and P5 was commissioned on 16-September-2018. 20 MW of both plot no. P4 and P5 has been commissioned on 06-October-2018.

The solar power does not involve any fossil fuel consumption and hence the project does not lead to any greenhouse gas emissions. Thus, electricity would be generated through sustainable means without causing any negative impact on the environment.

The details of the project are mentioned in the table:

Project Investor's Name	Phase	Plot	Commissioning Date	Capacity in MW _{ac}		Location (Village/State)	
Clean Sustainable Energy Pvt. Ltd.	1	P4	16-September-2018	30 MW	60 MW	Village: Bhadla, District: Jodhpur	
		P5		30 MW			
	2	P4	06-October-2018	20 MW	40 MW		
		P5		20 MW			
	Total				(60 MW + 40 MW) = 100 MW		

The fifth monitoring period is considered from 01-September-2021 to 31-March-2023 (inclusive of both the dates). Project activity has generated 365,749 MWh of electricity and reduces the total emission of 342,648 tCO_{2e} during the current monitoring period. As per registered PD the project will reduce an annual average emission of 176,539 tCO_{2e} and will generate an annual average generation of 188,441 MWh/year of electricity, corresponding estimated generation and emission reduction for the current monitoring are given below:

Year	Vintage	Number of days	Estimated emission reductions (tCO2)	Estimated generation (MWh)
2021	01-Sep-2021 to 31-Dec-2021	122	59,008	62,986
2022	01-Jan-2022 to 31-Dec-2022	365	176,539	188,441
2023	01-Jan-2023 to 31-Mar-2023	90	43,530	46,465

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Joint Validation and Verification	(16-September-2018 -- 31-October-2018)	VCS	Earthhood Services Private Limited	0 Year, 1 Month, 16 Days
Verification	(01-November-2018 --31-March-2020)	VCS	LGAI Technological Center S.A.	1 year, 5 Months, 0 days
Verification	(01- April-2020 - 30-September-2020)	VCS	KBS Certification Services Pvt. Ltd	0 years, 6 Months, 0 days
Verification	(01-October-2020 -- 31-August-2021)	VCS	LGAI Technological Center S.A.	0 years, 11 months, 0 days
Verification	(01-September-2021 -- 31-March-2023)	VCS	VKU Certification Pvt. Ltd	1 year, 7 months, 0 days
Total Verification Period	(16-September-2018 -- 31-March-2023)	VCS	--	4 years, 6 months, 16 days

1.3 Sectoral Scope and Project Type

Sectoral scope¹	01 - Energy industries (renewable / non-renewable sources)
Project activity type	I - Renewable Energy Projects

This project is not an AFOLU project and is not a grouped project.

Sectoral scope	NA
AFOLU project category²	NA
Project activity type	NA

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>

² See Appendix 1 of the VCS Standard

1.4 Project Proponent

Organization name	Clean Sustainable Energy Pvt. Ltd.
Contact person	Prashant Choubey
Title	Senior Vice President
Address	3rd floor, PTI building, 4 Parliament Street, Delhi – 110001. India.
Telephone	+91-97113 02259
Email	prashant.choubey@avaada.com

Clean Sustainable Energy Pvt. Ltd is acting as the Project Proponent (PP) having overall operational control and ownership of the project activity.

1.5 Other Entities Involved in the Project

Organization name	Kosher Climate India Private Limited
Role in the project	Authorized representative
Contact person	Vamsi Krishna M
Title	Founder & Managing Director
Address	Zee Plaza, No.1678, 27th Main Road, Sector 2, HSR Layout, Bengaluru, Karnataka 560102, India
Telephone	+91 9945343475
Email	vamsi@kosherclimate.com narendra@kosherclimate.com

Kosher Climate India Private Limited is the “Authorized Representative” of PP and the “Sole Focal Point” for all the communications with the DOE, VCS Board and Registry; and to take all the necessary actions for the project under VCS mechanism as and when required,

1.6 Project Start Date

Project start date	16-September-2018
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Justification	As per VCS standard V4.7 ³ , section 3.8 “The project start date of a non-AFOLU project is the date on which the project began generating GHG emission reductions or carbon dioxide removals. “The first phase of the project activity was commissioned on 16-September-2018.
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1.7 Project Crediting Period

Crediting period	<input type="checkbox"/> Seven years, twice renewable <input type="checkbox"/> Ten years, fixed <input checked="" type="checkbox"/> Other (10 years which can be renewed twice, as per paragraph 3.1.9 of VCS Standard, V4.7, the effective requirements have to be taken from the Appendix 3 “Document history and effective dates”. As per Appendix 3 “Registered projects and projects that complete validation on or before 19 March 2020 remain eligible to apply the crediting period requirements under VCS Version 3”. Hence the crediting period has been referred from VCS Standard, V3.7 which referred in the Project PD)
Start and end date of first or fixed crediting period	16-September-2018.to 15- September-2028 (Inclusive of both the dates)

1.8 Project Location

The 100MW_{ac} Solar PV Plant site is located in Bhadla village, Jodhpur, in the Indian state Rajasthan. The site is well connected by state highway (SH) NH-15.

The geo-coordinates of the location are as follows:

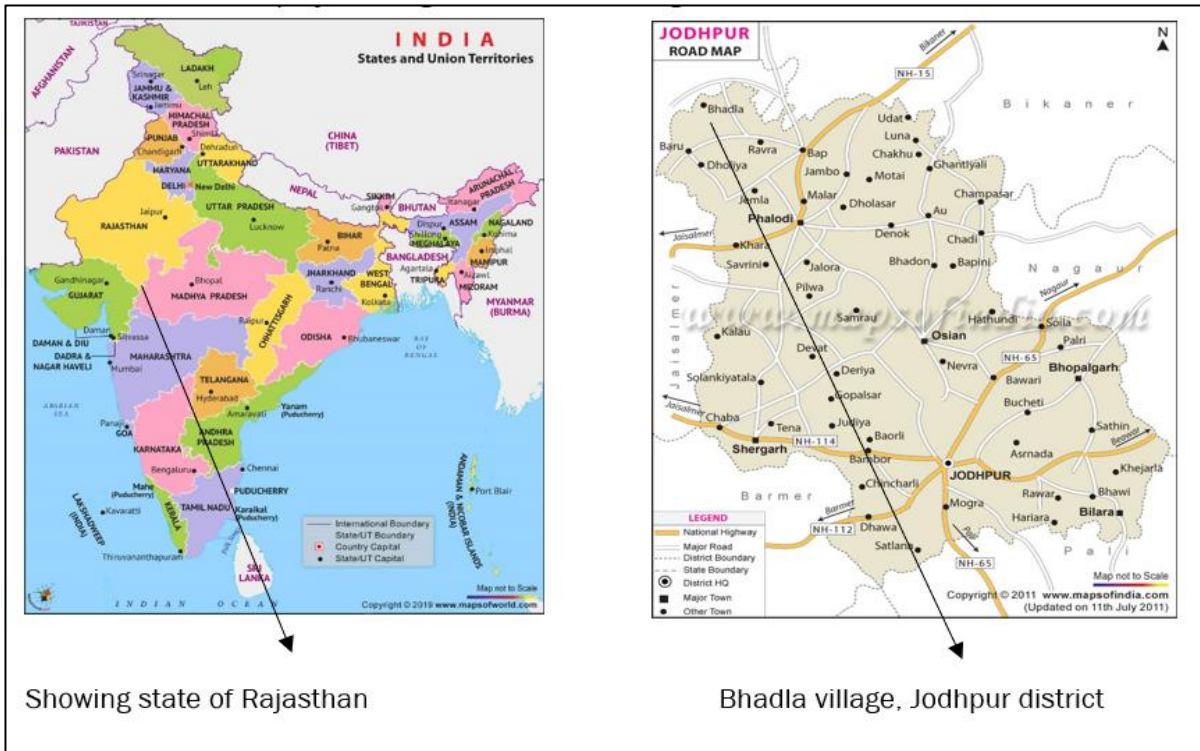
Latitude : 27° 31'24.35"N (or 27.5234)

Longitude: 71° 57'53.08"E (or 71.9647)

Bhadla is about 200 km north of Jodhpur and about 320 km west of Jaipur. The nearest village is Bap, which is approximately in the 50km radius from the Project site location.

³ <https://verra.org/wp-content/uploads/2024/04/VCS-Standard-v4.7-FINAL-4.15.24.pdf>

Location details of the project are given below in the figure



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	19 ⁴
Tool	CDM Tool: 01	Tool for the demonstration and assessment of additionality	7.0 ⁵
Tool	CDM Tool: 07	Tool to calculate the emission factor for an electricity system	7.0 ⁶
Tool	CDM Tool: 24	Common practice	3.1 ⁷

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

The project was initially listed on GS but was discontinued by the proponent before registration. Consequently, the project is only registered with VCS, ensuring there is no double counting or duplicate claims. Project proponent has provided a double counting declaration for the same.

1.10.2 Registration in Other GHG Programs

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

Yes No

⁴ <https://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDEO2VN6LYM30K41HFPRQ>

⁵ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁶ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

⁷ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf>

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

Contribution to sustainable development:

The project activities have claimed to attain 4 SDGs such as:

SDG 04: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

SDG 07: Ensure access to affordable, reliable, sustainable and modern energy for all.

SDG 08: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

SDG 13: Take urgent action to combat climate change and its impacts.

Ministry of Environment and Forests, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. The project contributes to sustainable development using the following ways.

- **Social well-being:** The project would help in generating employment opportunities during the construction and operation phase. The project activity leads to development in infrastructure in the region like development of roads and also may promote business with improved power generation.

- **Economic well-being:** The project is a clean technology investment in the region, which would not have been taken place in the absence of the VCS benefits the project activity will also help to reduce the demand supply gap in the state. The project activity will generate power using zero emissions solar based power generation which helps to reduce GHG emissions and specific pollutants like SO_x, NO_x and SPM associated with conventional thermal power generation facilities.
- **Technological well-being:** The successful operation of project activity would lead to promotion of solar based power generation and would encourage other entrepreneurs to participate in similar projects.
- **Environmental well-being:** Solar being a renewable source of energy, it reduces the dependent on fossil fuels and conserves natural resources which are on the verge of depletion. Due to its zero emission the Project activity also helps in avoiding significant amount of GHG emissions.

As per para 3.17.1 of the VCS standard (v4.7), the requirement prescribes that “The project proponent shall demonstrate how the project activities, or additional activities implemented by the project proponent, contribute to sustainable development, as defined by and tracked against the United Nations Sustainable Development Goals (SDGs). The project proponent must demonstrate that a project contributes to at least three SDGs by the end of the first monitoring period and in each subsequent monitoring period”

In continuation, the project has achieved various SDGs during the current monitoring period which fulfils the requirement of minimum three SDG indicators. These contributions are separately reported in VERRA’s prescribed SDG Report and submitted to VERR’s. Also, during the verification process supporting documents related to such SDG contributions were submitted to VVB; the summarized details of the contributions are provided under table1 below:

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
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1)	4.3	4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	Implemented activities to increase	From 01-September-2021 to 31-March-2023, 556 hours of training had been conducted for supervisors, senior technicians, technicians, helpers, security supervisors and security guards by Assistant Manager and Engineer	<p>Trainings conducted for employees for the monitoring period 16-September-2018 to 31-October-2018: 00</p> <p>Trainings conducted for employees for the monitoring period 01-November-2018 to 31-March-2020: 00</p> <p>Trainings conducted for employees for the monitoring period 01-April-2020 to 30-September-2020: Total 236 hours of training for management level 8 and above. 60 hours of training per employee was conducted for permanent female employees. 02 hours of training were conducted for temporary/contractual employees</p> <p>Trainings conducted for employees for the monitoring period 01-October-2020 to 31 - August-2021: Total 469 hours of training for management level 8 and above. 203.5 hours of training per employee was conducted for permanent female employees. 02 hours of training were conducted for temporary/contractual employees</p> <p>Trainings conducted for employees for the monitoring period 01-September-2021 to 31-March-2023: 556 hours of training for supervisors, senior technicians and below.</p>
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						A total of 1,529 hours of trainings have been provided since commissioning till 31-March-2023.
2)	7.2	7.2.1 Renewable energy share in the total final energy consumption	Implemented activities to increase		From 01-September-2021 to 31-March-2023, total RE generation is 365,749 MWh of electricity.	<p>Total RE generation for the monitoring period 16-September-2018 to 31-October-2018: 0 MWh</p> <p>Total RE generation for the monitoring period 01-November-2018 to 31-March-2020: 318,858 MWh</p> <p>Total RE generation for the monitoring period 01-April-2020 to 30-September- 2020: 121,724 MWh</p> <p>Total RE generation for the monitoring period 01-October-2020 to 31-August-2021: 220,009 MWh</p> <p>Total RE generation for the monitoring period 01-September-2021 to 31-March-2023: 365,749 MWh</p> <p>A total cumulative renewable electricity of 1,026,340 MWh has supplied to Indian grid that helps to increase the renewable energy share in the energy mix.</p>

3)	8.6	8.6.1. Proportion of youth (aged 15-24 years) not in education, employment or training	Implemented activities to decrease.	1 senior engineer was hired during the monitoring period by Clean Sustainable Energy Pvt Ltd	<p>No. of people hired for the monitoring period 16 - September - 2018 to 31 - March - 2020: 21</p> <p>No. of people hired for the monitoring period 01-April-2020 to 30-September- 2020: 2 Graduate Engineer trainees and 1 Management Trainee were hired</p> <p>No. of people hired for the monitoring period 01-October-2020 to 31-August-2021: 8 Graduate Engineer trainees and 1 Post Graduate Engineer trainee were hired</p> <p>No. of people hired for the monitoring period 01-September-2021 to 31-March-2023: 1 senior engineer was hired</p> <p>A total of 34 new employments have been created by Avaada Group.</p>
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4)	8.8	8.8.1 Fatal and non-fatal occupational injuries per 100,000 workers, by sex and migrant status	Implemented activities to decrease	<p>During the current monitoring period in FY 21-23, 16 minor incidents were recorded, including one minor injury in which a worker scratched their finger while working with dry cleaning module robots. Immediate first aid was administered, and additional training on the importance of wearing PPE was provided. The workers were able to protect themselves from injury due to the proper safety measures and trainings.</p>	<p>No. of Fatal and non-fata occupational injuries for the monitoring period 16-September-2018 to 31-October-2018: 00</p> <p>No. of Fatal and non-fata occupational injuries for the monitoring period 01-November-2018 to 31-March-2020: 00</p> <p>No. of Fatal and non-fata occupational injuries for the monitoring period 01-April-2020 to 30-September-2020: 00</p> <p>No. of Fatal and non-fata occupational injuries for the monitoring period 01-October-2020 to 31-August-2021: 00</p> <p>No. of Fatal and non-fata occupational injuries for the monitoring period 01-September-2021 to 31-March-2023: 16 minor incidents and 01 minor injury</p> <p>A total of 16 minor incidents and 1 minor injury recorded from 16-September-2018 to 31-March-2023, however no fatal incidents/accidents were recorded. Training sessions are held for workers periodically.</p>
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5)	13.2	13.2.2 Total greenhouse gas emissions avoided or removed	Implemented activities to increase	Total GHG emission reductions or removals generated in this monitoring period are 342,648 tCO _{2e} .	<p>Total GHG emission reduction achieved for the monitoring period 16-September-2018 to 31-October-2018: 0 tCO_{2e}</p> <p>Total GHG emission reduction achieved for the monitoring period 01-November-2018 to 31-March-2020: 298,718 tCO_{2e}</p> <p>Total GHG emission reduction achieved for the monitoring period 01-April-2020 to 30-September-2020: 114,035 tCO_{2e}</p> <p>Total GHG emission reduction achieved for the monitoring period 01-October-2020 to 31-August-2021: 206,113 tCO_{2e}</p> <p>Total GHG emission reduction achieved for the monitoring period 01-September-2021 to 31-March-2023: 342,648 tCO_{2e}</p> <p>The cumulative GHG emission reduction achieved till now are 961,514 tCO_{2e}</p>
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1.13 Commercially Sensitive Information

No commercially sensitive information has been excluded from the public version of the project description.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Stakeholder Identification	<p>The stakeholders described and marked at the time of validation remain the same.</p> <p>The detailed summary of all the comments received during the Local Stakeholder Consultation process have been mentioned in Section 2.1.5 of this report.</p> <p>The PP has conducted a Stakeholders Consultation on 17th Feb 2019. The local stakeholder’s consultation has been conducted as per the standard guidelines and requirements followed under CDM & VCS mechanism. The invitations had been sent to the relevant stakeholder of the regions in the vicinity along with public display of invitation letters for the stakeholder consultation so that maximum number of local stakeholders can be accounted.</p> <p>The list of relevant stakeholders identified through stakeholder mapping includes:</p> <ul style="list-style-type: none"> • Local people, communities, and representatives expected to be directly or indirectly affected by or interested in the project. (Local Villagers) • Local policymakers and representatives of local authorities. (Panchayat Members) • Employees • Shopkeepers, suppliers, vendors and representative of project developer
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	<p>The stakeholders were made aware about the project activity and discussed about the various benefits arising out of the project activity.</p>
<p>Legal or customary tenure/access rights</p>	<p>The project proponent has leased the land from Adani Renewable Energy Park Rajasthan Ltd for a period of 25 years from commissioning date. Construction of project activity does not lead to rehabilitation of any indigenous people or local communities during the construction of project activity.</p> <p>There is no forceful settlement or rehabilitation that occurred due to the project implementation. No other stakeholders or indigenous people has the legal right on the project area prior or post construction of project activity.</p> <p>It will not take any projects or power infrastructure activities which impacts the access or customary rights of local community.</p> <p>No concerns were received against the implementation of the project activity and confirms the consent and full support for the project implementation.</p>
<p>Stakeholder diversity and changes over time</p>	<p>The stakeholder group exhibited notable diversity across social, economic and cultural dimensions. Socially, individuals from various backgrounds, including different age groups, ethnicities and socio-economic classes were present. It was ensured that women, disabled or elderly people, informal sector workers, poor communities and stakeholders with different financial capacities were represented and involved.</p> <p>The project anticipates no significant changes to the group's cultural integrity in the project region. Additionally, project activity creates additional livelihood promotion among the local communities helps to improve the sanitary conditions paving way for well-being in the project region. Further, the project activities by contributing to the environmental,</p>

	<p>economic, and social benefits, play a crucial role in enabling local communities to remain located in the project area.</p> <p>To monitor the changes and to ensure that the project continues to align with the diverse needs and expectations of its stakeholders, the project proponent has the grievance register onsite which will engage with the stakeholders continuously with the project.</p>
Expected changes in well-being	<p>During both the construction and operation phases, the project created economic and livelihood opportunities by employing the local population.</p>
Location of stakeholders	<p>The community members who are impacted by the project directly or indirectly, who are majorly the local community residing near the project area in Bhadla village, Jodhpur.</p>
Location of resources	<p>The land where the project is implemented is leased as mentioned above and its resources are managed by the Clean Sustainable Energy Pvt. Ltd. All land and resource rights including the access and customary rights vests with the Clean Sustainable Energy Pvt. Ltd for 25 years since commissioning.</p>

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	<p>There is a mechanism in place to engage the stakeholders, to address their grievances and resolve any potential conflict between the project proponent and local stakeholders. The project proponent maintained the grievance register during the monitoring period and received complaints from the stakeholders and resolved it.</p> <p>The stakeholders can put down his/her feedback and the same if found genuine will be addressed. The grievance registers are available at the project site for the local community which are maintained for recording the grievances, requests, demands etc. The details like date & time, name of person, name of village, address with mobile/ telephone no, description of problem, mode of sharing of</p>
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	problems, nature of problem, person who attended & action taken are maintained.												
Date(s) of stakeholder consultation	17-February-2019												
Communication of monitored results	<p>The project proponent maintained a grievance register throughout the monitoring period, received complaints from stakeholders, and successfully resolved them. During the current monitoring period there were 3 requests raised by stakeholder and the project owner has resolved all the requests.</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Grievance</th> <th>Action taken</th> </tr> </thead> <tbody> <tr> <td>26-January-2022</td> <td>Request to supply school uniforms and stationery items</td> <td>School bags, uniforms and respective stationery items were supplied within a period of 1 week.</td> </tr> <tr> <td>August - 2022</td> <td>Request to supply small tricolor flags, wrist bands, caps and geometry boxes to school children</td> <td>All the requested items were supplied to the school children within 1 week.</td> </tr> <tr> <td>December - 2022</td> <td>Request to repair/ renovate government school toilet</td> <td>Renovated government school toilet within 1 month.</td> </tr> </tbody> </table>	Date	Grievance	Action taken	26-January-2022	Request to supply school uniforms and stationery items	School bags, uniforms and respective stationery items were supplied within a period of 1 week.	August - 2022	Request to supply small tricolor flags, wrist bands, caps and geometry boxes to school children	All the requested items were supplied to the school children within 1 week.	December - 2022	Request to repair/ renovate government school toilet	Renovated government school toilet within 1 month.
Date	Grievance	Action taken											
26-January-2022	Request to supply school uniforms and stationery items	School bags, uniforms and respective stationery items were supplied within a period of 1 week.											
August - 2022	Request to supply small tricolor flags, wrist bands, caps and geometry boxes to school children	All the requested items were supplied to the school children within 1 week.											
December - 2022	Request to repair/ renovate government school toilet	Renovated government school toilet within 1 month.											
Consultation records	Attendance records, summary of comments received and photographs of the stakeholder meet were documented & provided to VVB during registration of project activity.												
Stakeholder input	The project proponent has conducted a Stakeholder Consultation meeting at the project site, which was before												

the project validation process. The local stakeholder's consultation has been conducted as per the standard guidelines and requirements followed under CDM & VCS mechanism which was approved in the registered VCS-PD. The stakeholders were made aware about the project activity and discussed about the various benefits arising out of the project activity. Stakeholder comments mainly sought clarification, and as sufficient information was provided during the meeting, no changes to the project design are deemed necessary. There were no negative comments received during the meeting and stakeholders appreciated the proactive efforts taken by project proponent towards reducing emission.

2.1.3 Free, Prior, and Informed Consent

Consent

The project activity has been implemented with all necessary approvals and project proponent has conducted LSC during which all the necessary information regarding the project activity was explained to the stakeholders. The stakeholders have been informed that Clean Sustainable Energy Pvt. Ltd is going to implement a 100 MWac solar energy project in Bhadla, in the state of Rajasthan, India. The main purpose of this project activity is to generate clean electricity through the renewable source of solar energy and to supply electricity to the Indian grid system. The duration of the project will be more than 20 years.

The project proponent fostered open dialogues, providing stakeholders ample opportunities to express concerns, ask questions and share input. All raised concerns and inputs have been documented, and a grievance resolution mechanism is in place to address any ongoing conflicts, demonstrating the project's commitment to prioritizing resolution and community harmony. Regular stakeholder engagement will persist throughout the project lifecycle to address evolving concerns and ensure ongoing support.

Through this comprehensive process, the project not only obtained consent but also built a foundation of trust and cooperation with stakeholder, resulting in no ongoing or unresolved conflicts.

Outcome of FPIC	The result of the FPIC and stakeholder consultation is positive, with stakeholders expressing their support for the project. Clean Sustainable Energy Pvt.Ltd has ensured that the project did not encroach on land, relocate people without consent, or cause forced physical or economic displacement.
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2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome
Government school teacher requested to supply school uniforms and stationery items	School bags, uniforms and respective stationery items were supplied within a period of 1 week.
Government school teacher requested to supply small tricolor flags, wrist bands, caps and geometry boxes to school children	All the requested items were supplied to the school children within 1 week.
Government school teacher requested to repair/ renovate government school toilet	Renovated government school toilet within 1 month.

2.1.5 Public Comments

At the time of project validation, the project was open for Public Comment Period from 18-December-2018 to 19-January-2019. No comments were received during this period. Additionally, no comments have been received outside the Public Comment Period.

However, during the Stakeholders' Consultation of the project which was held on 17-February-2019, 04 comments were received which were properly addressed by PP. No negative comments have been received on project activity from any of the local stakeholders. As all comments were positive about the project, no further action is required, and no updates to the project design have been made. The summary of the comments received during that stakeholders' consultation is provided below:

Summary of comments received	Actions taken
1. Does the project lead to any displacement or relocation of	All the concerns raised by the stakeholders were addressed by the PP during that stakeholder

<p>the local community at the project location?</p> <p>2. Does the project create employment opportunities for the local community, and can the local community consume the electricity produced by the project?</p> <p>3. What are the major benefits for the local people resulting from the implementation of the project?</p> <p>4. Does the project cause any significant environmental pollution?</p>	<p>consultation meeting and conveyed the potential benefits of the project activity for the local stakeholders were acknowledged.</p> <p>The project proponent has informed the stakeholders that they can reach out to the site in-charge at any time via email, or phone, provided in the invitation to voice their concerns in the future. Additionally, assurance has been given that a grievance register will always be accessible at the project site for registering complaints, which will be promptly addressed and resolved.</p>
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2.2 Risks to Stakeholders and the Environment

	Risk identified	Mitigation or preventative measure taken
Risks to stakeholder participation	No risk identified	No risks to stakeholder participation were identified during the preparation for stakeholder consultation. The project developer analyzed relevant stakeholders, risks, opportunities, and strategies for conducting the most effective consultation. To ensure inclusivity, the consultation venues were chosen centrally and made accessible to people of all castes, creeds, and sectors in the society, ensuring that the location was considered safe by everyone in the community. Focus Group Discussions were conducted specifically to provide women and marginalized groups with an

		opportunity to express their opinions.
Working conditions	No risk identified	Occupational Health and Safety are prioritized at every stage of the project. Employees received regular training to ensure their health and safety in the workplace. Measures are implemented to safeguard the health of the community near the project area. The project is committed to complying with national policy on safety, health and environment at work place ⁸ , IFC PS2 ⁹ and International Labour Organization Labor Standards ¹⁰ , following all guidelines and standards
Safety of women and girls	No risk identified	The project promotes safe and secure environments for all stakeholders including women and girls. The project is a renewable energy grid connected power project and therefore it's not gender sensitive and does not adversely impact the safety of women and girls
Safety of minority and marginalized groups, including children	No risk identified	The project promotes safe and secure environments for all stakeholders including minority, marginalized groups and children
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	No risk identified	The project is a solar energy project, and therefore does not result in the release of pollutants into the environment.

⁸ <https://labour.gov.in/sites/default/files/SafetyHealthandEnvironmentatWorkPlace.pdf>

⁹⁹ <https://www.ifc.org/en/insights-reports/2012/ifc-performance-standard-2>

¹⁰ <https://www.ilo.org/global/standards/introduction-to-international-labour-standards/lang--en/index.htm>

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

<p>Discrimination and sexual harassment</p>	<p>The project is committed to ensuring a work environment free from discrimination¹¹ and sexual harassment¹². The project developer has an Anti-sexual harassment policy in place to prohibit any form of discrimination or harassment based on factors such as race, gender, age, religion, or any other protected characteristic. Human Resource Management service policy is available to all the employees and they are aware of policies and reporting any concerns or incidents.</p>
<p>Management experience</p>	<p>No new entities are involved in the project design or implementation of the project. Moreover, existing O&M team which are in house have the expertise and experience in directly implementing and monitoring of project activity. Trainings are provided to improve the skills and expertise.</p>
<p>Gender equity in labor and work</p>	<p>The project developer has a Non-Discrimination and Equal Opportunity Policy in place, promoting equal opportunities, non-discrimination, and fair treatment of workers. The project is committed to eliminating gender-based discrimination and ensuring that everyone, regardless of gender, has equal access to employment, training, and advancement opportunities. Moreover, the project follows transparent and non-discriminatory hiring practices and has set up a fair compensation structure based on principles of pay equity, ensuring that individuals receive equal pay for equal work.</p>
<p>Human trafficking, forced labor, and child labor</p>	<p>Project proponent adhere to all national and international laws related to child labor, forced labor, and human trafficking. The project unequivocally affirms that it does not and will not use victims of human trafficking, forced labor, or child labor in any aspect of its operations. This commitment aligns with the project's dedication to upholding ethical and legal standards in its workforce practices.</p>

¹¹ https://labour.gov.in/sites/default/files/equal_remuneration_act_1976_0.pdf

¹² https://doe.gov.in/files/inline-documents/DoE_Prevention_sexual_harassment.pdf

2.3.2 Human Rights

The project avoids any activities that could violate the economic, social, and cultural well-being of local communities. Consequently, the project developer and the project itself commit to respecting internationally proclaimed human rights. They did not complicit in any form of violence or human rights abuses, as defined in the Universal Declaration of Human Rights¹³. This commitment reflects the project's dedication to upholding ethical standards and safeguarding the well-being of the communities involved.

2.3.3 Indigenous Peoples and Cultural Heritage

The Project is not directly or indirectly affecting the dignity, human rights, livelihood systems, or culture of Indigenous Peoples (IPs), neither will it affect the territories or natural or cultural resources that IPs own, use, occupy, or claim as their ancestral domain.

2.3.4 Property Rights

<p>Disputes over rights to territories and resources</p>	<p>For the implementation of the project activity, the project proponent has leased the land from Adaani Renewable energy Park Rajasthan Ltd for a period of 25 years from commissioning date.</p> <p>As a result, the project site does not involve any territories or resources to which the stakeholders have customary rights or access.</p> <p>Also, the project activity has been implemented with all necessary approvals and project proponent has conducted LSC during which all the necessary information regarding the project activity was explained to the stakeholders.</p> <p>Through this comprehensive process, the project not only obtained consent but also built a foundation of trust and cooperation with stakeholders, resulting in no ongoing or unresolved conflicts.</p>
<p>Respect for property rights</p>	<p>Not applicable as the project does not involve any territories or resources to which the stakeholders have customary rights or access.</p>

2.3.5 Benefit Sharing

As described in section 2.3.4 above, the legal and customary rights of the land during and post implementation of the project activity lies with Clean Sustainable Energy Private Limited. Further, the project does not involve any territories to which the stakeholders have customary rights and therefore benefit sharing is not applicable and hence no benefit sharing plan has been designed

¹³ <https://www.un.org/en/about-us/universal-declaration-of-human-rights>

Summary of the benefit sharing plan	NA
Benefit sharing during the monitoring period	NA

2.4 Ecosystem Health

	Risk identified	Mitigation or preventative measure taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	The project area is not located in sensitive ecological zones, biodiversity conservation areas, and there are no rare and valuable plant and animal species.
Soil degradation and soil erosion	Risk of soil erosion during construction	The project might have led to soil erosion during the construction phase. However, mitigation measures were implemented, such as recovering topsoil stripped during clearing and construction. Land clearing was confined to the specific project site needed for development, minimizing the impact.
Water consumption and stress	No risk identified	The project does not contaminate or impede the natural flow of any surface or sub-surface water sources.
Usage of fertilizers	No risk identified	The project harnesses solar energy to generate electricity and therefore, does not involve application of fertilizers, pesticides or herbicides

2.4.1 Rare, Threatened, and Endangered species

The project is not located in or adjacent to habitats for rare, threatened, or endangered species. Hence, not applicable.

Species or habitat	NA
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2.4.2 Introduction of species

This is not a AFOLU project and doesn't involve introduction of any species into the project area, hence this section is Not Applicable

Species introduced	Classification	Justification for use	Adverse effects and mitigation
NA	NA	NA	NA

Existing invasive species	Mitigation measures to prevent spread or continued existence of invasive species
NA	NA

2.4.3 Ecosystem conversion

The project is not an ARR As, ALM, WRC or ACoGS project, this section is not applicable.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project activity involves the installation of Solar PV plant. The total installed capacity of the project is 100 MW_{ac}. The project is developed by Clean Sustainable Energy Pvt. Ltd.

Solar Power Project Technology Details:

The technology employed is photovoltaic technology which is generating electricity using renewable energy sources by harnessing the solar energy. The technology is an environment friendly technology since there are no GHG emissions associated with the electricity generation. There is no transfer of technology involved in the project activity.

Technical Details:

PV Module	
Model	Trina (TSM 315 W)
Maximum Power (Pmax)	315 Wp
No. of modules	46380
Model	Trina (TSM 320 W)
Maximum Power (Pmax)	320 Wp
No. of modules	101040
Model	Trina (TSM 325 W)
Maximum Power (Pmax)	325 Wp

No. of modules	71670
Model	Renesola: JC 320M
Maximum Power (Pmax)	320 Wp
No. of modules	30240
Model	Renesola: JC 325M
Maximum Power (Pmax)	325 Wp
No. of modules	159780
Model	Renesola: JC 330M
Maximum Power (Pmax)	330 Wp
No. of modules	24240
Module technology	Poly Crystalline
Orientation	20 Deg
Invertor	
Model	ABB PVS980-58-2091 kVA
No. of Inverters	48
Technical Lifetime of the SPV plant	25 years
Transformer	
Manufacturer	Raychem/Kamath
Rated capacity (MVA)	8.4
No. of transformers (Nos)	13
Rated capacity of Auxiliary transformer (KVA)	10 & 50
No of Auxiliary transformer (Nos)	10 KVA - 12 Nos 50 KVA - 2 Nos
Type	Oil filled

During current monitoring period there was unscheduled breakdown for 19Hrs only due to low voltage (9LV) cable connected to Power Transformer and immediate action was taken by supplying power to the Adani Power Substation (PSS) by using a bus coupler and the problem was resolved.

Current monitoring period includes total of 577 days, with only a few minor breakdowns occurring (19hrs) which do not impact the generation. Therefore, do not have a significant impact on the calculation of emission reductions (ERs). The details are provided below;

Breakdown details

Date	BD Category	BD Type	Plot	BD Start Time	BD End Time	BD Duration (Min)
7/21/2022	Grid_BD	Unscheduled	Plot-5	10:01	10:26	8

4/1/2023	Grid_BD	Unscheduled	Plot-5	13:54	15:15	27
5/12/2023	Grid_BD	Unscheduled	Plot-5	14:50	17:08	46
5/15/2023	Grid_BD	Unscheduled	Plot-4	11:52	14:58	62
5/15/2023	Grid_BD	Unscheduled	Plot-4	11:52	14:58	62
5/15/2023	Grid_BD	Unscheduled	Plot-4	11:52	14:58	62
5/15/2023	Grid_BD	Unscheduled	Plot-5	11:52	14:58	62
5/15/2023	Grid_BD	Unscheduled	Plot-5	11:52	14:58	62
5/15/2023	Grid_BD	Unscheduled	Plot-5	11:52	14:58	62
1/1/2024	Grid_BD	Unscheduled	Plot-4	11:38	11:52	5
2/25/2024	Grid_BD	Unscheduled	Plot-4	12:55	14:33	98
2/25/2024	Grid_BD	Unscheduled	Plot-5	12:55	14:33	98
6/24/2024	Grid_BD	Unscheduled	Plot-4	17:07	17:25	6
6/30/2024	Grid_BD	Unscheduled	Plot-4	11:14	15:15	241
6/30/2024	Grid_BD	Unscheduled	Plot-5	11:14	15:15	241
Total						1142 Mins (19 Hrs)

Emission Reduction from anthropogenic sources:

The solar power generated from the project will be displacing the electricity generated from thermal power stations feeding into Indian grid and will be replacing the usage of diesel generators for meeting the power demand during shortage periods. Since, the solar power plant harvests energy from sustainable source of “solar energy” and also it does not use any fossil fuel for its operation, the power generated from the project will certainly prevent the power stations comprising coal, diesel, furnace oil and gas etc. which contributes to the project’s baseline, i.e. Grid

3.2 Deviations

3.2.1 Methodology Deviations

There are no methodological deviations applied during this monitoring period.

3.2.2 Project Description Deviations

Deviation during current monitoring period:

Deviation 1:

Change in project location

There was an error in project location coordinates as per the registered PD and previous monitoring reports. The corrected project location coordinates are provided below:

Latitude : 27° 31'24.35"N (or 27.5234)

Longitude: 71° 57'53.08"E (or 71.9647)

Reason: The previously mentioned latitude and longitude coordinates of the project location was found to be in error and did not represent actual project location.

The above deviation does not impact the applicability of the methodology, additionally or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology

Deviation 2:

Change in PV module specification

There was an error in the PV module power output mentioned in the registered PD and previous monitoring reports, the corrected PV module specification is given below:

PV Module	
Model	Trina (TSM 315 W)
Maximum Power (Pmax)	315 Wp
No. of modules	46380
Model	Trina (TSM 320 W)
Maximum Power (Pmax)	320 Wp
No. of modules	101040
Model	Trina (TSM 325 W)
Maximum Power (Pmax)	325 Wp
No. of modules	71670
Model	Renesola: JC 320M
Maximum Power (Pmax)	320 Wp
No. of modules	30240
Model	Renesola: JC 325M
Maximum Power (Pmax)	325 Wp
No. of modules	159780

Model	Renesola: JC 330M
Maximum Power (Pmax)	330 Wp
No. of modules	24240
Module technology	Poly Crystalline
Orientation	20 Deg

Reason: The previously mentioned PV module specification did not accurately show all the PV modules installed at the project location. The capacity however is not affected from the registered PD.

The above deviation does not impact the applicability of the methodology, additionally or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology.

Deviation 3:

Change in inverter manufacturer name

There was an error in the inverter manufacturer name mentioned in the registered PD and previous monitoring reports, the corrected inverter detail is given below:

Invertor	
Model	ABB PVS980-58-2091 kVA

Reason: The previously mentioned inverter manufacturer did not accurately represent the actual inverter installed at the project location; this was due to a mistake in writing the sentence.

The above deviation does not impact the applicability of the methodology, additionally or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology.

3.3 Grouped Projects

This section is not applicable to the project activity as the project is not a grouped project activity.

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, CM, y}
Data unit	tCO _{2e} /MWh
Description	Combined margin emission factor for Indian grid connected power generation in year y calculated using the latest version of Tool 07: “Tool to calculate the emission factor for an electricity system” version 7.0
Source of data	CO ₂ baseline database (Version 14.0) published by CEA on December 2018
Value applied	0.93684
Justification of choice of data or description of measurement methods and procedures applied	This value is calculated using OM and BM values as per Version 7.0 of methodological tool to calculate the emission factor for an electricity system and using December 2018 data base of CEA
Purpose of data	For the calculation of baseline emissions
Comments	This parameter is fixed ex-ante for the entire crediting period

Data / Parameter	EF _{grid, OM, y}
Data unit	tCO _{2e} /MWh
Description	Simple operating margin emission factor for Indian grid
Source of data	CO ₂ baseline database (Version 14.0) published by CEA on December 2018
Value applied	0.9610
Justification of choice of data or description of measurement methods and procedures applied	This value is calculated by taking weighted average of Simple Operating Margin of recent three years for Indian grid as per the Tool 07: “Tool to calculate the emission factor for an electricity system”, version 07.0.0
Purpose of data	For the calculation of baseline emissions
Comments	This parameter is fixed ex-ante for the entire crediting period

Data / Parameter	EF _{grid, BM, y}
Data unit	tCO _{2e} /MWh
Description	Simple build margin emission factor for Indian grid
Source of data	CO ₂ baseline database (Version 14.0) published by CEA on December 2018

Value applied	0.8644
Justification of choice of data or description of measurement methods and procedures applied	This value is calculated by taking weighted average of Simple build Margin of recent three years for Indian grid as per the Tool 07: “Tool to calculate the emission factor for an electricity system”, version 07.0.0
Purpose of data	For the calculation of baseline emissions
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 plant/unit to the grid in year y
Source of data	Joint Meter Readings based Apportioning note issued by Rajasthan DISCOM
Description of measurement methods and procedures to be applied	<p>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: Once in 5 years.</p> <p>Electricity exported/imported to the grid is in kWh. However, for the calculation purpose electricity exported is converted in MWh.</p> <p>The Net electricity supplied to the grid by the project activity will be calculated as a difference of electricity exported to the grid, electricity imported from the grid obtained from joint meter reading and apportioning certificates/credit notes issued by Rajasthan Discom as per below equation:</p> $EG_{PJ,y} = EG_{Export} - EG_{Import} - \text{Transmission losses}$ <p>The calculation is done by DISCOM and the Project Developer has no control over the authority for the calculation. Based on the joint meter reading, apportioning certificates/credit notes, the project developer shall raise the invoice.</p> <p>The electricity exported to the grid by the project activity connected to the sub-station is measured by energy meters of accuracy class 0.2s. The electricity exported will be measured continuously using Main & Check meters.</p>

	<p>Export readings of Main, check meters shall be taken on monthly basis by authorized officer of Rajasthan DISCOM in the presence of Project Developer or representative.</p> <p>Cross Checking: Quantity of net electricity supplied to the grid will be cross checked from the invoices raised by the project participant to the grid.</p>
Frequency of monitoring/recording	Monthly
Value monitored	365,749
Monitoring equipment	<p>The two parameters, import and export to the grid, are measured at the same location near the connection to the grid, through standard electricity metering instrument. The readings of meter will be continuously measured and monthly recorded.</p> <p>For monitoring meters details please refer Appendix 1.</p>
QA/QC procedures to be applied	<p>This data will be directly used for calculation of emission reductions.</p> <p>Measurement results of electricity supplied to the grid and that delivered from the grid to the project will be crosschecked with records for sold electricity. The meter(s) will be calibrated annually in accordance with national standards and procedures.</p>
Purpose of the data	For calculation of baseline emissions
Calculation method	<p>The Net electricity supplied to the grid by the project activity will be calculated as a difference of electricity exported to the grid, electricity imported from the grid obtained from joint meter reading and apportioning certificates/credit notes issued by Rajasthan Discom as per below equation:</p> $EG_{PJ,y} = EG_{Export} - EG_{Import} - \text{Transmission losses}$
Comments	Data will be archived electronically for a period of 2 years beyond the end of crediting period.

4.3 Monitoring Plan

Aim of monitoring:

The monitoring methodology specified in the applied methodology, “ACM0002: Grid-connected electricity generation from renewable sources - Version 19”¹⁴ requires that the project-monitoring plan to consist of monitoring of quantity of net electricity supplied to the grid in the year y. In order to monitor the mitigation of GHG due to the project activity, the total energy exported needs to be measured. The net energy supplied to grid by the project activity multiplied by the emission factor for regional grid, would form the baseline for the project activity.

Since the baseline emission factor is based on an ex-ante determination, monitoring of this parameter is not required. The main parameter for monitoring is the net electricity exported to the grid.

The project boundary includes the solar project, sub-stations, grid and all power plants connected to grid. The project activity evacuates power to the Indian grid. Therefore, the entire Indian grid and all connected power plants have been considered in the project boundary for the project activity.

The electricity generation from project activity is metered at 220/33 KV Adani Renewable Energy Park Pooling substation. All the plants (including the project activity solar plant and other solar project developer’s solar plants) are connected to their dedicated individual feeder at this substation. Feeder wise metering arrangements are available to each of the developers to quantify the electricity delivered to the 220/400kV RVPNL GSS substation by individual project developer.

A common metering point at 400/220 KV RVPNL substation for both the line 1 & Line 2 coming from 33/220 kV Adani substation are available. The metering point at both substations consists of both main & check meters (ABT Meters). The meters located at 400/220 KV substation are considered for evaluating transmission losses.

The transmission losses between 220/33 KV Pooling substation and 400/220 KV RVPNL substation will be apportioned to each solar project developers in proportion to their generation. The difference of final apportioned value of export and import of the project activity is used for calculation of net electricity supplied to the grid by the project activity and same value will be considered for ER calculations. The final value of export and import and net electricity for individual solar project developer will be provided by state Utility board in the form of JMR sheets. The process of apportioning, metering/feeder arrangement, meter calibration interval is under state Utility and PP does not have any control over it.

The meters are approved, tested & sealed by the State Utility. The meters are solely in the custody of State Utility. The frequency of calibration is once in 5 years or as per the clause mentioned in the PPA. All the meters are of 0.2s accuracy class.

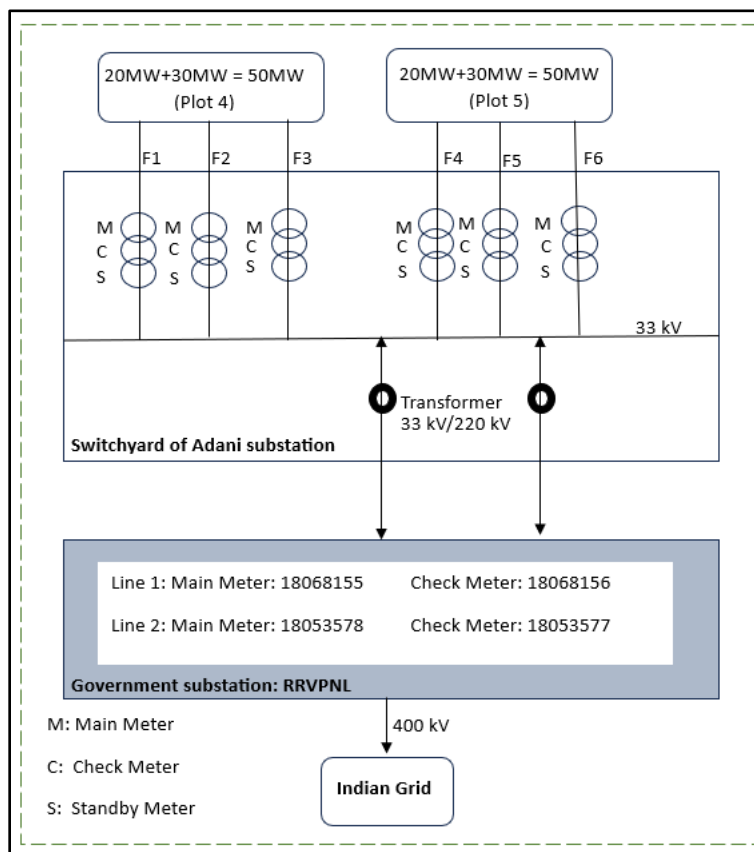
The aggregated net monthly electricity supplied/exported by the project activity (100MW Capacity) is monitored, measured & metered continuously at the metering point shown in above diagram

¹⁴ <https://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDEO2VN6LYM30K41HFPRO>

provided under section 2.3 of this JPD-MR. JMR report can be cross checked with the monthly invoices of sale.

In the absence or delay in the meter calibration appropriate guidelines bound by the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006¹⁵ will be applied appropriately to confirm the conservativeness of metering & monitored values.

The metering arrangement, accuracy class of meters, calibration frequency and apportioning approach is under control of state electricity board and project developer do not have any control on it. PP is getting value of net electricity supplied to grid and the same is considered the monitoring parameter. Energy Meter details has been provided under Appendix-1.



The monitoring layout and monitoring points under the project boundary:

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the project proponent. PP proposed the following structure for data monitoring, collection, data archiving and calibration of equipment's for this project activity.

¹⁵ <https://www.cbip.org/MIR/1%20DATA/CEA%201.pdf>

The team shall comprise of the following members:

Responsibilities of O & M Head¹⁶: Overall functioning and maintenance of the project activity and overall responsibility of compliance with the Monitoring Plan.

Responsibilities of Plant In-charge: Responsibility for Maintains the data records, ensures completeness of data, and reliability of data. Regularly verifying the monthly energy generation date with energy sales receipt or installed meters reading for identification of any discrepancies in data collection and taking suitable action to rectify them.

Responsibilities of Shift In-charge:

Responsibility for day-to-day data collection and maintains day to day log book for monitored data. Responsibility for monthly and annual report generation and quality assurance of the data/reports and preliminary check of data for any discrepancies

QA/QC procedures: The energy meters at the feeders are maintained and owned by Rajasthan DISCOM. Neither the project proponent nor the site personnel have any control over it. The records will be cross-checked with the records of sold electricity to the Rajasthan DISCOM. The meters are calibrated by DISCOM at-least once in five years.

Data Archiving: Monthly data shall be archived electronically and in paper form and stored for the entire crediting period and two years thereafter.

Emergency preparedness: The project activity will not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized.

In the event that the main meter, which is used to record the net electricity exported by the project, is found to be faulty it will be repaired or replaced and the data from the check meter will be used in its place. In the unlikely event that the check meter fails it will also be repaired or replaced and stand by meter reading will be used.

In case of failure of all the meters simultaneously, a decision will be taken by RVPNL & project developers jointly as per the clause mentioned in the PPA and a generation statement will be issued by RVPNL based on their specific procedure. The RVPNL statement will form the basis for considering the amount of electricity delivered to the grid in that particular situation.

Training and maintenance requirements: Training on the machine is an essential pre-requisite, to ensure necessary safety of man and machine. Further, in order to maximize the output from the solar plants, it is extremely essential, that the engineers and technicians understand the machines and keep them in good health. Each and all site personnel are provided with proper training to meet the requirements of the operations and maintenance. This ultimately leads to creativity in

¹⁶ In this project there is in house O&M.

problem solving. The breakdown and maintenance are recorded properly throughout the verification and the record for the current monitoring period is submitted.

Personnel training: In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the project staff will be trained as per project requirements.

Apportioning: In case of mismatch of date between the start date of the billing cycle and the start date of monitoring period the data will be apportioned in line to the daily generation values for the said mismatch period.

Apportioning Procedure for deduction of Aux & transmission losses in evacuation and providing net electricity delivered to grid for the individual project developers:

S.NO	Name of Transmission line at RVPNL GSS	Export (kWh)	Import (kWh)
1.	220kV D/C Transmission Line 1	Export 1	Import 1
2.	220kV D/C Transmission Line 2	Export 2	Import 2
	Total Electricity Received at RVPNL GSS	A = Export 1 + Export 2	E = Import 1 + Import 2

Meter Reading of Individual SPD at 33kV Level (220/33kV) Adani Renewable Park pooling station			
S.No	Export/Import by all the Solar Power Developer (SPD) at 33kV feeder	Export (kWh)	Import (kWh)
1.	M/s CSEPL Plot 4 (P4)	a = P4F1+P4F2+P4F3	d = P4F1+P4F2+P4F3
2.	M/s CSEPL Plot 5 (P5)	b = P5F1+P5F2+P5F3	e = P5F1+P5F2+P5F3
N	M/s XYZ...	c = P1F1+P1F2+.... +P1Fn	f = P1F1+P1F2+....+P1Fn
	Total Export at 33kV level Exp33kV	B = a + b + c	F = d + e + f
	I. Auxiliary & Transmission losses in Evacuation	C = B - A	D = E - F
	1)		
	II. Total Generation/Export & Total Import of individual	CSEPL (P4) Export =	CSEPL (P4) Import = d

SPD after deduction of Aux & Transmission losses in Evacuation	$SPD\ 1 = a - \{(a/A) \times C\}$	$+ \{(d/E) \times D\}$
2)	CSEPL (P4) Export = $SPD2 = b - \{(b/A) \times C\}$	CSEPL (P4) Import = e $+ \{(e/E) \times D\}$
3)	$SPD\ n = c - \{(c/A) \times C\}$	$SPD\ n = c + \{(c/A) \times C\}$
III. Total Export/Import by 33kv substation =	$= SPD1+SPD2+....SPDn$	$= SPD1+SPD2+....SPDn$

Net Generation (kWh) to be billed by individual SPD				
S. No	Name of SPD	Export/Generation Unit	Import/Consumption Unit	kWh) Net Export
1	2	3	4	5 = 3 - 4
SPD 1	M/s CSEPL (P4)	SPD1-Total Exp	SPD1-Total Imp	Net Gen = Total Exp - Total Imp
SPD 2	M/s CSEPL (P5)	SPD2-Total Exp	SPD2-Total Imp	Net Gen = Total Exp - Total Imp
SPD 3	M/s XYZ...	SPn-Total Exp	SPDn-Total Imp	Net Gen = Total Exp - Total Imp

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

As per procedure established in the registered PD:

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

$EF_{grid,CM,y}$: Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO₂/MWh) (i.e., 0.93684 tCO₂/MWh).

$EG_{PJ,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh/yr)

BE_y : Baseline emissions in year y (tCO_{2e}/yr).

Here,

Monitoring Period:	Total Net Power Generated (MWh)	Baseline Emission Factor (tCO ₂ /MWh)	Total Emission Reduction (tCO ₂ / year)
01-Sept-2021 to 31-Mar-2023 (both the dates included)	365,749.73	0.93684	342,648

5.2 Project Emissions

As per the methodology ACM0002: “Grid-connected electricity generation from renewable sources”, version 19, for renewable energy power generation project activities the project emission is 0 (PE_y = 0).

5.3 Leakage Emissions

As per the methodology, ACM0002: “Grid-connected electricity generation from renewable sources”, version 19, leakage emission are not considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport etc.) are neglected.

(LE_y = 0)

5.4 GHG Emission Reductions and Carbon Dioxide Removals

As per the applied methodology, emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y = Emission Reduction in tCO₂/year

BE_y = Baseline emission in tCO₂/year

PE_y = Project emissions in tCO₂/year

LE_y = Leakage Emissions in tCO₂/year

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)
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01-Sep-2021 to 31-Dec-2021	67,720	0	0	67,720	0	67,720
01-Jan-2022 to 31-Dec-2022	220,924	0	0	220,924	0	220,924
01-Jan-2023 to 31-Mar-2023	54,004	0	0	54,004	0	54,004
Total	342,648	0	0	342,648	0	342,648

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01-Sep-2021 to 31-Dec-2021	59,007.56	67,720	+ve 12.87%	There is a marginal increase of 12.87% actual achieved emission reduction as compared to ex-ante estimated emission reduction, which is because of higher generation achieved for few months during this vintage period
01-Jan-2022 to 31-Dec-2022	176,539.00	220,924	+ve 20.09%	There is a marginal increase of 20.09% actual achieved emission reduction as compared to ex-ante estimated emission reduction, which is because of higher generation achieved for few months during this vintage period
01-Jan-2023 to 31-Mar-2023	43,530.16	54,004	+ve 19.39%	There is a marginal increase of 19.39% actual achieved emission reduction as compared to ex-ante estimated emission reduction, which is because of higher generation achieved for few months during this vintage period

Total	279,076.72	342,648	+ve 19%	For the current monitoring period from 01-Sept-2021 to 31-Mar-2023 there is a marginal increase of 19% total actual achieved emission reduction as compared to total ex-ante estimated emission reduction, which is because of higher generation achieved for few months during the year 2021 - 2023. The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant. The higher generation during the current verification period is due to certain natural conditions such as sunnier days and hence the ER also increased.
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However, the higher ERs does not have any impact on project additionality

PLF considered as per ex-ante estimate:	22%
Actual PLF achieved during the current period	26.41%
Thus, variation in PLF:	20.05% increase of actual PLF from the estimated ex-ante value of PLF

As per registered VCS validation and verification report (Joint), the project remains additional with +/- 10% sensitivity analysis and also even under most favourable condition of PLF. As per sensitivity break-even analysis carried out in the project additionality (i.e IRR) and as per the registered Validation Report, the IRR will breach benchmark only when there is variation of "24.10%" increase in PLF. However, as per the actual PLF achieved during this verification period, the variation due to the increased PLF is only 20.05% which is within the breaching variation.

Thus, it can be verified that current PLF reaches 26.41% which is below this break-even PLF (i.e. only 22.78% higher than the ex-ante PLF value against the break-even variation of 24.10%). Hence, there is no impact on project additionality due to higher PLF, thus the higher ERs.

APPENDIX 1: ENERGY METER DETAILS

Monitoring Equipment Details: Energy Meters

Calibration Frequency: Once in 5 years

Energy Meter Details	P4			P5		
	F1	F2	F3	F1	F2	F3
Main Meter	X0682811	X0682814	X0682817	X0682820	X0682823	X0682826
Check meter	X0682810	X0682813	X0682816	X0682819	X0682822	X0682825
Stand By Meter	X0682809	X0682812	X0682815	X0682818	X0682821	X0682824

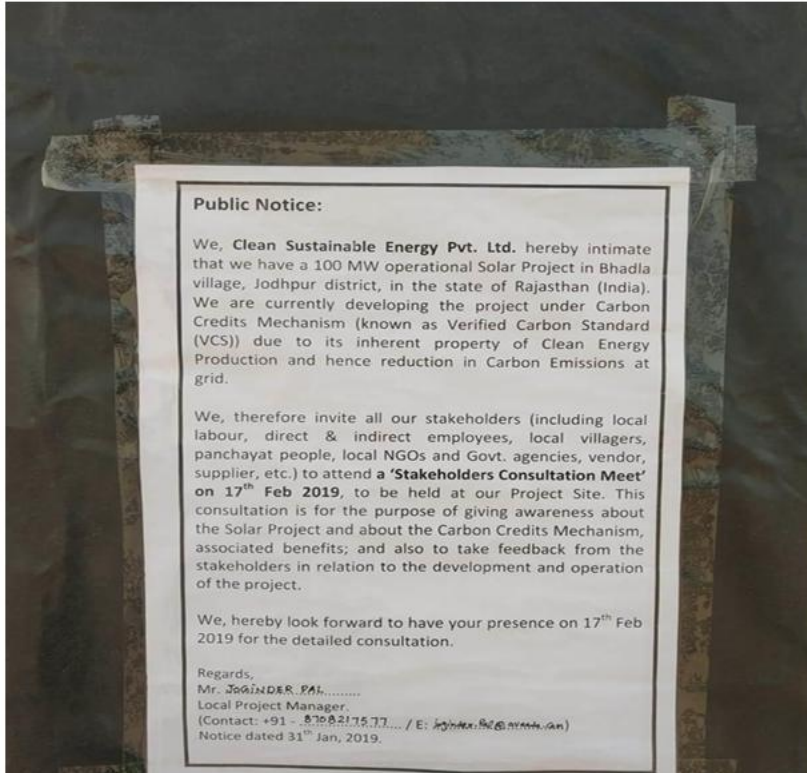
Energy Meter Details (P4 F1)	Main Meter	Check Meter	Standby Meter
S. No	X0682811	X0682810	X0682809
Make	SECURE	SECURE	SECURE
Accuracy Class	0.2S	0.2S	0.2S
Calibration Date	19/10/2020	19/10/2020	19/10/2020
Energy Meter Details (P4 F2)			
S.No	X0682814	X0682813	X0682812
Make	SECURE	SECURE	SECURE
Accuracy Class	0.2S	0.2S	0.2S
Calibration Date	18/10/2020	18/10/2020	19/10/2020
Energy Meter Details (P4 F3)			
S.No	X0682817	X0682816	X0682815
Make	SECURE	SECURE	SECURE

Accuracy Class	0.2S	0.2S	0.2S
Calibration Date	18/10/2020	18/10/2020	18/10/2020
Energy Meter Details (P5 F1)			
S.No	X0682820	X0682819	X0682818
Make	SECURE	SECURE	SECURE
Accuracy Class	0.2S	0.2S	0.2S
Calibration Date	18/10/2020	18/10/2020	18/10/2020
Energy Meter Details (P5 F2)			
S.No	X0682823	X0682822	X0682821
Make	SECURE	SECURE	SECURE
Accuracy Class	0.2S	0.2S	0.2S
Calibration Date	18/10/2020	18/10/2020	18/10/2020
Energy Meter Details (P5 F3)			
S.No	X0682826	X0682825	X0682824
Make	SECURE	SECURE	SECURE
Accuracy Class	0.2S	0.2S	0.2S
Calibration Date	18/10/2020	18/10/2020	18/10/2020
Dedicated Feeder & Metering arrangement (at Substation)			
Line 1	Main Meter	Check Meter	
S.No	18068155	18068156	
Make	LNT	LN	
Accuracy Class	0.2S	0.2S	
Calibration Date	01/09/2020	01/09/2020	
Line 2	Main Meter	Check Meter	

S.No	18053578	18053577	
Make	LNT	LN	
Accuracy Class	0.2S	0.2S	
Calibration Date	01/09/2020	01/09/2020	

APPENDIX 2: STAKEHOLDER IDENTIFICATION EVIDENCES

Public Notice:



Stakeholder Consultation:

Local Stakeholders Consultation

100 MW Solar project in Bhadla in Rajasthan
Bhadla village, Jodhpur district, in the state of Rajasthan (India).

Project Developed by:
Clean Sustainable Energy Pvt. Ltd.

17th February, 2019.
Project Site, Bhadla village, Jodhpur, Rajasthan.



Attendance Record:

Attendance Records:

Project : 100 MW Solar project in Bhadla in Rajasthan.
Location : Bhadla village, Jodhpur district, in the state of Rajasthan (India).
Date : 17th February 2019.

Name of the Person	Village	Signature / Thumb Impression
अरुण खेडकर	भडला	
राजीव	भडला	
काशीराम	भीरु	
सतार	भीरु	
सुधात्म	दूरे की बुर्ज	
ईसमार्शल खों	दूरे की बुर्ज	
अबदुला	दूरे की बुर्ज	
इकबाल	भडला	
सुभा खों	भीरु	
अनामिका	भडला	
ईश्वर	दूरे की बुर्ज	
हरी	भडला की खोली	

Comments/Feedback:

Feedback Round:

Project : 100 MW Solar project in Bhadla in Rajasthan.
Location : Bhadla village, Jodhpur district, in the state of Rajasthan (India).
Date : 17th February 2019.

Question/ Comments / Feedback:	आपकी सौर प्लांट परियोजना से क्या लाभ होगा ?
Given by:	इकबाल इकबाल
Response/ Acknowledgement:	सौर प्लांट परियोजना एक अच्छा काम है। यह परियोजना रोजगार उत्पादन और आपदा के बुनियादी ढांचे के विकास में मदद करती है।

Question/ Comments / Feedback:	सौर प्लांट परियोजना लागत कम की दुधिर कर देती है क्या ?
Given by:	हरि हरि
Response/ Acknowledgement:	यह परियोजना बनीभारतीय परियोजना है। इसे किसी तरह की सहायता से नहीं चलाया गया है। यह सूर्य की शक्ति को सौर प्लांट के माध्यम से परिवर्तित करती है। और केवल दिन के समय ही बिजली पैदा करती है।

Question/ Comments/ Feedback:	इस परियोजना के किसी तरह के छापी की गैड के हटाने का काम नहीं करी जायगा किसी को धर - छोड़ना ही करी पड़ेगा।
Given by:	सदाशिव सदाशिव
Response/ Acknowledgement:	नहीं इस परियोजना से किसी के कामों को छोड़ें सुझाव नहीं देगा, और ना ही किसी को धर छोड़ना पड़ेगा। यह परियोजना सड़ने व टूटने को अचूक तरीके में मदद करेगी व बेहतर उपलब्धता करवायेगी।

Question/ Comments/ Feedback:	इस परियोजना के अन्तर्गत लगा की जायगा और सुनिश्चित करने के लिए रास्ता का विकास होगा इसके अन्तर्गत वाली लिफ्टों का काम करने को सिधे की जायगी।
Given by:	डाला व करी डाला व करी
Response/ Acknowledgement:	कम खर्च। आपकी सुझाव और सहायता के बिना इस परियोजना से करने वाली किसी राष्ट्रिय गैड को ही जायेगी। वही से यह काम निरस्त की जायेगी।

Question/ Comments/ Feedback:	
Given by:	
Response/ Acknowledgement:	

APPENDIX 3: SUPPORTING EVIDENCE

1. Photo evidence for SDG target 4.3: Number of hours of training provided to employees.

