



BUNDLED SOLAR POWER PROJECT BY D.J. MALPANI AND GIRIRAJ ENTERPRISES



Project title	Bundled Solar Power Project by D.J. Malpani and Giriraj Enterprises
Project ID	1670 ¹
Monitoring period	01-April-2022 to 30-March-2025 (both dates inclusive)
Original date of issue	17-October-2025
Most recent date of issue	09-December-2025
Version	4.0
VCS Standard Version	VCS Standard version 4.7
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¹ <https://registry.terra.org/app/projectDetail/VCS/1670>

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PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The purpose of the bundled project activity is to generate power using renewable energy source (solar energy) and sell the power generated to the state grid. The project activity generates electricity using solar energy. The generated electricity is exported to the regional grid system which is under the purview of the INDIAN electricity grid of India.

The proposed project activity will support development of renewable energy generation plants based on Solar PV technology in India and delivering electricity to the grid.

The proposed project activity is a voluntary action being undertaken project investors. Since, the solar power is Green House Gas (GHG) emissions free, the power generated will replace anthropogenic emissions of greenhouse gases estimated to be approximately 93,022 tCO₂e per year, thereon displacing 95,145 MWh/year amount of electricity from the generation-mix of power plants connected to the INDIAN GRID, which is mainly dominated by thermal/ fossil fuel based power plant.

The total installed capacity of the current project activity is 56.25 MW; which involves operation of solar power plants in the states of Tamil Nadu and Telangana in India. The project is promoted by following project investors which are as follows:

Project Investors	Project type	Project Capacity in AC	Date of Commissioning	Project Location	State
M/s. D. J. Malpani	Solar	16.25 MW	31-March-2015	Village- Hoti Tehsil- Zaheerabad Mandal, District- Medak	Telangana
Giriraj Enterprises	Solar	40 MW	23- Sepetember- 2015	Village- Sengottai, Tehsil- Virudhunagar, District- Virudhunagar,	Tamil Nadu

The bundled project activity is a new facility (Greenfield) and the purpose of the bundled project activity is to generate energy electricity by the utilization of renewable solar PV technology and further selling the generated energy to the Indian Grid. In this process there is no consumption of any fossil fuel 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.

In the Pre- project scenario the entire electricity, delivered to the grid by the bundled project activity, would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

The total GHG emission reductions or removals generated in this monitoring period

During this monitoring period i.e. from 01-April-2022 to 30-March-2025 (First and last days included) the project activity has supplied 293,135.59 MWh of electricity, and thus contributing to the GHG reductions 286,595 tCO₂e.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	27-March-2016	VCS	Carbon Check India Private Ltd.	
1st Verification	31-March-2015 to 25- February-2017	VCS	Carbon Check India Private Ltd.	1 year, 10 months, 25 days
2nd Verification	26-February-2017 to 25-March-2018	VCS	LGAI Technological Center S.A. (Applus+ Certification)	1 year, 27 days
3rd Verification	26-March-2018 to 28- March-2019	VCS	LGAI Technological Center S.A. (Applus+ Certification)	1 year, 2 days
4th Verification	29-March-2019 to 25-February-2020	VCS	4K Earth Science Private Limited	10 months 27 days
5th Verification	26-February-2020 to 31- December-2020	VCS	LGAI Technological Center S.A. (Applus+ Certification)	10 months 05 days
6th Verification	01-January-2021 to 30-June-2021	VCS	LGAI Technological Center S.A. (Applus+ Certification)	05 Months 29 days
7th Verification	01-July-2021 to 31 -March-2022	VCS	VKU Certification Pvt. Ltd.	08 months 30 days
8th Verification	01-April-2022 to 30-March-2025	VCS	LGAI Technological Center S.A. (Applus+ Certification)	03 years

Total	31-March-2015 to 30-March-2025	VCS		10 years, 00 months, 00 days
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1.3 Sectoral Scope and Project Type

Sectoral scope ²	01 - Energy industries (renewable / non-renewable sources)
Project activity type	I - Renewable Energy Projects

1.4 Project Proponent

Organization name	M/s. D.J. Malpani
Contact person	Mr. Prafulla Khinvasara
Title	CEO- Renewable Power Projects
Address	Malpani House, New Nagar Road, Tal- Sangamner, Dist – Ahmednagar, Maharashtra, India
Telephone	+91 2425 433 010
Email	prafulla@malpani.com

Organization name	Giriraj Enterprise
Contact person	Mr. Prafulla Khinvasara
Title	CEO- Renewable Power Projects
Address	Malpani House, New Nagar Road, Tal- Sangamner, Dist – Ahmednagar, Maharashtra, India
Telephone	+91 2425 433 010
Email	prafulla@malpani.com

1.5 Other Entities Involved in the Project

Organization name	Climera Carbon Private Limited
Role in the project	Project Consultant
Contact person	Ankit Suman
Title	Manager- Operations
Address	Corp. Office - Awfis, 2nd Floor, Winway World Offices, Plot No. B-7, Scheme No. PU-4 Commercial, Vijay Nagar, Indore, M.P. - 452010, India
Telephone	+91-9752607814
Email	ankit.suman@climera.co

1.6 Project Start Date

Project start date	31-March-2015
Justification	For this project activity, the project start date is the earliest date of commissioning i.e. 31-March- 2015

1.7 Project Crediting Period

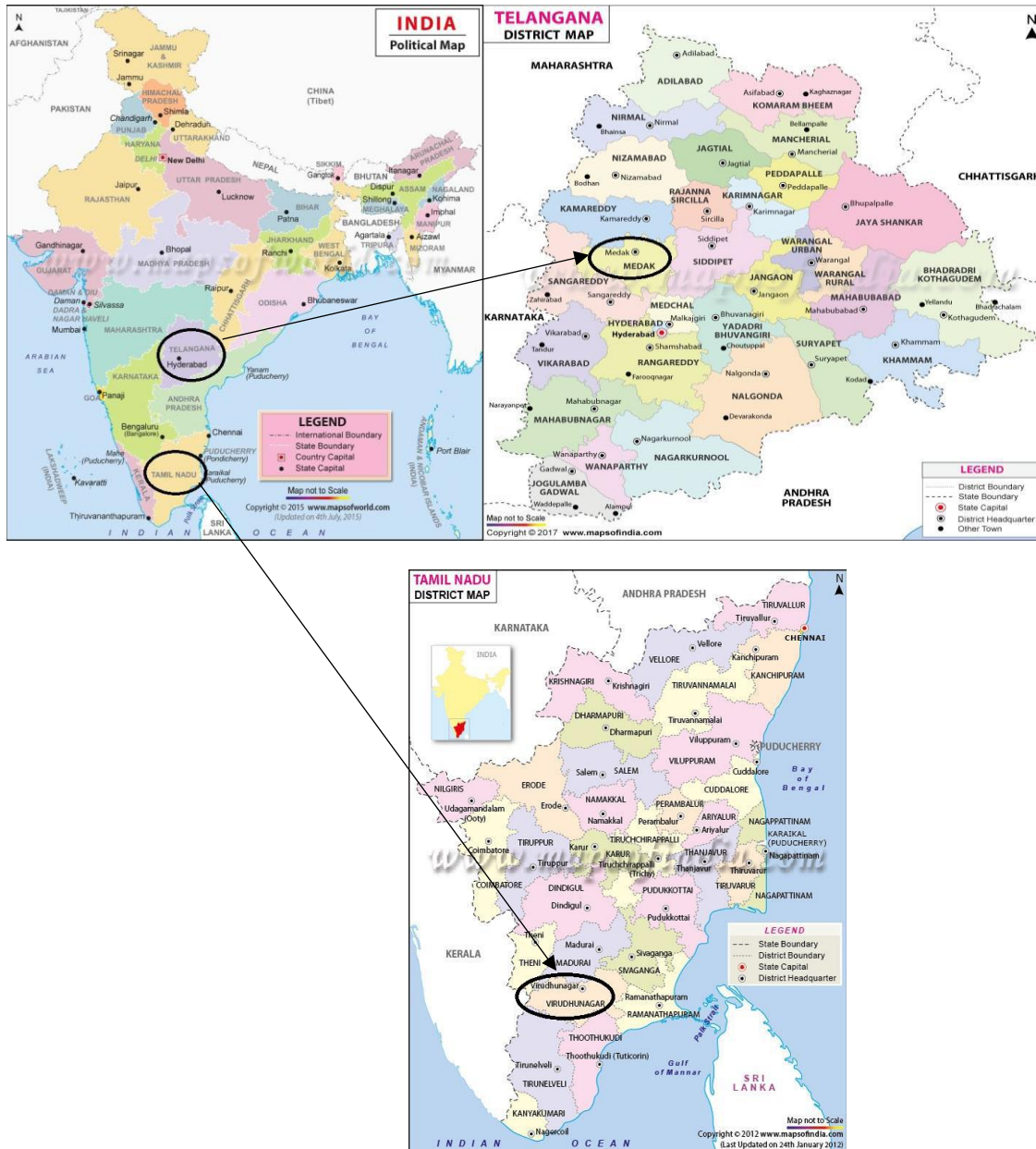
Crediting period	☐ Seven years, twice renewable ☐ Ten years, fixed ☒ Other (state the selected crediting period and justify how it conforms with the VCS Program requirements) The project activity adopts renewable crediting period of 10 years period which can be renewed for maximum 2 times
Start and end date of first or fixed crediting period	31-March-2015 to 30-March-2025 This is the 8th periodic verification of the 1st crediting period

1.8 Project Location

The details of the project locations are mentioned in the table below

Project Owner	Village	Taluka	District	State	Latitude (D° M' Sec")	Longitude (D° M' Sec")
M/s. D. J. Malpani	Hoti	Zaheerabad Mandal	Medak	Telangana	17° 39' 21.0 8"N	77° 33' 24.55" E
Giriraj Enterprises	Sengottai	Virudhunagar	Virudhunagar	Tamil Nadu	9° 38' 8.03" N	77° 51' 16.17" E

The project locations have been shown in the map below:



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
Tool	Tool 1	Tool for the demonstration and assessment of additionality	07.0.0
Tool	Tool 7	Tool to calculate the emission factor for an electricity system	05.0

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

Ministry of Environment, Forests and climate change (MoEFCC), 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 phases. The project activity will lead 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 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 PV based power generation which helps to reduce GHG emissions and specific pollutants like SO_x, NO_x, and SPM associated with the 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 dependence 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.

The project activity has beneficial effect on the local environment and employment in the nearby region. Clean Electricity generation through Solar technology results in avoidance of consumption of fossil fuels which results in contribution to SDG 7. The emission avoidance through these activities results in contribution to SDG 13. All the workers at site are trained which results in increase of skills, which contributes to SDG 8. Detailed indicators are mentioned in table 1. This is a voluntary project activity doesn't contribute to achieving any nationally stated sustainable development priorities. There is no compliance for monitoring and reporting the emission reduction and SDG contribution from the project activity.

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	SDG 7	7.2.1 Renewable energy share in the total final energy consumption	Implemented activities to increase	About 293,135.59 MWh renewable electricity has supplied to Indian grid during the reported period that helps to increase the renewable energy share in the energy mix.	About $91,474.27 + 112,098 + 103,014.76 + 148,710.02 + 79,678 + 49,916 + 72,893 + 293,135.59 = 950,919.64$ MWh renewable electricity has supplied to Indian grid throughout the project lifetime that helps to increase the renewable energy share in the energy mix.
2)	SDG 8	8.6.1 Proportion of youth (aged 15- 24 years) not in education, employment or training.	Implemented activities to decrease	Total 10 numbers of trainings conducted and 5 people employed during the current monitoring period.	Overall, Total 20 numbers of trainings conducted and 15 people have been employed since the project was implemented.
3)	SDG 13	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	By supplying 293,135.59 MWh clean electricity (generated through Solar PV) to Indian grid, the project avoided release of 286,595 tCO _{2e} in to the atmosphere during the reporting period.	Overall Prevented the release of $89,423 + 105,597 + 100,718 + 145,393 + 77,900 + 48,803 + 71,267 + 286,595 = 925,696$ tCO _{2e} into the atmosphere since project commissioning.

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	NA ³
Legal or customary tenure/access rights	NA
Stakeholder diversity and changes over time	NA
Expected changes in well-being	NA
Location of stakeholders	NA
Location of resources	NA

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	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.
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³ At the time of project validation, VCS Standard Version 3.6 was applicable. As stated in Section 5.3 of the registered PDMR, and in accordance with Sections 3.17.2–3.17.4 of VCS Standard 3.6, the validation contract was signed prior to 19 April 2017; therefore, a local stakeholder consultation was not mandatory. Consequently, the project proponent did not conduct a stakeholder meeting, and no related information is available. Hence, this section is marked as N/A.

Date(s) of stakeholder consultation	N/A
Communication of monitored results	The process of local stakeholder consultation is continuous. During the current monitoring period, the project proponent has kept grievance register in plant site office and sought comments/grievances/suggestions from local stakeholders including local community, government agencies and NGOs. However, no comments/grievances/suggestions have been received from the aforementioned stakeholders during the current monitoring period and all such minor suggestions have been taken care by the PP.
Consultation records	For ongoing communication with local stakeholders, PP has kept the grievance register on security gate of project premises to record any grievance or feedback by any stakeholders.
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	There are no ongoing or unresolved conflicts related to the project, as a comprehensive stakeholders meeting was conducted before the initiation of project activities. All relevant stakeholders were invited to participate through formal invitations and were encouraged to raise any concerns or questions. The project proponent addressed all queries during the meeting, ensuring that any potential issues were resolved before the project began. As a result, the project does not exacerbate or influence the outcomes of any unresolved conflicts, as it was designed with transparency and neutrality, ensuring all stakeholders' concerns were adequately addressed and mitigated in advance.
Outcome of FPIC	The project has not encroached on land, relocated people, or caused any physical or economic displacement. All

necessary assessments and consultations were conducted to ensure compliance with legal requirements, and no individuals or communities have been displaced by the project.

2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome
No grievance received	Feedback register is kept at project site office where any stakeholder can come and register his/her feedback
	The project owner has operating complaint procedure. The PP has kept the register on plant site office for logging the ongoing communication or any grievance from the stakeholder which is easily accessible to the all stakeholders. This procedure of ongoing communication log & addressal is used for the project. Stakeholders' feedback is monitored daily and any grievance if found, resolved immediately. No action required as no grievance received for the current monitoring period

2.1.5 Public Comments

Summary of comments received	Actions taken
No comments received	No action required as no comments were received. During the current monitoring period not a single comment or grievance has been lodged in the grievance register Hence no action has been taken for any complaint or feedback,

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

A new other entity has been involved in the current monitoring period “Climera Carbon Private Limited”, serving as the project consultant. The management team of the project consultant possesses substantial expertise and experience in implementing similar project activities, including community engagement. The involvement of this new entity in the project’s design and implementation ensures continuity and stability in project management. The team has a proven track record in managing construction, operations, and community engagement, with a strong focus on environmental and social aspects. Their responsibilities also include 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 risk identified	The project does not pose any risks to stakeholder wellbeing. The PP is ensuring open and transparent dialogue with the stakeholders.
Risks to stakeholder participation	No risk identified	Stakeholder participation in solar projects poses minimal risk due to the clean nature of solar energy production, which does not emit pollutants. This fosters positive community relationships and reduces potential health and environmental concerns, ensuring smoother project implementation and garnering support from the community.
Working conditions	No risk identified	During the monitoring period, all workers were engaged under formal employment terms in compliance with applicable labour

		laws and organizational policies. Adequate measures were implemented to ensure fair wages, reasonable working hours, and access to necessary welfare facilities. Regular inspections and internal reviews confirmed that no concerns related to labour rights, worker treatment, or workplace conditions were reported. Therefore, the working environment remained safe, compliant, and consistent with established standards.
Safety of women and girls	No risk identified	Ensuring the safety of women and girls in the project involves comprehensive risk assessment and mitigation strategies. Measures such as well-lit areas, security patrols, gender-sensitive policies, and training on harassment prevention help mitigate risks, fostering a safe environment for all stakeholders and workers.
Safety of minority and marginalized groups, including children	No risk identified	While solar projects generally entail minimal or no risks to minority and marginalized groups, comprehensive safety measures have been implemented. This includes ensuring safe access to project sites, implementing child protection policies, and addressing any potential social or economic impacts on marginalized communities, thereby safeguarding their well-being throughout project development and operation.
Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers)	No risk identified	As it is a solar power project, hence no risk identified. Noise Pollution: There is no noise generated by the solar plant. Air Pollution: There is no risk of air pollutants being emitted from the solar plant. Discharges to Water: No discharges to water bodies are anticipated, which suggests minimal to no risk of water pollution.

		Generation of Waste: The operation of the plant does not result in the generation of significant waste. Hazardous Materials: No hazardous materials or chemicals, such as pesticides or fertilizers, are released as part of the solar plant's operation. The projects' lack of pollutants substantially reduces risks to stakeholders, including potential health hazards or environmental contamination. This inherent cleanliness fosters a safer environment for communities, minimizing concerns related to air and water quality, noise pollution, waste generation, and exposure to hazardous materials, ensuring overall safety and well-being.
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2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

	Risks identified ⁴	Mitigation or preventative measure(s) taken
Discrimination	No risk identified	No risk identified. Equal opportunity practices are actively implemented across the project. Discrimination based on personal, social, or demographic factors is explicitly prohibited. The project's internal policies foster diversity, promote inclusive conduct, and prohibit all forms of harassment. A confidential grievance mechanism is established to promptly address any reported concerns. No instances of discrimination have been observed or reported during the current monitoring period. Preventative systems are in place to ensure ongoing compliance and early resolution of potential issues.

⁴ 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	No risk identified	PP has provided declaration that no sexual harassment has occurred or will occur. No risk identified. The project enforces a zero-tolerance policy towards any form of harassment. Internal mechanisms are established to confidentially manage complaints. Regular training and awareness programs are conducted to uphold a respectful workplace culture.
Gender equity in labor and work	No risk identified	PP provides equal opportunities in the context of gender equity and pay for labor and work. No risk identified. Equal participation and pay practices are followed irrespective of gender. Recruitment, compensation, and advancement are based on merit. Monitoring systems help ensure continued fairness and non-discrimination. Ongoing training programs also foster gender inclusivity and address unconscious biases in the workforce. The Project Proponent ensures equal wage pay to its employees keeping them in line with the minimum wage criteria as per state labor laws.
Forced labor	No risk identified	The project has implemented stringent ethical policies in line with national labor act 1986. Regular audits and inspections are carried out to verify that the project's supply chain and workforce are free from forced labor. The company policy restricts hiring of any such employee involved in such practices. The project remains under strict surveillance of the project proponent & the state DISCOM, any malpractice at the project implemented site will be immediately reported and strict actions will be taken. Since the date of project start date, PP has not encountered any such activity at the project site.
Child labor	No risk identified	No risk identified. Systems are in place to verify worker age during hiring. There is no force labor, which is as per labor act 1986. Labor policies prohibit the engagement of underage workers, and routine checks are conducted to ensure

		adherence to these policies across all project activities.
Human trafficking	No risk identified	No risk identified. Employment and subcontracting practices are structured to prevent coercion or exploitation. All hiring is based on free and informed consent. Screening procedures for labor providers help ensure ethical sourcing and fair treatment

2.3.2 Human Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	PP has provided declaration that there will be no human rights violation of any kind to any of the stakeholders during construction and operation of the project activity.

2.3.3 Indigenous Peoples and Cultural Heritage

Risks identified	Mitigation(s) or preventative measure taken
No risk identified	The project is implemented entirely within the boundaries of privately owned land. No physical or cultural heritage sites of Indigenous Peoples have been identified within or near the project area. Regular site assessments and stakeholder consultations confirm that there has been no adverse impact on tangible or intangible cultural heritage. Measures are in place to ensure continued protection of local and national heritage assets throughout the project's lifecycle.

2.3.4 Property Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	The project activity is implemented on Project owners land and PP is committed to protecting and preserving the property rights of IPs, LCs, and customary rights holders, and to protecting legal or customary tenure/access rights to territories, property, and resources.

2.3.5 Benefit Sharing

Summary of the benefit sharing plan	As this is the solar project activity and there is no benefit sharing plan form at the time project registration, hence there are no any changes or re-negotiated or opted out of the plan during the current monitoring period.
Benefit sharing during the monitoring period	Not Applicable

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 risk identified. The project activity has not resulted in any adverse impact on biodiversity or ecosystems. On the contrary, it contributes positively by reducing air pollution and mitigating climate change. During the monitoring period, no negative interactions with local flora or fauna were observed. Solar energy projects are typically considered environmentally benign, with limited disruption to surrounding ecosystems.
Soil degradation and soil erosion	No risk identified	No soil erosion and degradation are likely to be caused. This project is a solar power project and does not result adverse effects on Soil degradation and soil erosion.
Water consumption and stress	No risk identified	No risk identified. Water usage associated with the project remains minimal and within sustainable limits. No signs of water stress or resource depletion were observed during the monitoring period. Solar plant operations typically require very low volumes of water, helping to preserve local water resources and minimize ecological pressure.

2.4.1 Rare, Threatened, and Endangered species

Species or habitat	As this project activity is solar project activity and project activity is not located in, nor adjacent to, any habitats known to support rare, threatened, or endangered species. there is no evidence of such species or sensitive ecological zones within or near the
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	project boundaries. Hence this section is not applicable for the current monitoring period.
Areas needed for habitat connectivity	Not Applicable

2.4.2 Introduction of species

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

2.4.3 Ecosystem conversion

	Risks identified	Mitigation or preventative measure(s) taken
Ecosystem conversion	No risk identified	The project is a Solar project activity and does not involve ecosystem conversion as defined for ARR, ALM, WRC, or ACoGS projects.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

Starting date of the operation of the project activity is 31-March-2015 which is the date of commissioning/commercial operation of the 1st solar project and since then it is in continuous operation.

The project activity involves the installation of 56.25 MW solar power project at Tamil Nadu and Telangana in India. The project activity has been commissioned and the monitoring equipment's were installed to monitor the parameters as described in the registered Project Description (PD). The project activity is already commissioned and operational. The commissioning details of the project are as follows:

Project Proponents Name	Capacity in MW (AC)	Commissioning Date
M/s. D. J. Malpani	16.25 MW	31-March-2015
Giriraj Enterprises	40 MW	23-September-2015

The plant has been under operation continuously since commissioning.

A new other entity has been involved in the current monitoring period "Climera Carbon Private Limited", serving as the project consultant. The management team of the project consultant possesses substantial expertise and experience in implementing similar project activities, including community engagement.

No major equipment has been replaced or exchanged since commissioning. There are no changes that have happened in project activity during the current monitoring period which may impact the applicability of the methodology. However, during this monitoring period, no any major breakdown.

3.2 Deviations

Deviation 1 – The standby energy meter installed in the project activity has the serial number 16538748. However, in the previous verifications of the project activity, the standby meter serial number was incorrectly recorded as 02811297.

The deviation has been identified and corrected in the current monitoring period, and the correct standby meter serial number (16538748) has now been duly recorded. Therefore, there is no impact on the emission reduction calculations or the integrity of the monitoring results.

The identified deviation relates solely to an incorrect recording of the standby energy meter serial number in previous verifications.

This deviation is administrative in nature and does not impact the applicability of the applied methodology, the demonstration of project additionality, or the appropriateness of the baseline scenario. The baseline and project emissions calculations continue to be based on the same monitoring system as approved.

3.2.1 Methodology Deviations

No methodology deviation is applied during the monitoring period.

3.2.2 Project Description Deviations

No Project description deviation has been taken during current monitoring period.

3.3 Grouped Projects

The project is not a grouped project. thus, this is not applicable

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, May 2016
Value applied	0.9941
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” as 3-year generation weighted average using data for the years 2012-13, 2013-14 & 2014-15. The data are obtained from “CO ₂ Baseline Database for Indian Power Sector” version 11, 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, May 2016
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” BM is calculated ex-ante based on the most recent information available at the time of submission of PD and is fixed for the entire crediting period. The data is 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	The above value is fixed and it is same 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, May 2016
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%
Purpose of data	For the calculation of the Baseline Emission
Comments	The parameter is fixed ex-ante for 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 (MWh)
Source of data	joint meter readings
Description of measurement methods and procedures to be applied	The value of net electricity generation supplied to the grid as per Joint Meter Reading Report forms the basis for calculation of the emission reductions; which can be cross checked from the invoice raised to DISCOM.”(DISCOM of Telangana – Southern Power Distribution Company of Telangana state & DISCOM of Tamil Nadu state - Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)” Net electricity supplied to grid will be calculated as the difference of the measured values of “export” and “import” of electricity through the dedicated SEB energy meter installed at the delivery point (i.e. the connected substation). Net electricity generated and supplied by the project (Solar) plant/unit to the grid = Electricity Export to the grid - Electricity Import from the grid Monthly meter readings are taken from the main and check meter installed at the substation and certified by the representatives of SEB Officials and the representatives of the project proponent.

Frequency of monitoring/recording	Continuous monitoring, hourly measurement and at least monthly recording
Value monitored	293,135.59 MWh
Monitoring equipment	Meter Sr no of Tamil Nadu site⁵ Meter Sr no - 17074037 (main meter) Meter Sr no - 17074077 (Check meter) Meter Sr no of Telangana site Meter Sr no - 16351134 (main meter) Meter Sr no - 16538748 (Standby meter) Meter Sr no - 16538757 (Check meter) Monitoring: Tri vector meter will be used Data type: Measured Type of meter: Static type meter (Main & Check). Both are Bidirectional meters. Class of meter: 0.2s
QA/QC procedures to be applied	- The energy meter reading are taken on monthly basis. - Energy meters will be calibrated once in a five year and faulty meters will be duly replaced immediately. - The energy meters for Tamil Nadu state are under the control of state utility (Tamil Nadu Generation and Distribution Corporation Limited) TANGEDCO and the energy meters for Telangana state are under the control of state utility (Southern Power Distribution Company) and calibration of energy meters is also under the jurisdiction of state utility. - The Net electricity exported to the grid will be cross checked against the invoice raised by the PP towards the DISCOM (Tamil Nadu Generation and Distribution Corporation Limited) TANGEDCO and Southern Power Distribution Company.
Purpose of the data	Calculation of baseline emissions
Calculation method	-
Comments	The data would be archived electronically and maintained for the entire crediting period plus two years.

⁵ Please see appendix III for meter details of both sites of the project activity

4.3 Monitoring Plan

Aim of monitoring:

The monitoring methodology specified in the methodology 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 emission factor for regional grid, would form the baseline for the project activity.

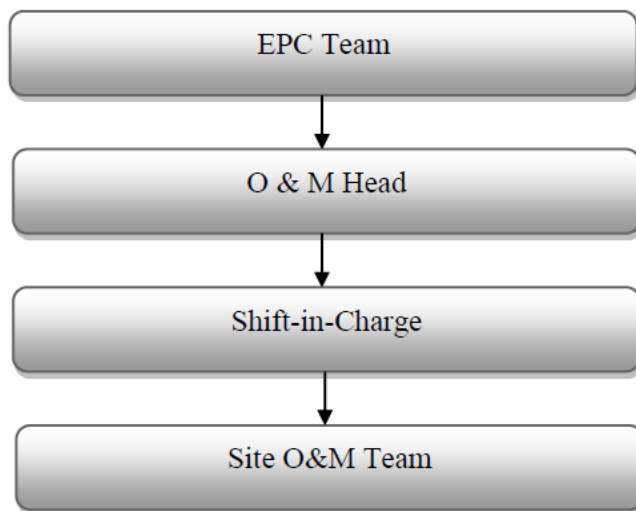
Since the baseline emission factor is based on an ex-ante determination, monitoring of this parameter is not required. The sole parameter for monitoring is the net electricity exported to the grid.

Monitoring roles and responsibilities

The operational and management structure implemented for data monitoring is as follows:

The monitoring plan is developed in accordance with the modalities and procedures for project activities and is proposed for grid-connected solar power project being implemented within India territory. The monitoring plan, which will be implemented by the project proponent 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 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. The team comprises of the following members:



Responsibilities of O & M Head: Overall functioning and maintenance of the project activity and overall responsibility of compliance with the CDM/VCS 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.

Apportioning –In case of common metering arrangement, the apportioning will be done by state electricity board and PP is getting break up sheet where the energy supplied by project activity to grid is mentioned. The same break up sheet will be used for invoice purpose. This apportioning process is under control of state electricity board and PP do not have any control on it.

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. 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 state electricity board. 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 state electricity board. The meters are calibrated by state electricity board at-least once in five years.

Data Measurement:

The export and import energy will be measured continuously using above mentioned Main & Check meters. Export & Import readings of Main & Check meters shall be taken on monthly basis by authorized officer of state electricity board in the presence of PP or representative of PP. The meter reading will be taken jointly and signed by the representatives of the state electricity board and project investors. Based on the readings, invoices will be raised by project investors. These invoices can be used for cross checking the meter readings taken for the project activity. It is to be noted though PP or PP representative is available during meter reading, the calculations of net electricity supplied to grid is completely under purview of state electricity board officer and PP do not have any control on it. Also accuracy class of meters and calibration frequency is under purview of state electricity board officer and PP do not have any control on it. PP got the monthly credit report from where net electricity supplied to grid is obtained and used for emission reduction calculations.

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.

Training and maintenance requirements:

Each and every site personnel is provided with proper training to meet the requirements of the Operations and maintenance. This ultimately leads to creativity in problem solving.

Personnel training:

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff (CDM/VCS team) will be trained. The plant helpers will be trained in equipment operation, data recording, reports writing, operation and maintenance and emergency procedures in compliance with the monitoring plan.

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.

As, this is wind project activity, internal audits are conducted as part of the regular project management and quality assurance procedures. The internal auditing process includes periodic site inspections, document reviews, assessment of operational practices, verification of maintenance records, and evaluation of health, safety, and environmental compliance.

Any non-conformities identified during these internal audits are documented and categorized based on their severity. Corrective actions are then assigned to the responsible site or operational team, along with defined timelines for closure. Follow-up reviews are carried out to ensure that all corrective actions have been effectively implemented. For the current monitoring period, no any non-conformities affecting GHG monitoring or reporting were observed.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

As per the approved consolidated Methodology ACM0002 (Version 17.0): Baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid connected power plants and the addition of new grid- connected power plants. The baseline emissions are to be calculated as follows:

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

Where:

BE_y = Baseline emissions in year y (t CO₂/yr)

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

$EF_{grid,CM,y}$ = 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” (t CO₂/MWh).

Parameter	EG _{PJ,y}	EF _{grid,y}	BE _y
Year	MWh	tCO ₂ /MWh	tCO ₂
01-April-2022 to 31-December-2022	72,797.23	0.9777	71,173
01-January-2023 to 31-December-2023	100,424.71	0.9777	98,184
01-January-2024 to 31-December-2024	95,070.70	0.9777	92,950
01-January-2025 to 30-March-2025	24,842.95	0.9777	24,288
Total	293,135.59		286,595

5.2 Project Emissions

Not Applicable, since emissions from the project activity is zero as per ACM0002 methodology. Hence, PE_y = 0.

5.3 Leakage Emissions

Not Applicable, since leakage emissions from the project activity is zero as per ACM0002 methodology. Hence, LE_y = 0.

5.4 GHG Emission Reductions and Carbon Dioxide Removals

The net emission reductions achieved during the current monitoring period are being calculated as per below equation:

$$\text{Net Emission Reductions} = \text{BE}_y - \text{PE}_y$$

$$= 286,595 - 0$$

$$= 286,595 \text{ tCO}_2\text{e (Round down)}$$

The vintage breakup has been tabulated below.

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-April-2022 to 31-December-2022	71,173	0	0	71,173	0	71,173
01-January-2023 to 31-December-2023	98,184	0	0	98,184	0	98,184
01-January-2024 to 31-December-2024	92,950	0	0	92,950	0	92,950
01-January-2025 to 30-Mrch-2025	24,288	0	0	24,288	0	24,288
Total	286,595	0	0	286,595	0	286,595

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01-Apr-2022 to 31-Dec-2022	70,085	71,173	2%	The (ERs) achieved during the monitoring period are higher than the estimated in the VCS PDMR. This increase is attributed to the higher PLF realized by the project activity. It is important to note that PLF is primarily influenced by the availability of solar irradiance, which is a natural phenomenon and beyond project proponent.
01-Jan-2023 to 31-Dec-2023	93,022	98,184	6%	The (ERs) achieved during the monitoring period are higher than the estimated in the VCS PDMR. This increase is attributed to the higher PLF realized by the project activity. It is important to note that PLF is primarily influenced by the availability of solar irradiance, which is a natural phenomenon and beyond project proponent.

01-Jan-2024 to 31-Dec-2024	93,277	92,950	-0.4%	The (ERs) achieved during the monitoring period are lower than the estimated in the VCS PDMR. This decrease is attributed to the lower PLF realized by the project activity. It is important to note that PLF is primarily influenced by the availability of solar irradiance, which is a natural phenomenon and beyond project proponent.
01-Jan-2025 to 30-Mar-2025	22,682	24,288	7%	The (ERs) achieved during the monitoring period are higher than the estimated in the VCS PDMR. This increase is attributed to the higher PLF realized by the project activity. It is important to note that PLF is primarily influenced by the availability of solar irradiance, which is a natural phenomenon and beyond project proponent.
Total	279,066	286,595	2.70%	The (ERs) achieved during the monitoring period are higher than the estimated in the VCS PDMR. This increase is attributed to the higher PL realized by the project activity. It is important to note that PLF is primarily influenced by the availability of solar irradiance, which is a natural phenomenon and beyond project proponent.

APPENDIX I: COMMERCIALLY SENSITIVE INFORMATION

No commercially sensitive information has been provided in the monitoring report.

APPENDIX II : TECHNICAL SPECIFICATION OF EQUIPMENT

The technical Specifications for 16.25 MW project activity is as below

CSUN 255-60P- Polycrystalline Solar PV modules

Capacity DC – 17.92854 MWp (70308 No of Nodules, 255 Watt capacity)

Inverter – ABB make, PVS800-57-1000KW-C

The technical Specifications for 40 MW project activity is as below

Canadian Solar PV Modules, 315 Wp (CS6X-315P),

Capacity DC – 49.565280 MWp (Total Modules (87,024+72,864=159,888) of 315 Watt capacity)

AC output capacity – 40 MW

APPENDIX III: CALIBRATION RECORDS

Calibration Details

Although, 5 years calibration frequency has been taken as mentioned in the Power Purchase Agreement and as per the registered PD, the validity of the calibration as mentioned in the calibration certificates are mentioned below. An error factor has been applied in cases where meter calibration was delayed during the current monitoring period.

Meter and Calibration details for current monitoring period:

40 MW Project Activity by Giriraj Enterprises

40 MW Tamil Nadu site

Meter Sr no	Type	Make	class	Date of calibration	Validity	Date of calibration	Validity
17074037 (main meter)	ER 300 P	L&T	0.2s	10-oct-2018	09-Oct-2023	01-July-2025	30-Jun-2030
17074077 (Check meter)	ER 300 P	L&T	0.2s	10-oct-2018	09-Oct-2023	01-July-2025	30-Jun-2030

Note – The meter calibration has been delayed from 10-oct-2023 to 30-mar-2025 in this monitoring period. So PP has been applied the error factor 0.2 from October 2023 to March 2025 to calculate the emission reduction for the current monitoring period.

16.25 MW Project Activity by D J Malpani

16.25 Telangana sites

Meter Sr no	Type	Make	class	Date of calibration	Validity
16351134 (main meter)	Alpha A 1800	Elster	0.2s	11-June-2020	10-June-2025

16538748 ⁶ (Standby meter)	Alpha A 1800	Elster	0.2s	07-May-2024 ⁷	06-May-2029
16538757 (Check meter)	Alpha A 1800	Elster	0.2s	11-June-2020	10-June-2025

⁶ The standby energy meter installed in the project activity has the serial number 16538748. However, in the previous verifications of the project activity, the standby meter serial number was incorrectly recorded as 02811297. This deviation has been identified and addressed in the current monitoring period, and the correct standby meter serial number (16538748) has now been recorded accordingly.

⁷ Note – The calibration of the standby meter (Sr. No. 16538748) was delayed from 01 April 2022 to 06 May 2024 during the current monitoring period. Since the generation data for emission reduction calculations is taken from the main meter, the delay in calibration of the standby meter has no impact on the claimed GHG emission reductions or the additionality of the project activity. Hence, the PP has not applied any error factor for calculating the emission reductions.