



RENEWABLE SOLAR POWER PROJECT BY ADANI



Document Prepared by EKI Energy Services Limited

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Project ID	2043
Monitoring period	01-December-2021 to 31-October-2024 (Inclusive of both the dates)
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Version	05
VCS Standard Version	V 4.7
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PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The main purpose of this project activity is to generate clean form of electricity through renewable solar energy source. The project involves installation of 200 MW solar project in Gujarat and Rajasthan.

Over the 10 years of first crediting period, the project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 437,825 tCO_{2e} per year, thereon displacing 467,362 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 details of the project are mentioned in the table below-

Name of the SPVs	Capacity (MW)	COD	Connection with the Grid	State	Usage
Adani Renewable Energy (RJ) Limited	100	02-August-2019	Indian Grid	Rajasthan	Sale to Grid
	100	21-August-2019			

Scenario existing prior to the implementation of project activity:

The scenario existing prior to the implementation of the project activity, is electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

Total emission reductions achieved in this monitoring period:

During the current monitoring period of 01-December-2021 to 31-October-2024, the total GHG emission reductions achieved by this project activity is 1,312,873 tCO_{2e}.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	02-August-2019 to 01-August-2029	VCS	Earthood	10 years

Verification	02-August-2019 to 30-November-2019	VCS	Earthood	3 months, 30 days
Verification	01-December-2019 to 31-December-2020	VCS	LGAI Technological Center S.A.	1 year, 1 month
Verification	01-January-2021 to 30-November-2021	VCS	LGAI Technological Center S.A.	11 months
Verification	01-December-2021 to 31-October-2024	VCS	TUV SUD	2 years 11 months
Total				Validation – 10 years, Verification – 5 years 2 months 30 days

1.3 Sectoral Scope and Project Type

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

1.4 Project Proponent

Organization name	Adani Green Energy Limited
Contact person	Mr. Alpesh Gedia
Title	Associate Manager- Business Development
Address	Adani House, Nr Mithakhali Six Roads, Navrangpura, Ahmedabad-380009, Gujarat, India
Telephone	+91 9907534900
Email	alpeshk.gedia@adani.com

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>

1.5 Other Entities Involved in the Project

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

1.6 Project Start Date

Project start date	02-August-2019
Justification	The project start date is the date of commissioning of 100 MW solar PV project activity.

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) ²
Start and end date of first or fixed crediting period	02-August-2019 to 01-August-2029

² As per VCS Standard Version 3.7, and in line with the registered VCS Joint Project Description & Monitoring Report, the project activity adopts a renewable crediting period of 10 years, which can be renewed for maximum 2 times.

1.8 Project Location

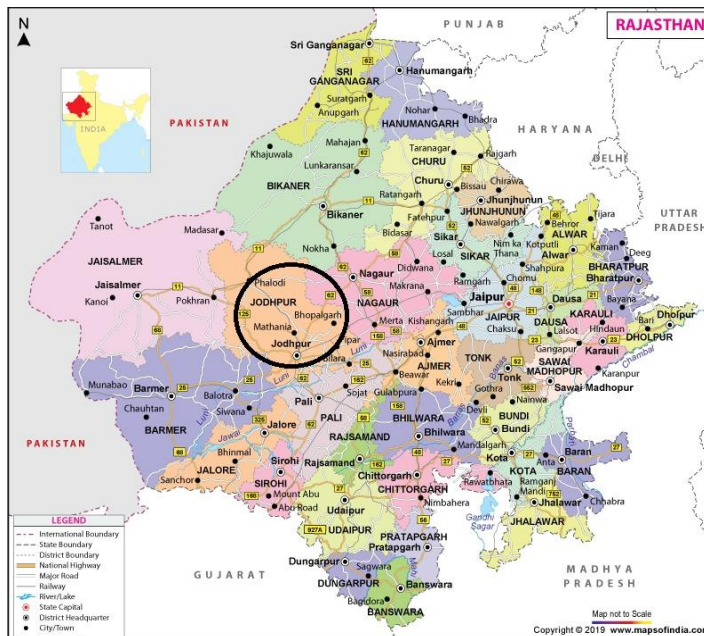
The details of the project locations are mentioned in the table below-

Name of the SPVs	Capacity (MW)	Village	Taluka	District	State
Adani Renewable Energy (RJ) Limited	100	Rawra, Bhiv Ji ka Gaon & Hanuwant Nagar	Bap	Jodhpur	Rajasthan
	100				

The Geo-coordinate of the project activity is given below

Name of the SPVs	Capacity (MW)	District	State	Latitude (N)	Longitude (E)
Adani Renewable Energy (RJ) Limited	200	Jodhpur	Rajasthan	27° 24' 33.1"N	72° 12' 04.3"E

The project location has been highlighted in the map shown below



1.9 Title and Reference of Methodology

Type (methodology, tool or module)	Reference ID, if applicable	Title	Version

Methodology	ACM0002 ³	Grid-connected electricity generation from renewable sources	19.0
TOOL	07 ⁴	Tool to calculate the emission factor for an electricity system.	07.0
TOOL	01 ⁵	Tool for the demonstration and assessment of additionality.	07.0

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

³ <https://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDE02VN6LYM30K41HFPRO>

⁴ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

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

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:

Ministry of Environment, Forest and Climate Change 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 helped in generating employment opportunities during the construction and operation phases. The project activity leads to development in infrastructure in the region like development of roads, telecommunication 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 creates local employment generation which helps economic well-being of local people.
- **Technological well-being:** The successful operation of project activity is helping in promotion of solar power generation and is encouraging other entrepreneurs to participate in similar projects.
- **Environmental well-being:** The project activity 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 main purpose of this project activity is to generate clean form of electricity through renewable solar energy source. The project involves installation of 200 MW solar project in the state of Rajasthan, India. The Project activity is a new facility (Greenfield) and the electricity generated by the project is exported to the Indian electricity grid. The project therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid.

In the Pre- project scenario the entire electricity, delivered to the grid by the project activity, would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources. The project shall result in replacing anthropogenic emissions of greenhouse gases (GHGs) estimated to be approximately 437,825 tCO_{2e} per year, thereon displacing 467,362 MWh/year amount of electricity from the grid over the 10 years crediting period.

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

1. SDG 7 Affordable and Clean Energy: Since the project activity is a solar power project, it generates clean energy. The Project activity is a new facility (Greenfield) and the electricity generated by the project is exported to the Indian electricity grid. The project therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid.
2. SDG 8 Decent work and Economic Growth: SDG Target 8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training.
3. SDG 13 Climate Action: The main purpose of this project activity is to generate a clean form of electricity through renewable solar energy sources. The project activity involves total capacity of 200 MW solar power project which is installed in the state of Rajasthan of India.

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	7.2	7.2.1: Renewable energy share in the total final energy consumption	Implemented activities to increase	About 1,401,445.36 MWh renewable electricity has been supplied to Indian grid during the current monitoring period that helps to increase the renewable energy share in the energy mix.	Overall, 2,529,727.19 MWh (123,867.01 + 529,161.67 + 475,253.15 + 1,401,445.36) renewable electricity has been supplied to Indian grid throughout the project lifetime till end of current monitoring period that helps to increase the renewable energy share in the energy mix.
2)	13.2	13.2.2: Total greenhouse gas emissions per year	Implemented activities to decrease	By supplying 1,401,445.36 MWh clean electricity (generated through this solar project) to Indian grid, the project avoided release of 1,312,873 tCO ₂ e in to the atmosphere during the reporting period.	Overall prevented the release of 2,369,845 (116,037 + 495,718 + 445,217 + 1,312,873) tCO ₂ e into the atmosphere since project commissioning till end of current monitoring period.
3)	8.6	8.6.1 Proportion of youth (aged 15–24 years) not in education, employment or training	Implemented activities to decrease	The number of trainings provided are 20 numbers.	A total of 20 number of trainings has been conducted since project commissioning till the end of the current monitoring period.

1.13 Commercially Sensitive Information

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

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

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

	1. Economic well-being – the project activity is likely to provide employments to the locality thus economic well beings are expected 2. Environmental well-being – as this project activity cuts down GHG emissions in the atmosphere generating electricity using solar energy; thus, it will bring environmental well-being in the locality.
Location of stakeholders	Rawra, District: Jodhpur (Rajasthan)
Location of resources	Rawra, Taluka: Bap, District: Jodhpur, Rajasthan

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	As part of on-going communication with local stakeholders, end users were verbally informed about the grievance register during the current monitoring period. Thus, ongoing communication of stakeholders was followed through grievance mechanism. If any concerns received during operation of project activity, same were to be addressed if relevant to project activity. Stakeholders' consultation is a continuous process and hence a feedback register is kept at the project site office where any stakeholder can come and share his/her feedback. The feedback irrespective of the type is taken care by PP with utmost priority.
Date(s) of stakeholder consultation	06-June-2019
Communication of monitored results	The monitoring results are communicated from the concerned individuals (stakeholders) to PP, through the grievance register. The site officials acknowledge and address the comments, suggestions, or grievances submitted by stakeholders, resolving issues as needed. Identified stakeholders were local community members i.e., local villagers, local government officials (village council members), local NGO workers and media personnel. Stakeholders were invited through invitation letter – local community members were invited through invitation letter while local government, local NGO workers and media personnel were invited mostly by telephonic communications. Languages used in invitation to stakeholders included both English and local language.

Consultation records	The meeting was outlined towards making aware local stakeholders including local community, local administration representatives, NGOs working for environmental cause etc., about the project activity that involves electricity generation using solar energy through solar PV technology litter with the primary objective of reducing emissions of GHGs in compared to pre-project or baseline scenario. 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 ere explained by PP representatives.
Stakeholder input	There has been no grievance received for the current monitoring period.

2.1.3 Free, Prior, and Informed Consent

Consent	Following clause 3.18.8 of VCS standard v.4.7⁶, the project proponent has disclosed, at a minimum, the following information: 1. The nature, size, pace, reversibility, and scope of the solar project activity; 2. The reason/purpose of the project, which is to implement the project activity that utilizes the renewable source of solar energy to produce electricity; 3. The locations that will be affected, primarily the building premises where the solar projects are implemented. 4. Moreover, information regarding personnel likely to be involved in the execution of the project activity, (including Indigenous Peoples, private sector staff, research institutions, government employees, and others), was shared with stakeholders, and the project was implemented after their collective consent.
Outcome of FPIC	Adhering to the FPIC rights of the stakeholders, they were informed in advance regarding the implementation, the overall impacts and other relevant details of the project activity, through the stakeholders' consultation. And only after receiving the collective consent of the stakeholders, the project activity was implemented. The project has not encroached on land, relocated people without consent, and forced physical or economic displacement.

⁶ <https://verra.org/wp-content/uploads/2024/04/VCS-Standard-v4.7-FINAL-4.15.24.pdf>

2.1.4 Grievance Redress Procedure

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

2.1.5 Public Comments

Summary of comments received	Actions taken
No any comment received in this current monitoring period.	Not Applicable

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

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

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

2.2.2 Risk assessment

	Risk identified	Mitigation or preventative measure(s) taken
Natural and human-induced risks to stakeholders' wellbeing	No Natural and human-induced risks to stakeholders' wellbeing	PP has taken all Preventive measures to ensure No Natural and human-induced risks to stakeholders' wellbeing.

Risks to stakeholder participation	No risk to stakeholder participation is anticipated because that the project or initiative in question is expected to proceed smoothly without significant barriers or obstacles that could hinder stakeholders from being involved or engaged.	No mitigation or preventive measure is required as no risk has been identified.
Working conditions	No risk identified	PP has taken all measures to ensure proper working condition by implementing EHS policy. Project is solar activity, which is not involving any aspect which can make difficult to work.
Safety of women and girls	No risk identified	PP ensures safety of women and girls in the project site and abide by the relevant national laws of “The Protection of Women from Domestic Violence Act, 2005” ⁷ . Project is solar activity, which is not involving any aspect which can create unsafe condition of women and girls. Employees shall comply with all guidelines framed from time to time including the Prevention of Sexual Harassment (POSH) guidelines of the Company.
Safety of minority and marginalized groups, including children	No risk identified	PP ensures safety of minority and marginalized communities, including children at the project site as per the national laws of “The Child Labour (Prohibition and Regulation) Act, 1986” ⁸ .
Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers)	No risk identified	There is negligible pollution in air, noise, water due to implementation and operation of the project activity. Solar create a waste hazardous and non-hazardous or same will be applicable as per “Hazardous and other Wastes (Management & Transboundary Movement) Rules,

⁷ <https://wcd.delhi.gov.in/scert/protection-women-domestic-violence-act-2005>

⁸ https://labour.gov.in/sites/default/files/act_2.pdf

2016 and amended in November, 2021”.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

	Risks identified ⁹	Mitigation or preventative measure(s) taken
Discrimination	No risk identified	PP has issued a statement affirming the absence and prevention of discrimination within its operations. PP is committed to establishing a workplace environment devoid of discrimination in accordance with local regulations.
Sexual harassment	No risk identified	PP is committed to establishing a workplace environment devoid of Sexual harassment in accordance with local regulations. PP shall oblige to create a workplace free of sexual harassment as per national law of “The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013” ¹⁰ .
Gender equity in labor and work	No risk identified	PP has provided a declaration stating its commitment to non-discrimination based on gender in job opportunities and wage distribution among workers.
Forced labor	No risk identified	PP has provided declaration that project activity does not use forced labor.
Child labor	No risk identified	PP has provided declaration that project activity does not use child labor.
Human trafficking	No risk identified	PP has provided declaration that project activity does not use victims of human trafficking.

⁹ 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.

¹⁰ <https://www.iitk.ac.in/wc/data/Sexual-Harassment-at-Workplace-Act.pdf>

2.3.2 Human Rights

Risks identified	Mitigation or preventative measure(s) taken
No Risk Identified	The following preventative measure by the PP has been taken for how the project is committed to safeguard the rights of IPs, LCs, and customary right holders, while following the international human rights law¹¹, the UNDRIP¹² and ILO Convention 169- Free, Prior, and Informed Consent (FPIC): The project activity has obtained the FPIC from the local stakeholders including the IPs, LCs and customary right holders, ensuring their unforced consent before the project operation, respecting their right to make decisions. Non-discriminatory Participation in the Project Activity- The project distributed devices without cultural or social biases, safeguarding the rights of IPs, LCs, and customary rights holders to be free from discrimination. Employment due to the Project Activity- The project activity also leads to the employment from the IPs, LCs and customary right holders, enabling them to exercise their right to fair treatment in employment and salary.

2.3.3 Indigenous Peoples and Cultural Heritage

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

2.3.4 Property Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	The land / property for the project activity belongs to the project proponent and, it can be supported through the relevant documents. Additionally, the project activity has obtained

¹¹ <https://www.ohchr.org/sites/default/files/Documents/Publications/fs9Rev.2.pdf>

¹² https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

the free, prior and informed consent of the stakeholders (including the IPs, LCs, and customary rights holders). This ensures that their lands and property rights are protected and respected.

2.3.5 Benefit Sharing

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

2.4 Ecosystem Health

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

2.4.1 Rare, Threatened, and Endangered species

Species or habitat	Not applicable
Areas needed for habitat connectivity	The project has not adversely impacted areas needed for habitat connectivity during the monitoring period.

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

Areas for habitat connectivity	No risk identified	The project has not adversely impacted areas needed for habitat connectivity during the monitoring period.
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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

Risks identified	Mitigation or preventative measure(s) taken
Invasive species	N/A

2.4.3 Ecosystem conversion

Risks identified	Mitigation or preventative measure(s) taken
Ecosystem conversion	N/A

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project activity involves the installation of Solar PV project. The total installed capacity of the project is 200 MW of Solar PV plant located at Gujarat and Rajasthan states of India.

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

The project shall result in replacing anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 437,825 tCO₂e per year, thereon displacing 467,362 MWh/year amount of electricity from the grid over the 10 years crediting period. The project activity aims to

harness solar energy through installation of Solar PV project with total installed capacity of 200 MW. The technical specification of 200 MW solar project by Adani Renewable Energy (RJ) Limited.

Sl. No.	Technical details of the equipment	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Module Make, Number of modules and their capacity	Module Make ¹³ - MSPVL, Jinergy, Chint & Longi No. of Modules- 854,048 Model capacity- 330 Wp, 335 Wp, 325 Wp and 375 Wp
3	Inverter Make, Number of Inverters & Capacity	Inverter Make- Huawei Technologies No. of Inverters- 2,225 Inverter capacity- 90 KW

Starting date of the operation of the project activity is 02-August-2019, which is the date of commissioning/commercial operation of the “Renewable Solar Power Project by Adani”, and since then it is in continuous operation. There has been no major downtime of equipment, overhaul times, or exchange of equipment in the project activity during the current monitoring period.

3.2 Deviations

3.2.1 Methodology Deviations

No methodology deviations have been applied during this monitoring period.

3.2.2 Project Description Deviations

Deviation 1: Deviation has been requested as the connectivity details given in the Commissioning Certificate issued by the state utility, Maharashtra State Electricity Distribution Company Limited (MSEDCL): -

Metering Equipment installed at Sending end at the 33 kV Grid Substation

125 MW Main Meter: RE-0001-A

125 MW Check Meter: RE-0002-A

125 MW Standby Meter: RE-0003-A

75 MW Main Meter: RE-0004-A

¹³ As per the Commissioning Certificate issued by the state utility.

75 MW Check Meter: RE-0005-A

75 MW Standby Meter: RE-0006-A

The above Metering Equipment installed at Sending end at the 33 kV Grid Substation are used for data collection and scheduling readings. Also, in reference to the Power Purchase Agreement signed by PP with the State Utility, for the purpose of energy accounting the power producer shall install ABT compliant meter at the metering point which have been mentioned above.

It is to be noted that initially, at the time of validation of project activity, the following meters were taken as part of the Monitoring plan. These are installed at the interconnecting point which is Bhadla Substation owned by the Power Grid Corporation of India Limited (PGCIL).

S. No. of Main Meter: 4517-A

S. No. of Check Meter: 4512-A

S. No. of Standby Meter: 3649-A

Now the reason for seeking this deviation for change in meters in monitoring plan being the aforesaid meters at the PGCIL substation are beyond the control of Project Proponent because they are owned and operated by PGCIL and PP does not have any role in their calibration and operation. Also, it does not play any role in the current billing and monitoring process detailed below: -

The current Billing procedure is as below: -

- In case of Inter-State grid connected RE projects, billing/invoicing is done based on REA basis which is issued by Regional Power Committee. In this process, there is no joint metering done by govt. officials and project representative, entire process is automated. As this project is located in Rajasthan and delivering electricity to Maharashtra (PPA signed with MSEDCL), thus, this project is also categorized as Inter-State project.
- In the grid inter-connection point i.e. at grid sub-station, ABT meters mentioned below are located and capturing the actual export and import of electricity from the project.

125 MW Main Meter: RE-0001-A

125 MW Check Meter: RE-0002-A

125 MW Standby Meter: RE-0003-A

75 MW Main Meter: RE-0004-A

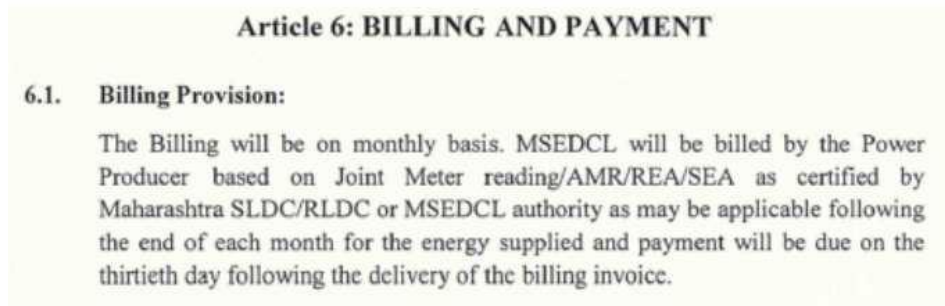
75 MW Check Meter: RE-0005-A

75 MW Standby Meter: RE-0006-A

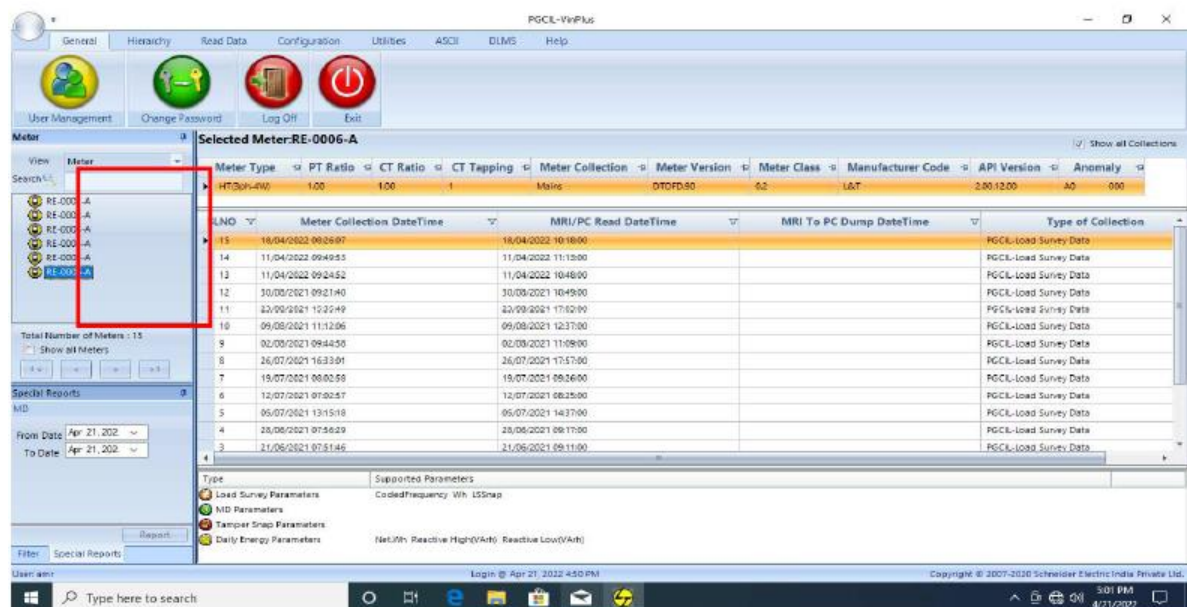
- After specific interval (presently, once in a week, however, can also be changed as per DISCOM's decision), project representative electronically download the generation report from the ABT meter and upload the same on Northern Regional Load Dispatch Centre's dedicated web-interface.
- Based on the encrypted generation report, Northern Regional Power Committee issue the REA which mentioned actual net electricity injected by the project for that specific

month. Post issuance of REA, project proponent is issuing the monthly invoice for billing purpose.

- Below is snapshot of PPA signed by the PP with the utility: -



In addition to that reference may please be made to the snapshot below of the SCADA page shows the 6 no. of meters which are the source of data for all Energy Accounting of the project activity. These have been installed at project end and the PP has access to them for collection of data and calibration as well.



Deviation 2: The Make and Capacity of the Modules installed at site have been updated as per the Commissioning Certificate issued by the State Utility:

Module Make- MSPVL, Jinergy, Chint

Capacity- 325 Wp, 330 Wp, 335 Wp

Deviation 3: Deviation requested as per the current site practice; the Monthly REA statements are issued by Northern Regional Power Committee instead of Western Regional Power Committee.

Deviation 4: Deviation requested as per current site practice that there are no auxiliary meters and only the meters mentioned in Deviation #1 above located at the plant site.

Deviation 5: Deviation requested for change in cross check mechanism given in the registered PDD. As per current site practice, the power sale invoices are used for cross checking the Quantity of net electricity generation supplied by the project plant/unit to the grid instead with the Monthly Generation Report. The monthly sales invoices being more reliable source for cross check as the same is raised by PP to the utility every month.

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

The deviation applied in the current monitoring period (01-December-2021 to 31-October-2024):

1. The make and capacity of the modules installed have been updated in accordance with the latest data received from the site:

Module Make- Longi

Capacity- 375 Wp

2. In the registered VCS PDMR, the geo-coordinates of the project activity were not shown at the correct location due to a typographical error. Therefore, the Project Proponent is seeking a deviation and has provided the corrected coordinates.

Name of the SPVs	Latitude	Longitude
Adani Renewable Energy (RJ) Limited	27° 24'33.1"N	72° 12'04.3"E

3.3 Grouped Projects

The project is an individual project and not a grouped project.

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 14, Dec 2018 ¹⁴
Value applied	0.9610
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 07” as 3-year generation weighted average using data for the years 2015-16, 2016-17 & 2017-18. The data are obtained from “CO ₂ Baseline Database for Indian Power Sector” version 14, 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	$E_{grid,BM,y}$
Data unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018 ¹⁵
Value applied	0.8644
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 07” as per the latest data available for the most recent year 2017-18. The data is obtained from “CO ₂ Baseline Database for Indian Power Sector” version 14, 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	$E_{grid,CM,y}$
Data unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018 ¹⁶
Value applied	0.9368
Justification of choice of data or description of	The combined margin emissions factor is calculated as follows: $E_{grid,CM,y} = E_{grid,OM,y} * W_{OM} + E_{grid,BM,y} * W_{BM}$ Where:

¹⁴ <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>
¹⁵ <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>
¹⁶ <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>

measurement methods and procedures applied	$EF_{grid,BM,y}$ = Build margin CO ₂ emission factor in year y (tCO ₂ /MWh) $EF_{grid,OM,y}$ = Operating margin CO ₂ emission factor in year y (tCO ₂ /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	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 in MWh
Source of data	Regional Energy Account statement issued by Northern Regional Power Committee (NRPC)
Description of measurement methods and procedures to be applied	Data Type: Measured Monitoring equipment: Energy Meters are used for monitoring. Recording Frequency: Continuous monitoring and Monthly recording from Energy Meters, Summarized Annually Archiving Policy: Paper & Electronic Class of meter: 0.2s Calibration frequency: One in five years¹⁷ Electricity exported by the project to the grid at project site switch yard is the actual generation recorded and monitored by the metering system installed at the project site switch yard. The energy meters are special energy meters which are installed and sealed by the Power Grid Corporation of India Limited in the presence of the representatives of the power producer. The check meter shall be used during the period the main metering system is not in service. Further in case of failure of both main meter and check meter, sum of the net electricity generation recorded by three individual special energy meters (SEMs) and individual auxiliary meters shall be used for accounting and billing purpose.
Frequency of monitoring/recording	Continuous measurement & monthly recording
Value monitored	1,401,445.36

¹⁷https://cea.nic.in/old/reports/regulation/CEA_metering_regulation_amendment_2019.pdf

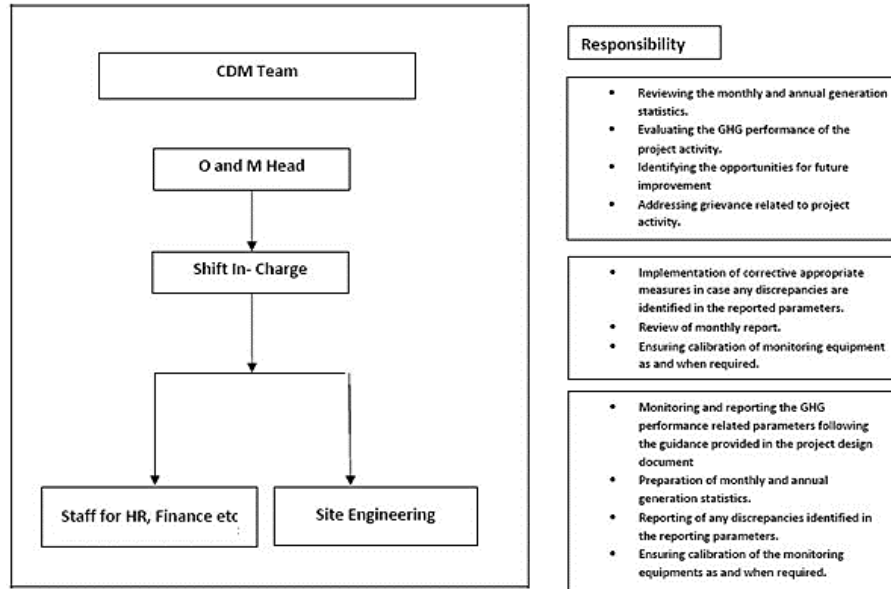
Monitoring equipment	The electricity exported/ supplied by the plant to pooling substation and further to substation. This meter also measures electricity imported by the plant from the grid.
QA/QC procedures to be applied	Energy meters will be calibrated once in a five year and faulty meters will be duly replaced immediately. This data may be cross checked with the Monthly Power Sale Invoices
Purpose of the data	For calculation of Baseline emissions
Calculation method	Not applicable ¹⁸
Comments	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of VCU's for this project activity, whichever occurs later.

4.3 Monitoring Plan

The monitoring plan is developed in accordance with the modalities and procedures for VCS project activities and is proposed for grid-connected solar power project being implemented. The monitoring plan, which will be implemented by the project participant 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 participant. 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:

¹⁸ A Monthly Regional Energy Accounting statement (REA) is issued by the Northern Regional Power Committee (NRPC) provides the details of inter-regional bilateral exchange of electricity. It is based on the scheduled electricity given by the Northern Load Dispatch Centre for the month and processed schedule/meter data. The same value of electricity given in the REA statement is taken by the PP as Sale of power generated by the project activity for the month.



Data Measurement

The electricity supplied or transmitted is sourced from the “Regional Energy Account” and the same can be cross checked from the Invoices raised by the PP. The “Regional Energy Account” is a publicly available document which is issued by the Northern Regional Power Committee. The “Regional Energy Account” statement are available on monthly basis and based upon this, the invoices are raised by the PP.

The current Billing procedure is as below: -

- In case of Inter-State grid connected RE projects, billing/invoicing is done based on REA basis which is issued by Regional Power Committee. In this process, there is no joint metering done by govt. officials and project representative, entire process is automated. As this project is located in Rajasthan and delivering electricity to Maharashtra (PPA signed with MSEDCL), thus, this project is also categorized as Inter-State project.
- In the grid inter-connection point i.e. at grid sub-station, ABT meters mentioned below are located and capturing the actual export and import of electricity from the project.

125 MW Main Meter: RE-0001-A, 125 MW Check Meter: RE-0002-A, 125 MW Standby Meter: RE-0003-A

75 MW Main Meter: RE-0004-A, 75 MW Check Meter: RE-0005-A, 75 MW Standby Meter: RE-0006-A

- After specific interval (presently, once in a week, however, can also be changed as per DISCOM’s decision), project representative electronically download the generation report from the ABT meter and upload the same on Northern Regional Load Dispatch Centre’s dedicated web-interface.
- Based on the encrypted generation report, Northern Regional Power Committee issue the REA which mentioned actual net electricity injected by the project for that specific month. Post issuance of REA, project proponent is issuing the monthly invoice for billing purpose.

Data collection and archiving

The records are checked periodically by the Plant Manager and discussed thoroughly with the plant supervisor. The period of storage of the monitored data will be 2 years after the end of crediting period or till the last issuance of VERs for the project activity whichever occurs later.

Emergency preparedness

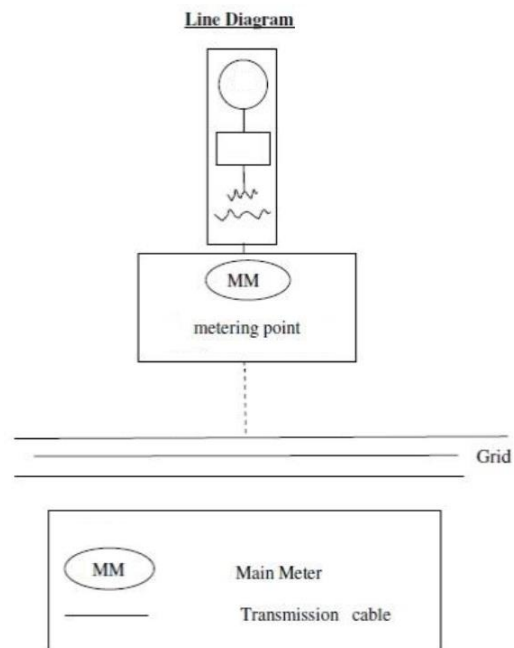
The project activity will not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized. In the event that the main meter, which is used to record the net electricity exported by the project, 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.

Personnel training

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff 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.

Metering Arrangement

Line diagram with metering arrangement for the solar project activity is shown below: -



As per the connectivity details given in the Commissioning Certificate issued by the state utility, Maharashtra State Electricity Distribution Company Limited (MSEDCL): -

Metering Equipment installed at Sending end at the 33 kV Grid Substation)

125 MW Main Meter: RE-0001-A, 125 MW Check Meter: RE-0002-A, 125 MW Standby Meter: RE-0003-A

75 MW Main Meter: RE-0004-A, 75 MW Check Meter: RE-0005-A, 75 MW Standby Meter: RE-0006-A

The above Metering Equipment installed at Sending end at the 33 kV Grid Substation are used for data collection and scheduling. Also, in reference to the Power Purchase Agreement signed by PP with the State Utility, for the purpose of energy accounting the power producer shall install ABT compliant meter at the metering point which have been mentioned above. The monthly reading of energy exported from the project activity are provided to the State Utility/Load Dispatch Centers for scheduling and Billing purposes.

Cross Check Mechanism

A Monthly Regional Energy Accounting statement (REA) is issued by the Northern Regional Power Committee (NRPC) provides the details of inter-regional bilateral exchange of electricity. It is based on the scheduled electricity given by the Northern Load Despatch Center for the month and processed schedule/meter data.

The same value of electricity given in the REA statement is taken by the PP as Sale of power generated by the project activity for the month.

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 crosschecked with the records of sold electricity to state electricity board. The meters are calibrated by state electricity board at-least once in five years.

Apportioning

In case the dates of a particular monitoring period do not match with the dates of the billing cycle, the net electricity exported to the grid would be calculated from:

Apportioning the net electricity exported to grid, as recorded in the consolidated Share Certificate / JMR Report / Credit Notes certified by the respective state discom, based on the number of days in the monitoring period and the number of days for which Share Certificate / JMR Report / Credit Notes was prepared.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor:

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

Where:

BE_y : Baseline Emissions in year y; t CO₂

$EG_{PJ,y}$: Quantity of net electricity supplied to the grid as a result of the implementation of the VCS project activity in year y (MWh)

$EF_{grid,CM,y}$: CO₂ emission factor of the grid in year y (t CO₂/MWh)

Hence, the Baseline Emission Factor is calculated as below:

$$\begin{aligned} BE_y &= 1,401,445.36 \text{ MWh} \times 0.9368 \text{ tCO}_2\text{e} \\ &= 1,312,873 \text{ tCO}_2\text{e} \end{aligned}$$

$$ER_y = BE_y - PE_y$$

$$\text{Hence, } ER_y = 1,312,873 - 0$$

$$= 1,312,873 \text{ tCO}_2\text{e (Round down value)}$$

5.2 Project Emissions

As per the approved consolidated Methodology ACM0002 (Version 19.0) para 34: “For most renewable energy power generation project activities, $PE_y = 0$. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

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

Where:

PE_y = Project emissions in year y (t CO₂e/yr)

$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y (t CO₂/yr)

$PE_{GP,y}$ = Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y (t CO₂e/yr)

$PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year y (t CO₂e/yr)

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

5.3 Leakage Emissions

As there is no transfer of energy generating equipment from outside the project boundary, hence no leakage emissions are to be considered.

5.4 GHG Emission Reductions and Carbon Dioxide Removals

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Reduction VCUs (tCO ₂ e)	Removal VCUs (tCO ₂ e)	Total VCUs (tCO ₂ e)
01-December-2021 to 31-December-2021	35,638	0	0	35,638	0	35,638
01-January-2022 to 31-December-2022	450,638	0	0	450,638	0	450,638
01-January-2023 to 31-December-2023	454,737	0	0	454,737	0	454,737
01-January-2024 to 31-October-2024	371,860	0	0	371,860	0	371,860
Total	1,312,873	0	0	1,312,873	0	1,312,873

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01-December-2021 to 31-December-2021	37,185	35,638	-4.16%	The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant. The lower generation during the current verification period is

				due to certain natural conditions.
01-January-2022 to 31-December-2022	437,825	450,638	2.93%	The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant.
01-January-2023 to 31-December-2023	437,825	454,737	3.86%	The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant.
01-January-2024 to 31-October-2024	365,854	371,860	1.64%	The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant.
Total	1,278,689	1,312,873	2.67%	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.

Considering the annual average emission reductions as per the registered PDD which is 437,825 tCO₂e per year, the number of days covered during the current monitoring period comes out to be 1,066 days, based upon which the estimated emission reductions attributed to this monitoring period comes out to be 1,278,689 tCO₂e values whereas the actual emission reductions achieved during the current monitoring period is 1,312,873. The actual VER is 2.67% higher than the estimated VER. The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant.

APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

No commercially sensitive information has been provided in the MR.

Section	Information	Justification

APPENDIX 2: CALIBRATION DETAILS

The Calibration details of above meters is as below: -

Meter	Sl. No	Meter make	Accuracy Class	Calibration date	Calibration due date	Delay in Calibration
Main meter	RE-0001-A	L&T	0.2s	03-June-2019	02-June-2024	No delay
				01-July-2024	30-June-2029	28 days
Check meter	RE-0002-A	L&T	0.2s	03-June-2019	02-June-2024	No delay
				01-July-2024	30-June-2029	28 days
Standby meter	RE-0003-A	L&T	0.2s	03-June-2019	02-June-2024	No delay
				01-July-2024	30-June-2029	28 days
Main meter	RE-0004-A	L&T	0.2s	03-June-2019	02-June-2024	No delay
				02-July-2024	01-July-2029	29 days
Check meter	RE-0005-A	L&T	0.2s	03-June-2019	02-June-2024	No delay
				02-July-2024	01-July-2029	29 days
Standby meter	RE-0006-A	L&T	0.2s	03-June-2019	02-June-2024	No delay
				02-July-2024	01-July-2029	29 days