



RENEWABLE SOLAR POWER PROJECT BY ADANI GREEN ENERGY LIMITED



Document Prepared by EKI Energy Services Limited

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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 sources. The project activity involves total capacity of 990 MW solar power project which are installed in Chhattisgarh, Karnataka, Maharashtra, Rajasthan and Uttar Pradesh states of India. The solar projects have been developed by the SPVs of Adani Green Energy Limited.

Over the 10 years of first crediting period, the project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 1,553,021 tCO_{2e} per year, there on displacing 1,639,080 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 and their location of installation are mentioned in Section 3.1 of this MR, the table below shows the first and last date of commissioning of the installations involved in the project activity: -

Name of the SPVs	Capacity (MW)	COD	Connection with the Grid	State	Usage
Adani Green Energy (UP) Limited	240 MW	20 MW on 28-September-2017	Indian Grid	Karnataka	Sale to State Discom
Adani Green Energy (UP) Limited	50 MW	10-May-2019	Indian Grid	Uttar Pradesh	Sale to State Discom

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 5,821,887 tCO_{2e}.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	28-September-2017 to 27-September-2027	VCS	LGAI Technological Center S.A.	10 years
Verification	28-September-2017 to 30-September-2018	VCS	LGAI Technological Center S.A.	1 year, 3 days
Verification	01-October-2018 to 31-December-2019	VCS	Earthood	1 year, 3 months
Verification	01-January-2020 to 31-December-2020	VCS	LGAI Technological Center S.A.	1 year
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 – 7 years 1 month 3 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 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>

1.4 Project Proponent

Organization name	Adani Green Energy Limited
Contact person	Mr. Alpesh Gedia
Title	Associate Manager- Business Development
Address	5B- Sambhav Press Building, Judges Bungalow Road, Bodakdev, Ahmedabad
Telephone	+91 9907534900
Email	alpeshk.gedia@adani.com

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	28-September-2017
Justification	Start date of the project activity is the earliest date of interconnection with the grid i.e., 28-September-2017. This is the date of commissioning of 20 MW solar project activity by Adani Green Energy (UP) Limited.

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	28-September-2017 to 27-September-2027

1.8 Project Location

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

Name of SPVs	Capacity (MW)	Village(s)	Tehsil / Mandal	District	State
Parampujya Solar Energy Private Limited	100 MW	Rani & Bundeli	-	Dhamdha	Chhattisgarh
	20 MW	Kilaj	Tuljapur	Osmanabad	Maharashtra
	100 MW	Thirumani, Rayacherlu, Vallur, Balasamudra	Pavagada	Tumkur	Karnataka
	40 MW	Kallur, Balgera & Kudgunti	Yelburga	Koppal	
	50 MW	Thirumani, Rayacherlu, Vallur, Balasamudra	Pavagada	Tumkur	
Wardha Solar (Maharashtra) Private Limited	100 MW	Madhuvanahalli	Kollegal	Chamarajna gar	
	50 MW	Maskal	Aurad	Bidar	
	40 MW	Nalwar	Chittapura	Kalaburagi	
	50 MW	Rajeshwar & Handral	Basavakalyan a	Bidar	
	50 MW	Hattigudur & Bommanahalli	Shahapur	Yadgir	
	50 MW	Yatnal	Vijayapura	Vijayapura	

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.

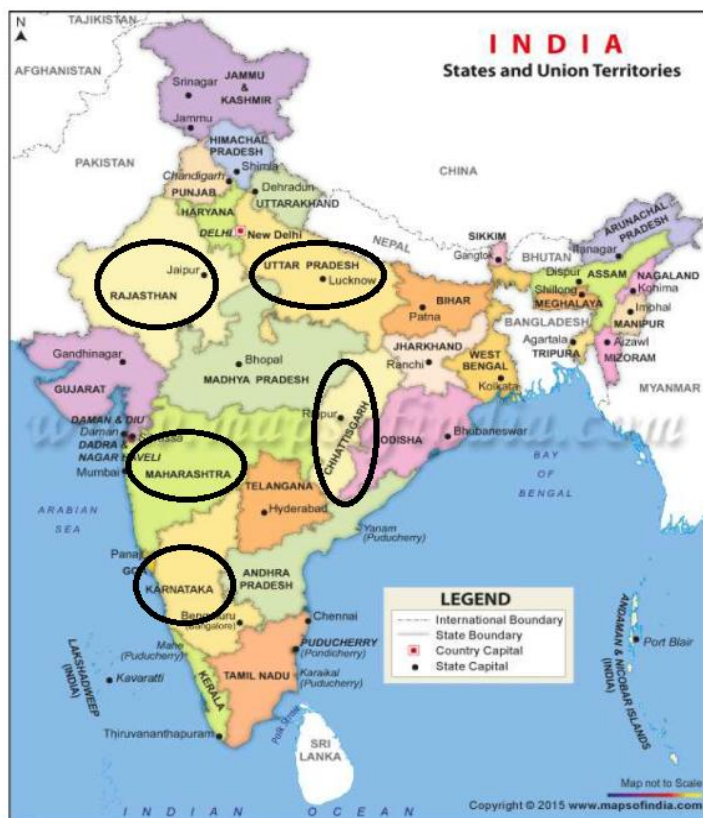
	10 MW	Kallur, Balgera & Kudgunti	Yelburga	Koppal	
Kodangal Solar Parks Private Limited	20 MW	Hebbal	B.Bagewadi	Vijayapur	
Prayatna Developers Private Limited	20 MW	Kanasar	Bap	Jodhpur	Rajasthan
Adani Green Energy (UP) Limited	20 MW	Kadaramandalagi	Byadagi	Haveri	Karnataka
	20 MW	Guddehosur	Chanapatana	Ramanagara	
	20 MW	Talekoppa	Gubbi	Tumkur	
	20 MW	Chikkahalli	Holenarasipura	Hassan	
	20 MW	-	Jewargi	Kalaburagi	
	20 MW	-	K. R. Pet	Mandya	
	20 MW	Thirthbandathi	Malur	Kolar	
	20 MW	Gejjaraguppe	Magadi	Ramanagara	
	20 MW	Kalkare	Periyapatna	Mysuru	
	20 MW	Chikkasulikere	Ramanagara	Ramanagara	
	20 MW	Akkur	T.Narasipura	Mysuru	
	20 MW	Vederahalli & Rettanahalli	Tiptur	Tumakuru	
Adani Green Energy (UP) Limited	50 MW	Badanpur	-	Jhansi	Uttar Pradesh

The Geo-coordinates of the project site are mentioned below:

Name of SPVs	Capacity (MW)	Latitude	Longitude
Parampujya Solar Energy Private Limited	100 MW	21° 31' 19.20" N 21° 31' 58.8" N	81° 12' 03.60" E 81° 14' 42.0" E
	20 MW	17° 56' 38.40" N	76° 16' 15.60" E
	100 MW	14° 15' 29.39" N 14° 14' 06.70" N	77° 29' 14.68" E 77° 27' 12.76" E
	40 MW	15° 34' 05.05" N	76° 02' 02.90" E
	50 MW	14° 14' 45.60" N	77° 27' 03.60" E
Wardha Solar (Maharashtra) Private Limited	100 MW	12° 07' 46" N	77° 12' 14" E
	50 MW	18° 11' 4.62" N	77° 24' 53.02" E
	40 MW	16° 55' 57.28" N	76° 59' 34.58" E

	50 MW	17° 47' 30.96" N	77° 1' 5.07" E
	50 MW	18° 11' 4.62" N	77° 18' 53.02" E
	50 MW	18° 10' 4.62" N	77° 24' 53.02" E
	10 MW	18° 20' 4.62" N	77° 16' 53.02" E
Kodangal Solar Parks Private Limited	20 MW	16° 27' 25.20" N	75° 56' 52.80" E
Prayatna Developers Private Limited	20 MW	27° 26' 39.31" N	71° 58' 1.75" E
Adani Green Energy (UP) Limited	20 MW	12° 13' 51.70" N	77° 03' 38.50" E
	20 MW	14° 41' 48.21" N	75° 29' 18.78" E
	20 MW	12° 49' 54.48" N	76° 12' 50.63" E
	20 MW	13° 16' 57.95" N	76° 25' 17.47" E
	20 MW	12° 50' 16.89" N	77° 58' 58.70" E
	20 MW	12° 37' 12.03" N	77° 07' 40.37" E
	20 MW	12° 40' 48.0" N	76° 35' 42.0" E
	20 MW	12° 25' 48.0" N	76° 11' 02.40" E
	20 MW	16° 49' 01.20" N	76° 33' 00.00" E
	20 MW	13° 00' 54.00" N	77° 13' 30.0" E
	20 MW	12° 48' 18.0" N	77° 09' 25.20" E
	20 MW	13° 24' 43.20" N	76° 45' 36.0" E
Adani Green Energy (UP) Limited	50 MW	25° 22' 02.31" N	78° 18' 30.01" E

The project locations have been in Chhattisgarh, Maharashtra, Karnataka, Rajasthan and Uttar Pradesh states of India. The map of India is shown as 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

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>

1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

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

☐ Yes ☒ No

1.10.2 Registration in Other GHG Programs

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

☐ Yes ☒ No

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

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

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

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

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

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

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

☐ Yes ☒ No

1.12 Sustainable Development Contributions

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

Social well-being:

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

Economic well-being:

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

Environmental well-being:

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

Technical well-being:

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

The main purpose of this project activity is to generate clean form of electricity through renewable solar energy sources. The project activity involves total capacity of 990 MW solar power project which are installed in Chhattisgarh, Karnataka, Maharashtra, Rajasthan and Uttar Pradesh states of India. The solar projects have been developed by the SPVs of Adani Green Energy Limited.

The Project activity is a new facility (Greenfield) and the electricity generated by the project is exported to the Indian electricity grid. The project therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid.

The Project Proponent plans to avail the VCS benefits for the project. In the Pre- project scenario the entire electricity, delivered to the grid by the project activity, would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

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

1. **SDG 7 Affordable and Clean Energy:** According to SDG target 7, indicator 7.2.1, the project activity generates electricity from solar energy that ensures supply of electricity sources from clean energy sources at affordable rate. In the current monitoring period, this project activity has supplied 6,144,473.60 MWh clean electricity.
2. **SDG 13 Climate Action:** According to SDG target 13.0, indicator 13.2.2, it states “Total greenhouse gas emissions per year”. PP is committed to work for mitigation of climate change by generating electricity using clean energy sources. In the current monitoring period, project has achieved GHG emission reductions of 5,821,887 tCO_{2e}.
3. **SDG 8 Decent work and Economic Growth:** According to SDG target 8.0, indicator 8.6.1, Proportion of youth (aged 15-24 years) not in education, employment or training. In this monitoring period, this project activity has achieved 20 trainings.

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 6,144,473.60 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, 13,673,070.88 MWh (1,060,786.39 + 2,526,964.28 + 2,052,382.33 + 1,888,464.28 + 6,144,473.60) 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 6,144,473.60 MWh clean electricity (generated through this solar project) to Indian grid, the project avoided release of 5,821,887 tCO ₂ e in to the atmosphere during the reporting period.	Overall prevented the release of 12,954,391 (1,004,735 + 2,394,094 + 1,944,499 + 1,789,206 + 5,821,887) tCO ₂ e into the atmosphere since project commissioning till end of current monitoring.

3)	8.6	8.6.1: Proportion of youth (aged 15-24 years) not in education, employment or training	Implemented decrease	activities to	The number of trainings provided are 20 numbers during the reporting period.	A total 20 number of trainings has been conducted since project commissioning till the end of the current monitoring period.
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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	The stakeholder is located in nearby villages of the project area. The details are provided in the table below-			
	Name of the SPVs	Village	District	State
	Parampujya Solar Energy Private Limited	Rani & Bundeli	Dhamdha	Chhattisgarh
		Kilaj	Osmanabad	Maharashtra
		Thirumani, Rayacherlu, Vallur, Balasamudra	Tumkur	Karnataka
		Kallur, Balgera & Kudgunti	Koppal	Karnataka
	Wardha Solar (Maharashtra) Private Limited	Maskal, Nalwar, Rajeshwar, Rastapur, Yatnal, Madhuvanahalli, Kallur	Bidar, Kalaburagi, Bidar, Yadgir, Vijayapura, Chamarajnagar, Koppal	Karnataka
	Kodangal Solar Parks Private Limited	Hebbal	Vijayapur	Karnataka
	Prayatna Developers Private Limited	Kanasar	Jodhpur	Rajasthan
	Adani Green Energy (UP) Limited	Kadaramandalagi, Guddehosur, Talekoppa, Chikkahalli, Kalkare, Akkur	Haveri, Ramanagara, Tumkur, Hassan, Mysuru	Karnataka
Badanpur		Jhansi	Uttar Pradesh	
Location of resources	Not Applicable. There is no location of territories or resources that the stakeholders own or to which they have customary access.			

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	15-March-2015
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.

2.1.4 Grievance Redress Procedure

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

There has been no grievance received for the current monitoring period	Not Applicable
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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	No mitigation or preventative measure is required as no risk has been identified

	proceed smoothly without significant barriers or obstacles that could hinder stakeholders from being involved or engaged.	
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.

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>

Child labor	No risk identified	PP has provided declaration that project activity does not use child labor.
Human trafficking	No risk identified	PP has provided declaration that project activity does not use victims of human trafficking.

2.3.2 Human Rights

Risks identified	Mitigation or preventative measure(s) taken
No Risk Identified	The following preventative measure by the PP has been taken for how the project is committed to safeguard the rights of IPs, LCs, and customary right holders, while following the international human rights 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
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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

No Risk identified	The project activity does not impact the tangible or intangible cultural heritage or the indigenous people nearby.
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2.3.4 Property Rights

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

2.3.5 Benefit Sharing

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

2.4 Ecosystem Health

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

2.4.1 Rare, Threatened, and Endangered species

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

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

2.4.2 Introduction of species

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	N/A

2.4.3 Ecosystem conversion

	Risks identified	Mitigation or preventative measure(s) taken
Ecosystem conversion	N/A	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 990 MW of Solar PV plant located at Chhattisgarh, Karnataka, Maharashtra, Rajasthan and Uttar Pradesh states in India. The project is promoted by Adani Green Energy Limited.

The Project activity is a new facility (Greenfield) and the electricity generated by the project is exported to the Indian electricity grid. The project is therefore displacing 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 results in replacing anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 1,553,021 tCO_{2e} per year, thereon displacing 1,639,080 MWh/year amount of electricity from the grid over the 10 years crediting period.

The project activity harnesses solar energy through installation of Solar PV project with total installed capacity of 990 MW solar power project.

The technical specification for 100 MW solar project by Parampujya Solar Energy Private Limited at Chhattisgarh.

Sl. No.	Technical details of the equipment ¹³	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Modules capacity and Model	Model capacity- 320 Wp Model- JKM 320PP-72
3	Number of Inverters, Inverter Make & Model	1163 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	22

The technical specification for 20 MW solar project by Parampujya Solar Energy Private Limited at Karnataka.

Sl. No.	Technical details of the equipment ¹⁴	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)

¹³ It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 100 MW.

¹⁴ It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 20 MW.

2	Module's capacity and Model	Model capacity- 320 Wp Model- Lion Series
3	Number of Inverters, Inverter Make & Model	465 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	22

The technical specification for 100 MW solar project by Parampujya Solar Energy Private Limited at Karnataka.

Sl. No.	Technical details of the equipment ¹⁵	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Modules capacity and Model	Model capacity- 320 Wp Model- JKM 320PP-72
3	Number of Inverters, Inverter Make & Model	1163 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	22

The technical specification for 40 MW solar project by Parampujya Solar Energy Private Limited at Karnataka.

Sl. No.	Technical details of the equipment ¹⁶	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Modules capacity and Model	Model capacity- 320 Wp Model- Lion Series
3	Number of Inverters, Inverter Make & Model	931 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	20

The technical specification for 50 MW solar project by Parampujya Solar Energy Private Limited at Karnataka.

Sl. No.	Technical details of the equipment ¹⁷	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Modules capacity and Model	Model capacity- 320 Wp Model- JKM 320PP-72

¹⁵ It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 100 MW.

¹⁶ It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 40 MW.

¹⁷ It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 50 MW.

3	Number of Inverters, Inverter Make & Model	1163 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	22

The technical specification for 350 MW solar project by Wardha Solar (Maharashtra) Private Limited at Karnataka.

Sl. No.	Technical details of the equipment ¹⁸	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Modules capacity and Model	Model capacity- 320 Wp Model- JKM 320PP-72
3	Number of Inverters, Inverter Make & Model	1163 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	22

The technical specification for 20 MW solar project by Prayatna Developers Private Limited at Rajasthan.

Sl. No.	Technical details of the equipment ¹⁹	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Modules capacity and Model	Model capacity- 320 Wp Model- JKM 320PP-72
3	Number of Inverters, Inverter Make & Model	466 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	20

The technical specification for 20 MW solar project by Kodangal Solar Parks Private Limited at Karnataka.

Sl. No.	Technical details of the equipment ²⁰	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Modules capacity and Manufacturer	Model capacity- 320 Wp Manufacturer- MSPVL/Suntech
3	Number of Inverters, Inverter Make & Model	465 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	22/20

¹⁸ It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 350 MW.

¹⁹ It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 20 MW.

²⁰ It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 20 MW.

The technical specification for 240 MW solar project by Adani Green Energy (UP) Limited at Karnataka.

Sl. No.	Technical details of the equipment ²¹	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Modules capacity and Manufacturer	Model capacity- 117.5 Wp Manufacturer- First Solar
3	Number of Inverters, Inverter Make & Model	466 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	11

The technical specification for 50 MW solar project by Adani Green Energy (UP) Limited at Jhansi, Uttar Pradesh.

Sl. No.	Technical details of the equipment ²²	Description
1	Technology Used	Solar PV technology (Poly-Crystalline)
2	Modules capacity and Model	Model capacity- 320 Wp Model- JKM 320PP-72
3	Number of Inverters, Inverter Make & Model	1163 Inverters Huawei/ SUN2000-43kTL-IN-C1
4	Modules per String	22

The details of the project commissioning dates are mentioned in the table below.

Name of SPVs	Capacity in MW	Date of Commission	Connection with Grid	State	Usage
Parampujya Solar Energy Private Limited	100 MW	40 MW on 16-December-2017	Indian Grid	Chhattisgarh	Sale to SECI Limited
		10 MW on 08-March-2018			
		40 MW on 14-December-2017			
		10 MW on 08-March-2018			
	20 MW	22-February-2018		Maharashtra	Sale to SECI Limited
	100 MW	50 MW on 06-December-2017		Karnataka, Pavagada	Sale to NTPC Limited
		50 MW on 15-December-2017			
	40 MW	20 MW on 08-March-2018			

²¹ It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 240 MW.

²² It is to be noted that in future there is possibility of change in module configuration, however project capacity in total will remain same as 50 MW.

		20 MW on 30-April-2018		Karnataka, Kallur	Sale to SECI Limited
	50 MW	03-January-2018		Karnataka, Pavagada	Sale to NTPC Limited
Wardha Solar (Maharashtra) Private Limited	350 MW	100 MW on 12-February-2018		Karnataka	Sale to SECI Limited
		50 MW on 27-February-2018			
		40 MW on 26-February-2018			
		50 MW on 29-January-2018			
		50 MW on 14-February-2018			
		50 MW on 17-December-2017			
		10 MW on 08-March-2018			
Kodangal Solar Parks Private Limited	20 MW	05-January-2018		Karnataka	Sale to State Discom
Prayatna Developers Private Limited	20 MW	10 MW on 29-September-2017		Rajasthan, Bhadla Solar Park	Sale to NTPC Limited
		10 MW on 11-October-2017			
Adani Green Energy (UP) Limited	240 MW	20 MW on 30-January-2018		Karnataka	Sale to State Discom
		20 MW on 02-March-2018			
		20 MW on 09-March-2018			
		20 MW on 13-October-2017			
		20 MW on 18-November-2017			
		20 MW on 22-December-2017			
		20 MW on 18-October-2017			
		20 MW on 08-January-2018			
		20 MW on 28-September-2017			
		20 MW on 28-March-2018			
		20 MW on 02-October-2017			
		20 MW on 27-January-2018			
Adani Green Energy (UP) Limited	50 MW	10-May-2019		Uttar Pradesh	Sale to State Discom

3.2 Deviations

3.2.1 Methodology Deviations

No methodology deviations have been applied during this monitoring period.

3.2.2 Project Description Deviations

No project description deviation is applicable during this monitoring period and there is no previous project description deviation for this project activity.

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 13, June 2018 ²³
Value applied	0.9726
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 2014-15, 2015-16 & 2016-17. The data are obtained from “CO ₂ Baseline Database for Indian Power Sector” version 13, 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 13, June 2018 ²⁴
Value applied	0.8723

²³ https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver13.pdf

²⁴ https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver13.pdf

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 2016-17. The data is obtained from “CO ₂ Baseline Database for Indian Power Sector” version 13, 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	$E_{f_{grid,CM,y}}$
Data unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 13, June 2018 ²⁵
Value applied	0.9475
Justification of choice of data or description of measurement methods and procedures applied	The combined margin emissions factor is calculated as follows: $E_{f_{grid,CM,y}} = E_{f_{grid,OM,y}} * W_{OM} + E_{f_{grid,BM,y}} * W_{BM}$ Where: $E_{f_{grid,BM,y}}$ = Build margin CO₂ emission factor in year y (tCO₂/MWh) $E_{f_{grid,OM,y}}$ = 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	This parameter is fixed ex-ante for the entire crediting period.

4.2 Data and Parameters Monitored

For Karnataka Site

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	Monthly joint meter reading reports
Description of measurement methods	The difference of final value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value will be considered for ER calculations.

²⁵ https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver13.pdf

and procedures to be applied	
Frequency of monitoring/recording	Continuous measurement & monthly recording
Value monitored	4,981,972.31
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. The meter calibration details are provided in Appendix 2 of this document.
QA/QC procedures to be applied	The meters are approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years ²⁶ . The monthly electricity supplied/exported by the project activity in the JMR report is cross checked with the monthly invoices of sale. In the absence or delay in the meter calibration appropriate Guidelines will be applied appropriately to confirm the conservativeness of metering. The metering arrangement, accuracy class of meters, calibration frequency is under control of state electricity board and PP do not have any control on it. PP is getting value of net electricity supplied to grid and the same is considered the monitoring parameter. The billing is raised based on substation meters.
Purpose of the data	Calculation of baseline emissions
Calculation method	Thus, Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh
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 for this project activity, whichever occurs later.

For Rajasthan Site

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	Monthly joint meter reading reports
Description of measurement methods and procedures to be applied	The difference of final value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value will be considered for ER calculations.

²⁶ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

Frequency of monitoring/recording	Continuous measurement & monthly recording
Value monitored	132,981.60
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. The meter calibration details are provided in Appendix 2 of this document.
QA/QC procedures to be applied	The meters are approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years. ²⁷ The monthly electricity supplied/exported by the project activity in the JMR report is cross checked with the monthly invoices of sale. In the absence or delay in the meter calibration appropriate Guidelines will be applied appropriately to confirm the conservativeness of metering. The metering arrangement, accuracy class of meters, calibration frequency is under control of state electricity board and PP do not have any control on it. PP is getting value of net electricity supplied to grid and the same is considered the monitoring parameter. The billing is raised based on substation meters.
Purpose of the data	Calculation of baseline emissions
Calculation method	Thus, Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh
Comments	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of VERs for this project activity, whichever occurs later.

For Chhattisgarh Site

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	Monthly joint meter reading reports
Description of measurement methods and procedures to be applied	The difference of final value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value will be considered for ER calculations.
Frequency of monitoring/recording	Continuous measurement & monthly recording
Value monitored	635,231.18

²⁷ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.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. The meter calibration details are provided in Appendix 2 of this document.
QA/QC procedures to be applied	The meters are approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years. ²⁸ The monthly electricity supplied/exported by the project activity in the JMR report is cross checked with the monthly invoices of sale. In the absence or delay in the meter calibration appropriate Guidelines will be applied appropriately to confirm the conservativeness of metering. The metering arrangement, accuracy class of meters, calibration frequency is under control of state electricity board and PP do not have any control on it. PP is getting value of net electricity supplied to grid and the same is considered the monitoring parameter. The billing is raised based on substation meters.
Purpose of the data	Calculation of baseline emissions
Calculation method	Thus, Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh
Comments	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of VERs for this project activity, whichever occurs later.

For Maharashtra Site

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	Monthly joint meter reading reports
Description of measurement methods and procedures to be applied	The difference of final value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value will be considered for ER calculations.
Frequency of monitoring/recording	Continuous measurement & monthly recording
Value monitored	125,246.10
Monitoring equipment	The electricity exported/ supplied by the plant to pooling substation and further to substation. This meter also measures

²⁸ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

	electricity imported by the plant from the grid. The meter calibration details are provided in Appendix 2 of this document.
QA/QC procedures to be applied	The meters are approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years. ²⁹ The monthly electricity supplied/exported by the project activity in the JMR report is cross checked with the monthly invoices of sale. In the absence or delay in the meter calibration appropriate Guidelines will be applied appropriately to confirm the conservativeness of metering. The metering arrangement, accuracy class of meters, calibration frequency is under control of state electricity board and PP do not have any control on it. PP is getting value of net electricity supplied to grid and the same is considered the monitoring parameter. The billing is raised based on substation meters.
Purpose of the data	Calculation of baseline emissions
Calculation method	Thus, Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh
Comments	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of VERs for this project activity, whichever occurs later.

For Uttar Pradesh Site

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	Monthly joint meter reading reports
Description of measurement methods and procedures to be applied	The difference of final value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value will be considered for ER calculations.
Frequency of monitoring/recording	Continuous measurement & monthly recording
Value monitored	269,042.41
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. The meter calibration details are provided in Appendix 2 of this document.

²⁹ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

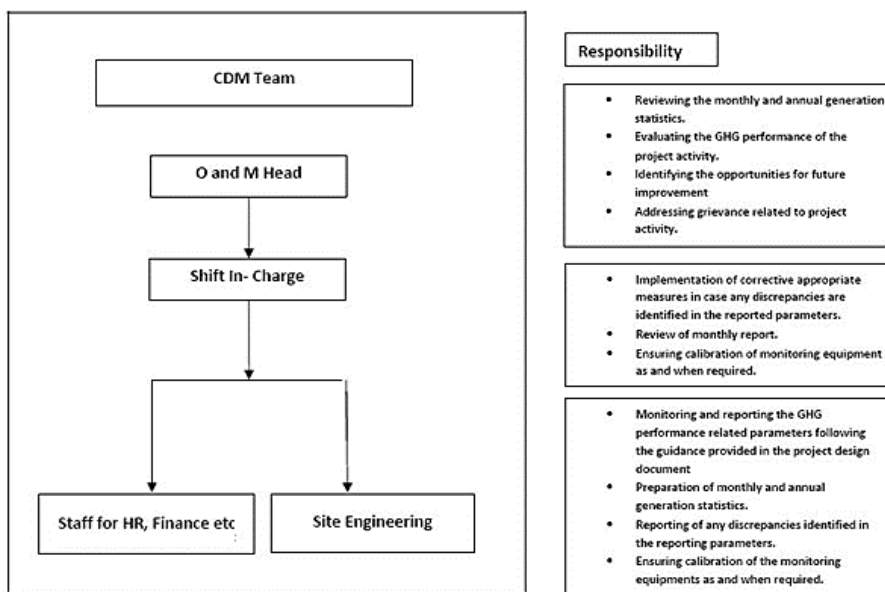
QA/QC procedures to be applied	The meters are approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years. ³⁰ The monthly electricity supplied/exported by the project activity in the JMR report is cross checked with the monthly invoices of sale. In the absence or delay in the meter calibration appropriate Guidelines will be applied appropriately to confirm the conservativeness of metering. The metering arrangement, accuracy class of meters, calibration frequency is under control of state electricity board and PP do not have any control on it. PP is getting value of net electricity supplied to grid and the same is considered the monitoring parameter. The billing is raised based on substation meters.
Purpose of the data	Calculation of baseline emissions
Calculation method	Thus, Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh
Comments	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of VERs 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:

³⁰ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf



Data Measurement

The export and import energy are measured continuously using above mentioned Main and Check meters located at the substations. Readings of meters shall be taken on monthly basis by authorized officer of SEB in the presence of PP or representative of PP. Based on the Meter Reading Statement to PP, invoices are raised. These invoices can be used for cross checking the meter readings taken for the respective project activity.

Data collection and archiving

Readings from meters are collected in the presence of the plant in-charge. Export and Import data would be recorded and stored in logs as well as in electronic form on a daily basis. 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

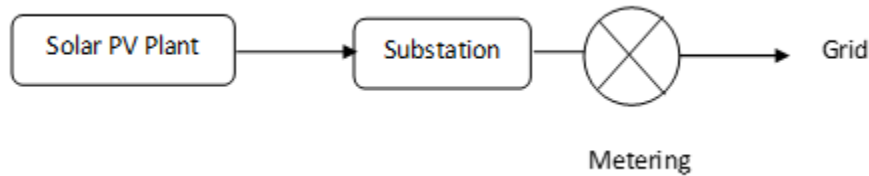
The project activity does not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized.

Personnel training

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff has been trained. The plant helpers have been 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.



The metering arrangement for all the three solar sites are the same. Each solar plant has their own dedicated metering arrangement at the substation end. The metering arrangement is under control of state electricity board and may change in future.

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:

$$\begin{aligned} BE_y &= 6,144,473.60 \text{ MWh} \times 0.9475 \text{ tCO}_2\text{e} \\ &= 5,821,887 \text{ tCO}_2\text{e} \end{aligned}$$

$$ER_y = BE_y - PE_y$$

$$\text{Hence, } ER_y = 5,821,887 - 0$$

$$= 5,821,887 \text{ tCO}_2\text{e} \text{ (Round down value)}$$

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

Not Applicable, since leakage emissions from the solar project activity is zero as per ACM0002 methodology.

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	164,276	0	0	164,276	0	164,276
01-January-2022 to 31-December-2022	1,933,005	0	0	1,933,005	0	1,933,005
01-January-2023 to 31-December-2023	2,038,813	0	0	2,038,813	0	2,038,813
01-January-2024 to 31-October-2024	1,685,793	0	0	1,685,793	0	1,685,793
Total	5,821,887	0	0	5,821,887	0	5,821,887

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01-December-2021 to 31-December-2021	131,900	164,276	24.55%	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.
01-January-2022 to 31-December-2022	1,553,021	1,933,005	24.47%	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.
01-January-2023 to 31-December-2023	1,553,021	2,038,813	31.28%	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.
01-January-2024 to 31-October-2024	1,297,729	1,685,793	29.90%	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.
Total	4,535,672	5,821,887	28.36%	The estimated emission reduction to be achieved from the project activity for the current monitoring period is 4,535,672 tCO ₂ e

				(the basis of calculation is unitary method using annual emission reduction in the estimated ER sheet), whereas actual emission reductions achieved are 5,821,887 tCO ₂ e, which is approximately 28.36% higher than the estimated emission reduction for this project. 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.
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The observed PLF during the current monitoring period is 24.26% higher than the estimation in the registered VCS PDMR. Also, as per the registered VCS PDMR, the 32.18% increase in PLF would breach the threshold value of equity IRR value. The current increase is 28.36% which is lower than 32.18%, therefore increase in PLF having no impact on the project additionality.

APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

No commercially sensitive information has been provided in the MR.

Section	Information	Justification

APPENDIX 2: METER CALIBRATION DETAILS

The calibration details of the meters are as below: -

Name of SPVs	Location	Meter Details	Sr. No.	Accuracy Class	Date of Calibration	Due date of calibration	Delay in Calibration
Parampujya Solar Energy Private Limited	Chhattisgarh-100 MW	Main Meter	CSE52107	0.2s	04-Feb-2021	03-Feb-2026	No delay
		Check Meter	CSE52108	0.2s	04-Feb-2021	03-Feb-2026	No delay
		Main Meter	XE554165	0.2s	03-Feb-2021	02-Feb-2026	No delay
		Check Meter	CSE52109	0.2s	03-Feb-2021	02-Feb-2026	No delay
	Kilaj, Maharashtra-20 MW	Main Meter	02832472	0.2s	07-Feb-2018 08-May-2023	06-Feb-2023 07-May-2028	07-Feb-2023 to 07-May-2023
		Check Meter	02832473	0.2s	07-Feb-2018 08-May-2023	06-Feb-2023 07-May-2028	07-Feb-2023 to 07-May-2023
	Pavagada, Karnataka-150 MW	T2 P5 Main Meter	LT-0883-A	0.2s	30-Nov-2019	29-Nov-2024	No delay
		T2 P5 Check Meter	LT-0884-A	0.2s	30-Nov-2019	29-Nov-2024	No delay
		T2 P6 Main Meter	LT-0886-A	0.2s	30-Nov-2019	29-Nov-2024	No delay
		T2 P6 Check Meter	LT-0887-A	0.2s	30-Nov-2019	29-Nov-2024	No delay
		R1 P11 Main Meter	LT-0894-A	0.2s	30-Nov-2019	29-Nov-2024	No delay
		R1 P11 Check Meter	LT-0864-A	0.2s	30-Nov-2019	29-Nov-2024	No delay

		R1 P12 Main Meter	LT-0862-A	0.2s	30-Nov- 2019	29-Nov- 2024	No delay
		R1 P12 Check Meter	LT-0879-A	0.2s	30-Nov- 2019	29-Nov- 2024	No delay
		T2 P9 Main Meter	LT-0890-A	0.2s	30-Nov- 2019	29-Nov- 2024	No delay
		T2 P9 Check Meter	LT-0891-A	0.2s	30-Nov- 2019	29-Nov- 2024	No delay
		T2 P10 Main Meter	LT-0868-A	0.2s	30-Nov- 2019	29-Nov- 2024	No delay
		T2 P10 Check Meter	LT-0869-A	0.2s	30-Nov- 2019	29-Nov- 2024	No delay
	Kallur, Karnataka- 40 MW	Main Meter	17051235	0.2s	23-Oct- 2018 08-Mar- 2021	22-Oct- 2023 07-Mar- 2026	No delay
		Check Meter	17117851	0.2s	23-Oct- 2018 08-Mar- 2021	22-Oct- 2023 07-Mar- 2026	No delay
Wardha Solar (Maharashtr a) Private Limited	Madhuvanahall i, Karnataka- 100 MW	Main Meter	17010230	0.2s	29-Jun- 2019	28-Jun- 2024	-
			22011753 ³¹	0.2s	21-Dec- 2022	20-Dec- 2027	No delay
		Check Meter	17002967	0.2s	29-Jun- 2019	28-Jun- 2024	-
			22011809 ³²	0.2s	21-Dec- 2022	20-Dec- 2027	No delay
		Main Meter	17117793	0.2s	10-Dec- 2018	09-Dec- 2023	-

³¹ The old Main Meter with SL. No. 17010230 was replaced with the new Main Meter with SI. No. 22011753, which was calibrated and installed on 21-December-2022.

³² The old Check Meter with SL. No. 17002967 was replaced with the new Check Meter with SI. No. 22011809, which was calibrated and installed on 21-December-2022.

	Maskal, Karnataka- 50 MW	Check Meter	23002740 ₃₃	0.2s	16-Mar-2023	15-Mar-2028	No delay
			17117794	0.2s	10-Dec-2018	09-Dec-2023	-
			23002741 ₃₄	0.2s	16-Mar-2023	15-Mar-2028	No delay
	Nalwar, Karnataka- 40 MW	Main Meter	17069221	0.2s	04-Sep-2019	03-Sep-2024	-
			23003154 ₃₅	0.2s	17-Mar-2023	16-Mar-2028	No delay
		Check Meter	17069179	0.2s	04-Sep-2019	03-Sep-2024	-
			23003155 ₃₆	0.2s	17-Mar-2023	16-Mar-2028	No delay
	Rajeshwar, Karnataka- 50 MW	Main Meter	16113406	0.2s	22-Sep-2021	21-Sep-2026	-
			23002722 ₃₇	0.2s	14-May-2024	13-May-2029	No delay
		Check Meter	16113453	0.2s	22-Sep-2021	21-Sep-2026	-
			23002723 ₃₈	0.2s	14-May-2024	13-May-2029	No delay
	Rastapur, Karnataka- 50 MW	Main Meter	17069189	0.2s	28-Apr-2017	27-Apr-2022	-
			23002734 ₃₉	0.2s	18-Mar-2023	17-Mar-2028	28-Apr-2022 to 17-Mar-2023
		Check Meter	17069203	0.2s	28-Apr-2017	27-Apr-2022	-

³³ The old Main Meter with SL. No. 17117793 was replaced with the new Main Meter with SI. No. 23002740, which was calibrated and installed on 16-March-2023.

³⁴ The old Check Meter with SL. No. 17117794 was replaced with the new Check Meter with SI. No. 23002741, which was calibrated and installed on 16-March-2023.

³⁵ The old Main Meter with SL. No. 17069221 was replaced with the new Main Meter with SI. No. 23003154, which was calibrated and installed on 17-March-2023.

³⁶ The old Check Meter with SL. No. 17069179 was replaced with the new Check Meter with SI. No. 23003155, which was calibrated and installed on 17-March-2023.

³⁷ The old Main Meter with SL. No. 16113406 was replaced with the new Main Meter with SI. No. 23002722, which was calibrated and installed on 14-May-2024.

³⁸ The old Main Meter with SL. No. 16113453 was replaced with the new Main Meter with SI. No. 23002723, which was calibrated and installed on 14-May-2024.

³⁹ The old Main Meter with SL. No. 17069189 was replaced with the new Main Meter with SI. No. 23002734, which was calibrated and installed on 18-Mar-2023.

			23002735 ⁴⁰	0.2s	18-Mar-2023	17-Mar-2028	28-Apr-2022 to 17-Mar-2023
	Yatnal, Karnataka- 50 MW	Main Meter	17010229	0.2s	08-Mar-2019	07-Mar-2024	-
			21007436 ⁴¹	0.2s	14-Feb-2024	13-Feb-2029	No delay
		Check Meter	17115543	0.2s	08-Mar-2019	07-Mar-2024	-
			21007437 ⁴²	0.2s	14-Feb-2024	13-Feb-2029	No delay
	Kallur, Karnataka- 10 MW	Main Meter	17051089	0.2s	23-Oct-2018 08-Mar-2021	22-Oct-2023 07-Mar-2026	No delay
		Check Meter	17051157	0.2s	23-Oct-2018 08-Mar-2021	22-Oct-2023 07-Mar-2026	No delay
Kodangal Solar Parks Private Limited	Bagewadi, Karnataka- 20 MW	Main Meter	17117910	0.2s	05-Jan-2018 28-Dec-2021	04-Jan-2023 27-Dec-2026	No delay
		Check Meter	17117915	0.2s	05-Jan-2018 28-Dec-2021	04-Jan-2023 27-Dec-2026	No delay
Prayatna Developers Private Limited	Kanasar, Rajasthan- 20 MW	Main Meter	RJB90451	0.2s	01-Dec-2019	30-Nov-2024	No delay
		Check Meter	RJB90452	0.2s	01-Dec-2019	30-Nov-2024	No delay
		Main Meter	RJB90453	0.2s	01-Dec-2019	30-Nov-2024	No delay
		Check Meter	RJB90454	0.2s	01-Dec-2019	30-Nov-2024	No delay
		Main Meter	17115575	0.2s	30-Jan-2018	29-Jan-2023	No delay

⁴⁰ The old Check Meter with SL. No. 17069203 was replaced with the new Check Meter with SI. No. 23002735, which was calibrated and installed on 18-Mar-2023.

⁴¹ The old Main Meter with SL. No. 17010229 was replaced with the new Main Meter with SI. No. 21007436, which was calibrated and installed on 14-February-2024.

⁴² The old Check Meter with SL. No. 17115543 was replaced with the new Check Meter with SI. No. 21007437, which was calibrated and installed on 14-February-2024.

Adani Green Energy (UP) Limited	Byadagi, Karnataka- 20 MW				10-Feb-2022	09-Feb-2027	
		Check Meter	17115581	0.2s	30-Jan-2018 10-Feb-2022	29-Jan-2023 09-Feb-2027	No delay
	Chanapatana, Karnataka- 20 MW	Main Meter	16113303	0.2s	21-Jan-2021	20-Jan-2026	-
			21005089 ⁴³		23-Dec-2021	22-Dec-2026	No delay
		Check Meter	16113423	0.2s	21-Jan-2021	20-Jan-2026	-
			21005101 ⁴⁴		23-Dec-2021	22-Dec-2026	No delay
	Gubbi, Karnataka- 20 MW	Main Meter	17117830	0.2s	24-Jan-2020	23-Jan-2025	No delay
		Check Meter	17117909	0.2s	24-Jan-2020	23-Jan-2025	No delay
	Holenarasipura, Karnataka- 20 MW	Main Meter	17117831	0.2s	05-Feb-2020	04-Feb-2025	No delay
		Check Meter	17117835	0.2s	05-Feb-2020	04-Feb-2025	No delay
	Jewargi, Karnataka- 20 MW	Main Meter	17117797	0.2s	09-Feb-2021	08-Feb-2026	No delay
		Check Meter	17117798	0.2s	09-Feb-2021	08-Feb-2026	No delay
	K. R. Pet, Karnataka- 20 MW	Main Meter	17117852	0.2s	06-Jan-2021	05-Jan-2026	-
			23002744 ⁴⁵		23-Mar-2023	22-Mar-2028	No delay
		Check Meter	17117857	0.2s	06-Jan-2021	05-Jan-2026	-
			23002745 ⁴⁶		23-Mar-2023	22-Mar-2028	No delay
		Main Meter	17115582	0.2s	16-Oct-2017	15-Oct-2022	-

⁴³ The old Main Meter with SL. No. 16113303 was replaced with the new Main Meter with SI. No. 21005089, which was calibrated and installed on 23-December-2021.

⁴⁴ The old Check Meter with SL. No. 16113423 was replaced with the new Check Meter with SI. No. 21005101, which was calibrated and installed on 23-December-2021.

⁴⁵ The old Main Meter with SL. No. 17117852 was replaced with the new Main Meter with SI. No. 23002744, which was calibrated and installed on 23-March-2023.

⁴⁶ The old Check Meter with SL. No. 17117857 was replaced with the new Check Meter with SI. No. 23002745, which was calibrated and installed on 23-March-2023.

	Malur, Karnataka- 20 MW	Check Meter	21005027 ⁴⁷	0.2s	11-Aug-2022	10-Aug-2027	No delay
			17115571	0.2s	16-Oct-2017	15-Oct-2022	-
			21005046 ⁴⁸	0.2s	11-Aug-2022	10-Aug-2027	No delay
	Magadi, Karnataka- 20 MW	Main Meter	17117800	0.2s	27-May-2019	26-May-2024	-
			23002746 ⁴⁹		13-Mar-2023	12-Mar-2028	No delay
		Check Meter	17117801	0.2s	27-May-2019	26-May-2024	-
			23002747 ⁵⁰		13-Mar-2023	12-Mar-2028	No delay
	Periyapatna, Karnataka- 20 MW	Main Meter	21004958	0.2s	28-Sep-2021	27-Sep-2026	No delay
		Check Meter	21005086	0.2s	28-Sep-2021	27-Sep-2026	No delay
	Ramanagara, Karnataka- 20 MW	Main Meter	17117842	0.2s	28-Mar-2018	27-Mar-2023	-
			23002748 ⁵¹	0.2s	13-Mar-2023	12-Mar-2028	No delay
		Check Meter	17117863	0.2s	28-Mar-2018	27-Mar-2023	-
			23002749 ⁵²	0.2s	13-Mar-2023	12-Mar-2028	No delay
	T.Narasipura, Karnataka- 20 MW	Main Meter	17071202	0.2s	25-Feb-2021	24-Feb-2026	-
			21004992 ⁵³		04-Dec-2024	03-Dec-2029	No delay

⁴⁷ The old Main Meter with SL. No. 17115582 was replaced with the new Main Meter with SI. No. 21005027, which was calibrated and installed on 11-August-2022.

⁴⁸ The old Check Meter with SL. No. 17115571 was replaced with the new Check Meter with SI. No. 21005046, which was calibrated and installed on 11-August-2022.

⁴⁹ The old Main Meter with SL. No. 17117800 was replaced with the new Main Meter with SI. No. 23002746, which was calibrated and installed on 13-March-2023.

⁵⁰ The old Check Meter with SL. No. 17117801 was replaced with the new Check Meter with SI. No. 23002747, which was calibrated and installed on 13-March-2023.

⁵¹ The old Main Meter with SL. No. 17117842 was replaced with the new Main Meter with SI. No. 23002748, which was calibrated and installed on 13-March-2023.

⁵² The old Check Meter with SL. No. 17117863 was replaced with the new Check Meter with SI. No. 23002749, which was calibrated and installed on 13-March-2023.

⁵³ The old Main Meter with SL. No. 17071202 was replaced with the new Main Meter with SI. No. 21004992, which was calibrated and installed on 04-December-2024.

		Check Meter	17071210	0.2s	25-Feb-2021	24-Feb-2026	-
			21005107 ⁵⁴		04-Dec-2024	03-Dec-2029	No delay
	Tiptur, Karnataka- 20 MW	Main Meter	16193103	0.2s	28-Jun-2019	27-Jun-2024	-
			21004777 ⁵⁵	0.2s	19-Mar-2022	18-Mar-2027	No delay
		Check Meter	15197803	0.2s	28-Jun-2019	27-Jun-2024	-
			21004944 ⁵⁶	0.2s	19-Mar-2022	18-Mar-2027	No delay
Adani Green Energy (UP) Limited	Jhansi, Uttar Pradesh- 50 MW	Main Meter	17075544	0.2s	25-Jun-2021	24-Jun-2026	No delay
		Check Meter	17075556	0.2s	25-Jun-2021	24-Jun-2026	No delay

⁵⁴ The old Check Meter with SL. No. 17071210 was replaced with the new Check Meter with SL. No. 210051047, which was calibrated and installed on 04-December-2024.

⁵⁵ The old Main Meter with SL. No. 16193103 was replaced with the new Main Meter with SL. No. 21004777, which was calibrated and installed on 19-March-2022.

⁵⁶ The old Check Meter with SL. No. 15197803 was replaced with the new Check Meter with SL. No. 21004944, which was calibrated and installed on 19-March-2022.