



TEMPLATE

MONITORING REPORT

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VERSION v. **1.1**

RELATED SUPPORT - **TEMPLATE GUIDE Monitoring Report v. 1.1**

This document contains the following Sections

Key Project Information

Q - Description of project

Q - Implementation of project

Q - Description of monitoring system applied by the project

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Gold Standard

Climate Security and Sustainable Development

KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	GS 7726
Title of the project (s) covered by monitoring report	300 MW Solar PV Plant at Bhadla, Rajasthan
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	05
Version number of the monitoring report	03
Completion date of the monitoring report	06/04/2023
Date of project design certification	27/09/2021
Date of Last Annual Report	NA
Monitoring period number	02
Duration of this monitoring period	01/08/2021 to 31/10/2022 (Including both the days)
Project Representative	Clean Solar Power (Bhadla) Pvt. Ltd.
Host Country	India
Activity Requirements applied	<input type="checkbox"/> Community Services Activities <input checked="" type="checkbox"/> Renewable Energy Activities <input type="checkbox"/> Land Use and Forestry Activities/Risks & Capacities <input type="checkbox"/> N/A
Methodology (ies) applied and version number	ACM0002 "Grid-connected electricity generation from renewable sources" Version 20.0
Product Requirements applied	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 7: Affordable and Clean Energy	MWh of renewable energy generated	900,443.59	MWh
SDG 8: Decent Work and Economic Growth	Trainings Employees	6 trainings 42 Employments	Trainings Employees
SDG 13: Climate Action	Emission Reduction	841,554	VERs

Table 2 – Product Vintages

Start Dates	End Dates	Amount Achieved		
		SDG 7	SDG 8	SDG 13
01/08/2021	31/12/2021	299,745.74 MWh	13 people were employed and 3 trainings conducted	280,142 tCO ₂ e
01/01/2022	31/10/2022	600,697.85 MWh	29 peoples were employed and 3 trainings conducted	561,412 tCO ₂ e

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

The main purpose of the project activity is to generate electrical energy through sustainable means using solar power resources, the generated green electricity is contributing to climate change mitigation efforts. This project activity is a large-scale solar project. Clean Solar Power (Bhadla) Pvt. Ltd. is the project investors for this project activity. The project is replacing anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 693,327 tCO₂e per annum, thereon displacing 741,845 MWh/year amount of electricity from the generation-mix of power plants connected to the Indian electricity grid, which is mainly dominated by thermal/ fossil fuel-based power plant.

The project activity is the installation of a new grid-connected renewable power plant/unit and this is not a CPA that has been excluded from a registered CDM PoA as a result of erroneous inclusion of CPAs.

The details of the project are mentioned in the table:

1	Power Purchase Agreement	27/04/2018
2	Start Date (EPC contract)	19/02/2019
3	Stakeholder feedback Round	26/07/2020

Project Investors' Name	Commissioning dates	Capacity in MW	District	State
Clean Solar Power (Bhadla) Pvt. Ltd. (R1)	15/02/2020	100 MW	Jodhpur	Rajasthan
Clean Solar Power (Bhadla) Pvt. Ltd. (R2)	28/02/2020	100 MW	Jodhpur	Rajasthan
Clean Solar Power (Bhadla) Pvt. Ltd. (R3)	10/12/2019	100 MW	Jodhpur	Rajasthan

Scenario existing prior to the implementation of the project activity:

As the project activity is the installation of a new grid-connected renewable power plant/unit. The scenario existing prior to the implementation of project activity is 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, as reflected in the combined margin (CM) calculations described in

the “Tool to calculate the emission factor for an electricity system” (Version 7.0, EB 100 annex 4).

Baseline Scenario

Baseline scenario and Scenario existing prior to the implementation of the project activity are both same.

Sustainable Development

The project’s contribution towards sustainable development has been addressed based on the following sustainable development aspects:

- Social well being

The project activity provides job opportunity to local people during erection, commissioning and maintenance of the Solar power project. Frequency of visiting to villages and nearby areas by skilled, technical and industrialist has increased due to installation /site visit/operation and maintenance work related to the project at plant site. This directly and indirectly positively effects the economy of nearby populace.

- Environmental well being

Solar power is one of the cleanest renewable energy powers and does not involve any fossil fuel. There are no GHG emissions. The impact on land, water, air and soil is negligible. Thus the project activity contributes to environmental well-being without causing any negative impact on the surrounding environment.

- Economic well being

The project activity generates permanent and temporary employment opportunity within the vicinity of the project. The electricity supply in the nearby area improves which directly and indirectly improves the economy and life style of the area.

- Technological well being

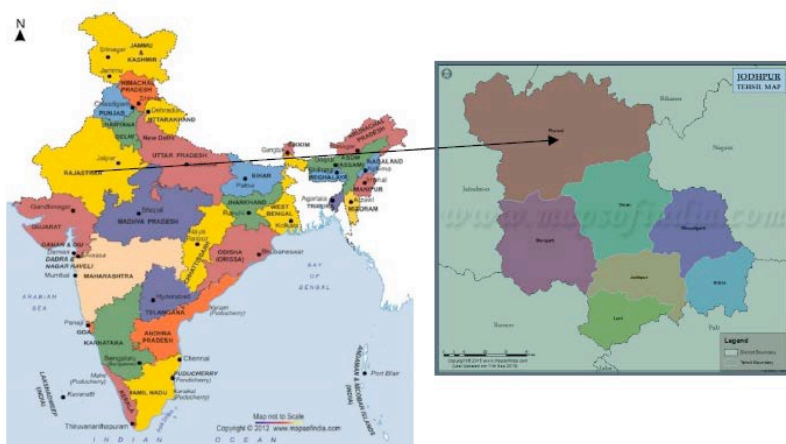
The project activity is step forward in harnessing the untapped solar potential and further diffusion of the solar technology in the region. The project activity leads to the promotion and demonstrates the success of solar projects in the region which further motivate more investors to invest in solar power projects. Hence, the project activity leads to technological well-being.

During the current monitoring period 01/08/2021 to 31/10/2022 (Inclusive of both the dates) the project resulted in emission reductions of 841,554 tCO₂e and underwent continued operation other than scheduled maintenance and breakdowns.

A.2. Location of project

The project activity is located at R1, R2 and R3 plot- Bhadla phase III Solar Park, Village – Bhadla, Tehsil: Phalodi at Jodhpur district in Rajasthan.

Project Investors' Name	Commissioning Date	Capacity in MW	UTM Coordinates	Village/ Tehsil/ District	State
Clean Solar Power (Bhadla) Pvt. Ltd. (R1)	15/02/2020	100 MW	27° 28' 20.7336" (N)	Bhadla/ Phalodi/ Jodhpur	Rajasthan
Clean Solar Power (Bhadla) Pvt. Ltd. (R2)	28/02/2020	100 MW	72° 0' 13.572" (E)	Bhadla/ Phalodi/ Jodhpur	Rajasthan
Clean Solar Power (Bhadla) Pvt. Ltd. (R3)	10/12/2019	100 MW		Bhadla/ Phalodi/ Jodhpur	Rajasthan



A.3. Reference of applied methodology

Title : Grid-connected electricity generation from renewable sources.

References : Approved Large Scale Consolidated Methodology: ACM0002 “Grid-connected electricity generation from renewable sources” Version 20.0¹.

Tools : Tool for the demonstration and assessment of additionality 7.0²

Tool to calculate the emission factor for an electricity system 7.0³

A.4. Crediting period of project

Start date of crediting period : 10/12/2019 – 09/12/2024

Total Length of crediting period : 5 Years

Type of crediting period : Renewable

¹ <https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

² <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

³ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The project activity involves installation of 300 MW grid connected solar photovoltaic power plant. The PV system mainly consists of PV modules, module mounting structures, inverters, regulators, monitoring devices etc.

Item	Description
Plant Capacity	300 MW
Solar PV Module	433 MWpf
Module Type	Polycrystalline
Capacity of each Module proposed	335 Wp/325 Wp/315Wp
Inverter Capacity	2500 kWac
Solar Inverter	Central

Electrical Characteristic are as below:

- 3-phase alternating current
- Nominal frequency is 50 Hz
- Final Voltage at Delivery Point is 400/220/132/66kV

The project activity for the current monitoring period is operating at a plant load factor of 27.37 % exporting 741,845 MWh of electrical energy to the Indian grid. This is resulting in average annual reduction of 693,327 tCO₂ per annum from the project activity. The project activity does not involve any technology transfer.

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Sr. No	Project ID	Project location	Capacity (MW)	Commissioning Date
1	R1 Plot	Village –Bhadal, Tehsil- Phalodi, Dist- Jodhpur	100 MW	15/02/2020
2	R2 Plot	Village –Bhadal, Tehsil- Phalodi, Dist- Jodhpur	100 MW	28/02/2020
3	R3 Plot	Village –Bhadal, Tehsil- Phalodi, Dist- Jodhpur	100 MW	10/12/2019

The installation details of the equipment's at the project site are remained the same during this monitoring period and there is no exchange of equipment's. Also, there are no events / situations leading to changes in project activity that occurred during the monitoring period.

B.1.1 Forward Action Requests

FAR-1 At the time of verification, VVB shall check the rainwater drains and confirm its functionality.

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Response- During 1st verification, the verifying VVB has confirmed that rainwater drains are provided which was confirmed during the current assessment too.

FAR-2 At the time of verification, VVB shall check that salaries paid to the local, unskilled workers is as per local standards.

Response- This FAR is also closed during the 1st verification and for the current assessment, assessment team checked and confirmed from the salary slips from local, unskilled workers that they are being paid salary which is as per the local standards.

FAR-3 Site visit shall be performed at the time of 1st verification for this project activity. Verifying VVB shall confirm the location of the project activity in line with geo-coordinates.

Response- Since physical site visit was conducted for the 1st verification, this FAR is already closed.

B.2. Post-Design Certification changes

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B.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology, or standardized baseline

There are no deviations/delays regarding the implementation status from registered PDD, Monitoring and Reporting Plan, applied methodology or applied standardized baseline.

B.2.2. Corrections

Not Applicable during the current monitoring period. There are no corrections.

B.2.3. Changes to start date of crediting period

Not Applicable during the current monitoring period. There is no change in start date of crediting period.

B.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

Not Applicable during the current monitoring period. There are no permanent changes from the design certified monitoring plan, applied methodology or applied standardized baseline of this project.

B.2.5. Changes to project design of approved project

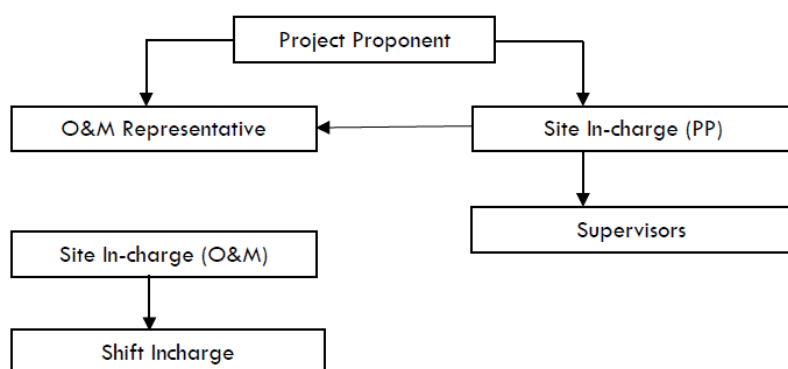
Not Applicable during the current monitoring period. There are no changes to project design of the approved project.

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

The monitoring plan is developed in accordance with the modalities and procedures for CDM project activities and is proposed for grid-connected solar power project/ unit being implemented in Rajasthan, India. The monitoring plan, which is 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.

The monitoring team is composed the following staff:



Responsibilities of Site Incharge (PP): Overall functioning and maintenance of the project activity, the Site incharge is coordinating with the O&M operator as well as the site supervisors.

The DSA statement issued by NRPC (Northern Regional Power Committee) contains the information of the Scheduled Power, Actual Power and the Deviation between actual & scheduled power. The scheduled power being feed into the grid can be cross-checked from the monthly Invoices raised by the PP. For ER calculations, the values of Actual power will be considered.

In any case where values have slightest of variation in different records the most conservative value will be taken in the project monitoring report.

Responsibilities of O&M Representative: Co-ordination between Site incharge of the O&M operator as well as the project participant and further report to PP head office.

Responsibilities of Site In-charge (O&M Operator): Responsibility for maintaining the data records, ensures completeness of data, and reliability of data (calibration of equipment) as well as data recording for all the parameters.

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

Data archiving policy: All monitored data is archived electronically for a period of two years after the end of the crediting period or the last issuance of GS VERs, whichever occurs later.

Data Measurement: The scheduled generation is published on REA website and invoice is raised on the scheduled generation. But for emission reduction calculation actual generation is referred provided by Northern Regional Power Committee as Deviation Settlement Account. The link for DSA is mentioned below-

http://164.100.60.165/archives/ar_comm2021-2022.html

The DSA is uploaded on weekly basis and given in LU and will be converted into MWh

Data collection and archiving

Export & Import readings from main and check meters is collected under the supervision of the O&M Team or authorized representatives of PP. The net electricity supplied to grid is be calculated based on export & import readings. The period of storage of the monitored data is 2 years after the end of crediting period or till the last issuance of GS VERs for the project activity whichever occurs later.

Mismatch in Monitoring Period and the Billing Period

In case the dates of a particular monitoring period do not match with the dates of the billing period, the net electricity exported to the grid is calculated from: $D = (A/B) * C$
A = Difference of number of days which are not matching of billing period and monitoring period.

B = Number of days of the billing period/ month which was not matched with the monitoring period.

C = Net Electricity supplied to the grid for that given billing period/ month. The calculated value after apportioning would be used for calculation of emission reductions during that period.

Emergency preparedness

The project activity is not resulting 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 unlikely event of failure of both Main meter &/or Check meter installed at sub-station, where both the faulty meters are required to repair or replaced simultaneously, the meters shall be replaced immediately by the spare meter kept available at the site.

Personnel training

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

SECTION D. DATA AND PARAMETERS

D.1. Data and parameters fixed ex ante or at renewal of crediting period

SDG 13 (Indicators 13.2.1)

Data/parameter	EF_{OM,y}
Unit	tCO ₂ e/MWh
Description	Operating Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, version 16 ⁴
Value(s) applied	0.9568
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07.0.0" as 3-year generation weighted average using data for the years 2017-18, 2018-19 and 2019-20. The data are obtained from "CO ₂ Baseline Database for Indian Power Sector" version 16.0, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

Data/parameter	EF_{BM,y}
Unit	tCO ₂ e/MWh
Description	Build Margin CO ₂ emission factor in year y

⁴ https://cea.nic.in/wp-content/uploads/baseline/2021/06/User_Guide_ver_16_2021-1.pdf

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Source of data	Calculated from CEA database, version 16 ⁵
Value(s) applied	0.8682
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07.0" as 3-year generation weighted average using data for the years 2019-20. The data are obtained from "CO ₂ Baseline Database for Indian Power Sector" version 16.0, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

Data/parameter	EF_{CM,y}
Unit	tCO ₂ e/MWh
Description	Combined Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 16
Value(s) applied	0.9346 (Indian grid)
Choice of data or Measurement methods and procedures	<p>The combined margin emissions factor is calculated as follows:</p> $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ <p>Where:</p> <p>EF_{grid,BM,y} = Build margin CO₂ emission factor in year y (tCO₂/MWh)</p> <p>EF_{grid,OM,y} = Operating margin CO₂ emission factor in year y (tCO₂/MWh)</p> <p>W_{OM} = Weighting of operating margin emissions factor (%) = 75%</p> <p>W_{BM} = Weighting of build margin emissions factor (%) = 25%</p>
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

D.2 Data and parameters monitored

SDG 7 (Indicators 7.2.1)

Data / Parameter	EG_{Facility,y}
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⁵ https://cea.nic.in/wp-content/uploads/baseline/2021/06/User_Guide_ver_16_2021-1.pdf

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Unit	MWh
Description	Total Net electricity exported to grid
Source of data	REA data from Northern Regional Power Committee or Credit notes from the state electricity utility or Generation statement in SLDC data.
Value(s) applied	900,443.59
Measurement methods and procedures	Monitoring: Electrical Energy Meters which are electronic tri-vector meters of accuracy class 0.2 (Main & Check meters) Data type: Measured & Calculated Archiving: Paper & Electronic Recording Frequency: Daily Responsibility: The O&M site-in-charge shall be responsible for the regular recording of data.
Monitoring frequency QA/QC procedures	Continuous measurement and monthly recording The meters are calibrated once in every 5 years by an independent testing laboratory and the data will be cross checked with sales record. Meter details are mentioned in Appendix1: meter calibration details.
Purpose of data	The Data/Parameter is required to calculate the baseline emission
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

SDG 13 (Indicators 13.2.1)

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Data / Parameter	ER_y
Unit	tCO ₂ / year
Description	CO ₂ emission reduction due to implementation of project activity.
Source of data	Calculated as per "Tool to calculate the emission factor for an electricity system,". The data are obtained from "CO ₂ Baseline Database for Indian Power Sector" version 16.0, published by the Central Electricity Authority, Ministry of Power, Government of India.
Value(s) applied	841,554
Measurement methods and procedures	Calculated from CEA database and Energy Generation
Monitoring frequency	The energy meters are calibrated once in every 5 years by an independent testing laboratory. The calibration of the meters done once in five year as per CEA notification ⁶ .
QA/QC procedures	Quantity of net electricity supplied to the grid will be cross checked from the Invoices/Monthly Bill raised by the Project Participants.
Purpose of data	Calculation of baseline emissions
Additional comment	The data will be archived for crediting period+2 years

SDG 8 (Indicators 8.5.1)

Data / Parameter	Quantitative employment			
Unit	Number (employees)			
Description	Number of project employees with Number of male/female, permanent/temporary, local/non local.			
Source of data	Employee Records, Letter from O&M contractor for employment generation Or DOE interview with employees			
Value(s) applied	Total 42 peoples are employed. Further, below is the breakup of employment generated during monitoring period.			
	Year	Skilled	Unskilled	Total
	2021	11	2	13
	2022	22	7	29
	Total	33	9	42

⁶ https://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

Measurement methods and procedures	Year	Male	Female	Total
	2021	11	2	13
	2022	28	1	29
	Total	39	3	42
	Year	Local	Non-local	Total
	2021	10	3	13
	2022	22	7	29
	Total	32	10	42
	Year	Permanent	Temporary	Total
	2021	12	1	13
	2022	25	4	29
	Total	37	5	42
	<p>The total number of persons working in the plant calculated based on the daily log available at site.</p> <p>This parameter also monitor number of men/women employed by the project activity.</p> <p>The job is of type temporary/permanent or skilled/unskilled and local/non-local.</p> <p>The project activity ensures that "equal pay for work of equal value" for both men and women and there is no any discrimination against women."</p> <p>peoples will get equal payment for equal work. The payment will be based on work and no any gender inequality for payment for work of equal value".</p> <p>The average hourly earnings of a person is calculated by considering 8 hours per day working as per Indian standards and is depicted below.</p> <p>For e.g, a person is getting a monthly salary of INR 14,501; then his hourly earnings will be calculated as follows: Hourly Income = $14,501/(30*8) = \text{INR } 60.42$.</p> <p>The minimum wages can be checked from State government published Minimum Wages (Final) Notification 2019: https://labour.rajasthan.gov.in/notification.aspx</p> <p>Also, from the notification from the order published by the Chief Labour Commissioner (Central)33. As per the notification from Chief Labour Commissioner, for semi-skilled workers working in B Category of cities, the daily wage is 357, and accordingly the average hourly earnings come out to be INR 44.62.</p> <p>Thus, it can be justified that, PP is providing the employees/workers with salary/wages higher than the minimum wages as determined by the updated/ latest minimum wages order published by Chief Labour Commissioner (Central). The same can be checked from the salary slips provided.</p>			
	Monitoring frequency	Annually		

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QA/QC procedures	The number of persons employed would be mentioned in the plant register, which can be crossed checked with daily attendance register. Salary slip can be checked for earnings of employees
Purpose of data	Continuation of regular trainings/workshops for employees & O&M staff
Additional comment	-

SDG 8 (Indicators 8.6.1)

Data / Parameter Unit	Quality of Employment Numbers						
Description Source of data	Number of Trainings provided to employees Plant records or the training records for all the employees/ DOE interview with employees, etc.						
Value(s) applied	6 trainings are conducted during current monitoring period Below is the schedule of trainings conducted during the current monitoring period.						
	<u>Sr. no.</u>	<u>Topic</u>	<u>Date & No. of participants</u>		<u>Date & No. of participants</u>		
	R1						
	<u>1</u>	<u>Working with electric safety</u>	<u>31/08/2021</u>	<u>11</u>	<u>21/09/2022</u>	<u>08</u>	
	<u>2</u>	<u>Fire Fighting</u>	<u>15/04/2021</u>	<u>20</u>	<u>12/05/2022</u>	<u>09</u>	
	R2						
	<u>1</u>	<u>Working with electric safety</u>	<u>25/08/2021</u>	<u>12</u>	<u>21/01/2022</u>	<u>13</u>	
	<u>2</u>	<u>Fire Fighting</u>	<u>31/05/2022</u>	<u>13</u>	<u>20/10/2022</u>	<u>12</u>	
	R3						
	<u>1</u>	<u>Working with electric safety</u>	<u>30/08/2021</u>	<u>10</u>	<u>29/01/2022</u>	<u>10</u>	
	<u>2</u>	<u>Fire Fighting</u>	<u>09/01/2022</u>	<u>17</u>	<u>26/11/2022</u>	<u>16</u>	
	Measurement methods and procedures	The technology supplier and the Project developer organize training for the staff on the technology, the monitoring of the plant operation, and the emergency and safety procedures.					
	Monitoring frequency	Annually					
QA/QC procedures	The training records for all the employees						
Purpose of data	To Monitor the SDG 8 Indicator						
Additional comment	-						

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Safeguarding principle: 4.3.5

Data / Parameter	Hazardous Waste
Unit	-
Description	The manufacture, trade, release, and use of hazardous chemicals and/or materials
Source of data	Plant records
Value(s) applied	0
Measurement methods and procedures	Manual
Monitoring frequency	Annually
QA/QC procedures	The waste will be disposed to the waste handlers and the firm will comply with all the local laws for monitoring and disposal.
Purpose of data	Analysis of safeguarding principle
Additional comment	The data will be archived for crediting period+2 years

D.3. Comparison of monitored parameters with last monitoring period

Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period
NA	NA	NA

This section is Not Applicable since no community service activities are involved in this project activity.

D.4. Implementation of sampling plan

Sampling plan not required for this monitoring period.

Deleted: Not Applicable

SECTION E. CALCULATION OF SDG IMPACTS

E.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

SDG 7: Affordable and Clean Energy

Annual Estimated Net Electricity supplied= 741,845 MWh

SDG 8: Decent Work and Economic Growth

Annual estimated value= 1 training /annum and employments to 36 persons.

SDG 13: Climate Action

Estimated annual emission reduction is calculated as follows:

$$\begin{aligned} &= 741,845 \text{ MWh} * 0.9346 \text{ tCO}_2\text{e/ MWh} \\ &= 693,327 \text{ tCO}_2\text{e} \end{aligned}$$

Where 0.9346 is the combined margin emission factor for the project activity.

E.2. Calculation of project value or estimation of project situation of each SDG Impact

SDG 7: Affordable and Clean Energy

For the current monitoring period, the clean energy generation contributed by the project activity is 900,443.59 MWh.

SDG 8: Decent Work and Economic Growth

The project leads to employment opportunities which would not have been possible in the baseline scenario. During the current monitoring period, the project activity provided employment to 42 persons.

Also project activity improves the quality of employment by giving training to employee. During the current monitoring period, 6 training has been conducted.

SDG 13: Climate Action

For the current monitoring period, the emission reductions contributed by the project activity (ER_y) is calculated as follows:

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

Where,

$EG_{PJ, facility, y}$ = Total quantity of net electricity delivered to the Indian grid

$EF_{grid, CM, y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y = 0.9346 tCO₂/MWh

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$$\begin{aligned} BE_y &= 900,443.59 * 0.9346 \\ &= 841,554 \text{ tCO}_2/\text{year (Round down value)} \end{aligned}$$

Project Emission
 $PE_y = 0$

Since $ER_y = BE_y - PE_y$

Therefore, $ER_y = 841,554 - 0 = 841,554 \text{ tCO}_2/\text{year (Round down value)}$

E.3. Calculation of leakage

Not Applicable

E.4. Calculation of net benefits or direct calculation for each SDG Impact

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
7	Affordable and Clean Energy	-	900,443.59 MWh	900,443.59 MWh
8	Decent Work and Economic Growth	-	No. of Employment opportunities created: 42 No. of trainings conducted: 6	No. of Employment opportunities created: 42 No. of trainings conducted: 6
13	Climate Action	841,554 tCO ₂ e	0 tCO ₂ e	841,554 tCO ₂ e

E.5. Comparison of actual SDG Impacts with estimates in approved PDD

SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values ⁷ achieved during this monitoring period
7	928,828.80 MWh	900,443.59 MWh

⁷ Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

No. of Employment opportunities created: 42

Year	Skilled	Unskilled	Total
2021	11	2	13
2022	22	7	29

Year	Male	Female	Total
2021	11	2	13
2022	28	1	29

Year	Local	Non-local	Total
2021	10	3	13
2022	22	7	29

Year	Permanent	Temporary	Total
2021	12	1	13
2022	25	4	29

No. of trainings conducted: 6

8 1 training / annum and
employments to 36 persons

13 868,083 tCO₂e 841,554 tCO₂e

E.5.1. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period

It is to be noted here that as per the estimated emission reduction to be achieved from the project activity for the current monitoring period is 868,083 tCO₂e.

$$= 693,327 * 457 (\text{days}) / 365$$

$$= 868,083 \text{ tCO}_2\text{e}$$

Whereas, actual emission reduction achieved are 841,554 tCO₂e, which is approximately 3.06 % lower than the estimated emission reductions.

E.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

The actual achieved emission reduction for this monitoring period is 3.06 % lower than estimated value in the PDD. The PLF chosen is for the lifetime of the project activity and generation in some years may significantly vary: this is due to the smaller number of sunshine hours during the monitoring period. The generation of electricity depends upon many other climatic conditions, and the availability of sunlight is not within the control of the project participant.

SECTION F. SAFEGUARDS REPORTING

Data/Parameter	Hazardous Waste management
Mitigation Measures followed	The waste is disposed to the waste handlers and the firm complies with all the local laws for monitoring and disposal.
Source	Interview with maintenance staff.
Additional comment	During current monitoring period no hazardous waste is generated.

SECTION G. STAKEHOLDER INPUTS AND LEGAL DISPUTES

G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.

As a part of continuous feedback from stakeholders, the grievances register is placed at site and is being continuously monitored and if any comments are received, they are addressed through the grievance cell.

During the current monitoring period, there were no comments/feedbacks received in the grievance register.

G.2. Report on any stakeholder mitigations that were agreed to be monitored.

Not Applicable

G.3. Provide details of any legal contest that has arisen with the project during the monitoring period

Not Applicable

Appendix 1: Meter calibration details

Accuracy class: 02s (Main & check meter)

Meter	Meter number	Make	Calibration date	Calibration due date
Main meter	2106286	G Tech	23/06/2021	22/06/2026
Main meter	E8272938	KYORITSU	23/06/2021	22/06/2026
Main meter	19090774	Amprobe	23/06/2021	22/06/2026
Check meter	NA	Fluke	23/06/2021	22/06/2026
Check meter	R190000453	AIT501	23/06/2021	22/06/2026

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Check meter	R190014149	AET23	23/06/2021	22/06/2026
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The energy meters are calibrated once in five years. Thus, during the current monitoring period, the calibration is valid and there is no delay in calibration.

Revision History

Version	Date	Remarks
1.1	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Section for POA monitoring Forward action request section Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on safeguard reporting Clarity on design changes Leakage section added for VER/CER projects Addition of Comparison of monitored parameters with last monitoring period Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.0	10 July 2017	Initial adoption

