



Gold Standard[®]
for the Global Goals

Climate Security & Sustainable Development

TEMPLATE

MONITORING REPORT

PUBLICATION DATE 14.10.2020

VERSION v. 1.1

RELATED SUPPORT - TEMPLATE GUIDE Monitoring Report v. 1.1

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KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	5519 ¹
Title of the project (s) covered by monitoring report	70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt Ltd (EKIESL-CDM-APRIL 16-01)
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	02
Version number of the monitoring report	03
Completion date of the monitoring report	28/02/2024
Date of project design certification	03/01/2018
Date of Last Annual Report	26/12/2023
Monitoring period number	1 st (Crediting Period 02: 06/11/2022 to 05/11/2027 Inclusive of both the dates)
Duration of this monitoring period	06/11/2022 to 30/09/2023 (Inclusive of both the days)
Project Representative	Infinite Environmental Solutions Limited
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 ²
Product Requirements applied	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A

¹ [GSF Registry \(goldstandard.org\)](https://registry.goldstandard.org)

² [AG07ZJO3EXD42LT5YV9HR16M8KINPO \(unfccc.int\)](https://unfccc.int/ghg/ghg-activities)

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 7	Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable, and modern energy for all	130,786	MWh
SDG 8	Decent Work and Economic Growth: Promote inclusive and sustainable economic growth, employment, and decent work for all	03 ³	Number of employees
SDG 8	Decent Work and Economic Growth: substantially reduce the proportion of youth not in employment, education, or training	35	Number of Trainings
SDG 8	Decent Work and Economic Growth: substantially reduce the proportion of youth not in employment, education, or training	The income to all the workers is made better than the minimum wage requirements ⁴ : 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled)	INR (Income generation)
SDG 13	Take urgent action to combat climate change and its impacts	121,695	tCO ₂ e (GSVERs)

Table 2 – Product Vintages

		Amount Achieved		
Start Dates	End Dates	SDG 7: Affordable and Clean Energy (MWh)	SDG 8: Decent Work and Economic Growth	SDG 13: Climate Action

³ There are a total of 36 employees working in the plant. However, the PD has employed only 3 new employees during the current Monitoring Period. Therefore, the number of employees under SDG 8 has been reported as 03 new employees during the current monitoring period, in line with the GS4GG guidelines.

⁴ <https://labour.rajasthan.gov.in/notification.aspx>

As per minimum wages notification, 2022 by Department of Labour Rajasthan dated 20/07/2022, the workers in Rajasthan under schedule – I, s. no. 24 are required to be paid minimum wages as mentioned below:

1. Unskilled Workers - 259 INR per day or 6734 INR per month
2. Semi-skilled Workers - 271 INR per day or 7046 INR per month
3. Skilled Workers – 283 INR per day or 7358 INR per month
4. Highly Skilled Workers - 333 INR per day or 8658 INR per month

				(GSVERs) tCO ₂ e
06/11/2022	31/12/2022	20,615	01 new person employed+ 06 training conducted+ The income to all the workers is made better than the minimum wage requirements : 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled)	19,181
01/01/2022	30/09/2023	110,171	02 new people employed+ 29 training conducted+ The income to all the workers is made better than the minimum wage requirements : 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled)	102,514
Total		130,786	03 new people employed+ 35 training conducted+ The income to all the workers is made better than the minimum wage requirements : 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled)	121,695

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

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The main purpose of this project activity is to generate clean form of electricity through renewable solar energy source. Fortum FinnSurya Energy Pvt. Ltd. is the developer of the implemented project activity. The project activity involves installation of 70 MW (AC) (87.5 MWp) solar power project at Bhadla, Jodhpur, Rajasthan, India. The annual average of estimated electricity generation and estimated emission reduction over 5 years of crediting period will be 121,420 MWh/year and 112,980 tCO₂e per year.

The project will replace anthropogenic emissions of greenhouse gases (GHG's) by displacing equivalent 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. During the current monitoring period, the net GHG emission reductions by the project activity is 121,695, tCO₂e. The contribution to SDGs for current monitoring period is as follows:

SDG 13: Climate Action-

The emission reductions achieved from the project activity for the current monitoring period are 121,695 tCO₂e.

SDG 7: Affordable and Clean Energy-

The electricity generated from the project activity for the current monitoring period is 130,786 MWh.

SDG 8: Decent Work and Economic Growth-

There are 03 new people employed for the project and a total of 35 trainings provided during current monitoring period. The income to all the workers is made better than the minimum wage requirements: 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled).

A.2. Location of project

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Latitude : 27° 28' 7.00" North

Longitude : 71° 58' 17.00" East

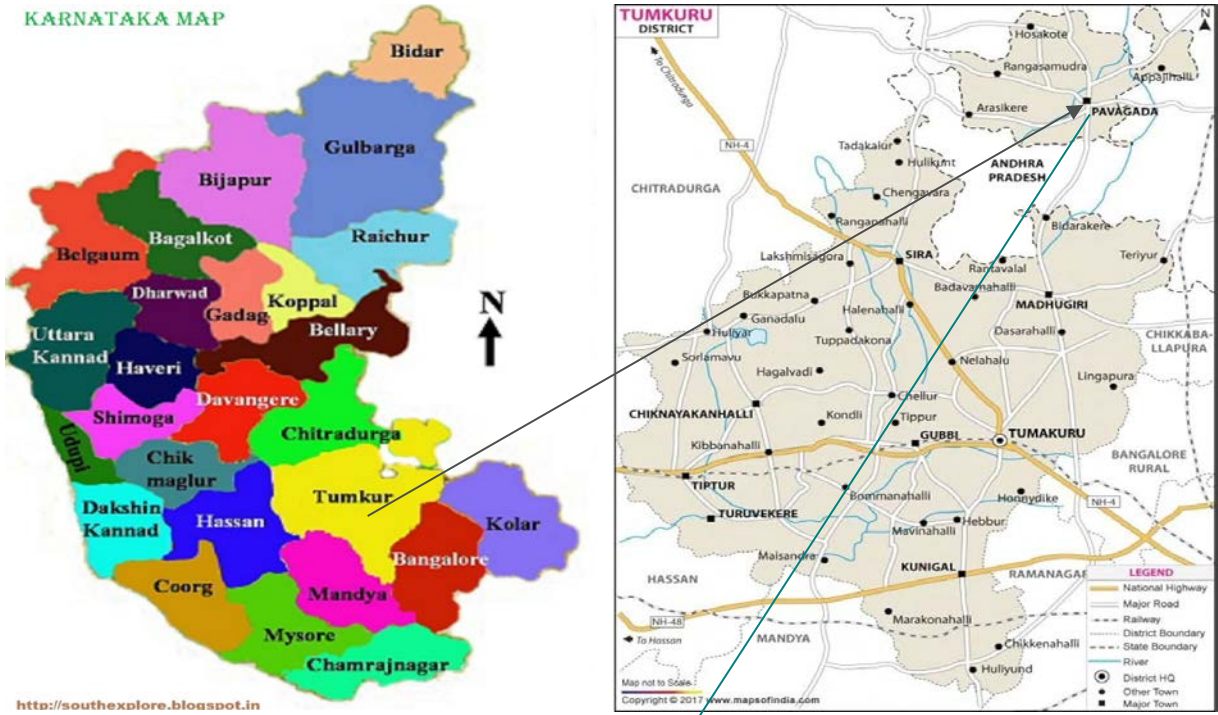
District : Jodhpur

Village : Bhadla

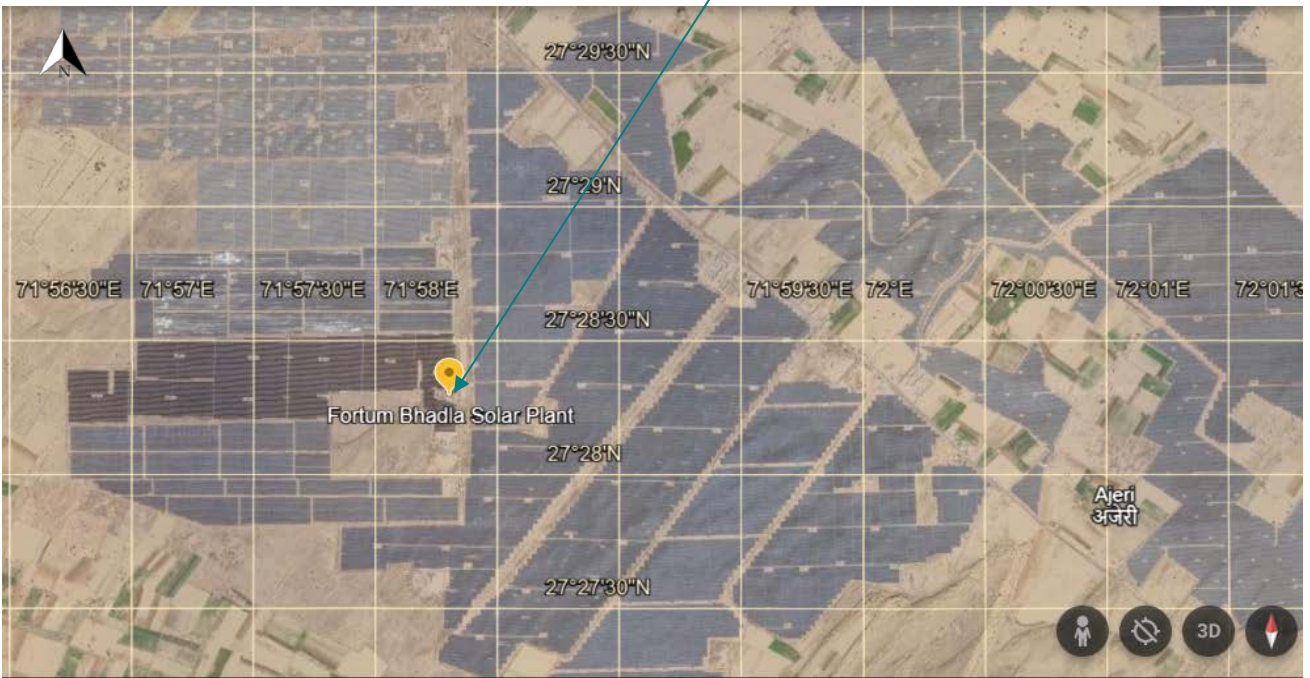
State : Rajasthan

Country : India

The location of the project activity as visible in the Google maps is shown below:



<http://southexplore.blogspot.in>



A.3. Reference of applied methodology

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Title : Grid-connected electricity generation from renewable sources.

References : Approved Large Scale Consolidated Methodology: ACM0002 "Grid-connected electricity generation from renewable sources" (Version 20.0, EB 89, Annex 1)⁵

ACM0002 draws upon the following tools which have been used in the PDD:

- Methodological Tool: Tool to calculate the emission factor for an electricity system - Version 07.0(EB 100, Annex 04)⁶
- Methodological Tool: Tool for the demonstration and assessment of additionality - Version 07.0, EB 70 Annex 8⁷

A.4. Crediting period of project

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Start Date of CP: 06/11/2022

End Date of CP: 05/11/2027

Total Length of CP: 15 Years Renewable twice (5 years + 5years + 5 years)⁸

⁵ [AG07ZJQ3EXD42LT5YV9HR16M8KINPO \(unfccc.int\)](https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf)

⁶ [am-tool-07-v7.0.pdf \(unfccc.int\)](https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf)

⁷ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁸ As per section 6.5.1 of GHG Emissions Reduction & Sequestration Product Requirements version 2.1 "Transition project, PoA/CPAs shall follow GS4GG certification cycle for crediting period renewal (e.g. 5 years) in order to issue or convert issued emission reductions to GSVERs under GS4GG."

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

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The project activity involves installation of 70 MW (AC) (87.5 MWp) solar power project at Bhadla, Jodhpur, Rajasthan. The annual average of estimated electricity generation and estimated emission reduction over 5 years of crediting period will be 121,420 MWh/year and 112,980 tCO₂e per year.

Brief description of the installed technology and equipment.

Technical detail of the equipment	Remark
Technology	Solar PV Module
Solar photovoltaic module	First solar series 4TM PV Module
No of Modules	112.5Wp: - 88800, 115Wp: - 587000, 117.5Wp: - 85200
Make	First Solar
Capacity	112.5Wp, 115Wp, 117.5Wp
No of inverters	70
Make	ABB
Capacity	1000KVA
No. of transformers	18 (ITD) + 2 (PT)
Technical & Operational Lifetime	25 years
Cleaning Mechanism	Robotic Cleaning (60MW), Manual Cleaning (10MW)

Relevant dates for the project activity:

31/03/2017 is the date of commissioning of the project activity. The project is commissioned on 31/03/2017 date and supplying generated electricity to INDIAN grid. There were minor breakdowns that have occurred in this monitoring period. Although, no such events have happened during the reported monitoring period, which can alter the applicability of the applied methodology.

B.1.1 Forward Action Requests

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FAR from Design Renewal Review:

FAR # 1: Refer Site Visit and Remote Audit Requirements §3.2.2 "A physical site visit by VVB is mandatory at the next verification of a project"

Response:

As per Site Visit and Remote Audit Requirements and Procedures section 3.2.2, "A physical site visit by VVB is mandatory at the first verification of a project." Since this verification is the first verification under CP2 of the project, the VVB has conducted physical site visit on 07/11/2023.

FAR # 2: 5.1.39: Transparent, annual update reports need to be provided for Projects that have achieved the Project Design Certification stage. An annual report shall be submitted for each monitoring year by end of next calendar year for which verification is not completed. If a verification is in progress but not completed, then an Annual Report is still required by the end of calendar year.

Response:

The project activity has already completed verification and performance review for period till 05/11/2022. The Annual report for the period from 06/11/2022 to 30/09/2023 has been submitted to SustainCERT on 26/12/2023. The annual report dated 26/12/2023 has been submitted to the VVB.

FAR # 3: In-line with GS4GG Principles and Requirements, VVB and PP shall consider the following rule after Design Renewal Certification is achieved: 5.1.29: 1st verification shall be completed within two years after the certification is achieved.

Response:

The Design Renewal Certification was achieved on 17/03/2023. The 1st verification is already initiated in line with the GS4GG Principles and Requirements.

FAR #4: As during the GSRCP of the project activity, Validation team found that crediting period is not in line with the GS mirroring guidelines and under CDM mechanism RCP is still pending. Therefore, FAR has been raised for the upcoming VVB team to ensure that RCP has been done in CDM mechanism too.

Response:

As per section (e) para 5.1.45 of GS4GG Principle & Requirements version 1.2, "To maintain Gold Standard Certified Project status beyond five years, a Project must undergo Design Certification Renewal." As per section 6.5 para 6.5.1 of GHG Emissions Reduction & Sequestration Product Requirements version 2.2, "Transition project,

PoA/CPAs shall follow GS4GG certification cycle for crediting period renewal (e.g. 5 years) in order to issue or convert issued emission reductions to GSVERs under GS4GG.” As the project has already completed its transition to GS4GG and claiming GSVERs, the PP has opted for 5-year renewable cycle with total 15 years of crediting period.

The project is registered under CDM with 7-year renewable crediting period with first crediting period being from 06/11/2017 to 05/11/2024⁹. The project is still valid under CDM but not claiming any CERs. Since the CDM Registry is not accepting any submission for requests for renewal of crediting period relating to the period after 2020 from 30/06/2023¹⁰. The RCP cannot be completed under CDM Mechanism.

B.2. Post-Design Certification changes

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The PP has not requested any Post-Design Certification changes during the current monitoring period.

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

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There is no temporary deviation from certified key project information, Project design document, monitoring & reporting plan, applied methodology or applied standardized baseline.

B.2.2. Corrections

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The PP has not requested for any corrections during current monitoring period. However, the following correction was approved during last performance review:

Total installed DC capacity of the project is 87.5 MWp since commissioning of the project. There has been a typographical error while mentioning the DC capacity in the PDD and the legacy error has been continued in subsequent verifications. However, there is no change in number modules and their capacity. Also, the capacity has also been same i.e. 70 MW from the beginning of the project, which was used to demonstrate the additionality of the project.

⁹ <https://cdm.unfccc.int/Projects/DB/Appendix1506003422.59>

¹⁰ <https://cdm.unfccc.int/Reference/index.html>

PP has now corrected the legacy error and revised the information pertaining to DC capacity as 87.5 MWp under section A.1 and B.1 of the monitoring report. This correction in information does not affect the project design and monitoring plan as well as the additionality of the project.

B.2.3. Changes to start date of crediting period

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There have not been any changes to start date of crediting period.

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

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There has not been any permanent change from registered monitoring plan, applied methodology or applied standardized baseline.

B.2.5. Changes to project design of approved project

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There has not been any change in the PDD during the current monitoring period.

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

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The monitoring plan is developed in accordance with the modalities and procedures for GS project activities and is proposed for grid-connected solar power project implemented in Rajasthan, India. The monitoring plan, which is implemented by the project participant describes the monitoring organization, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving. The responsibility of operation and maintenance of the plant lies with the PP itself i.e. Fortum FinnSurya Energy Private Limited.

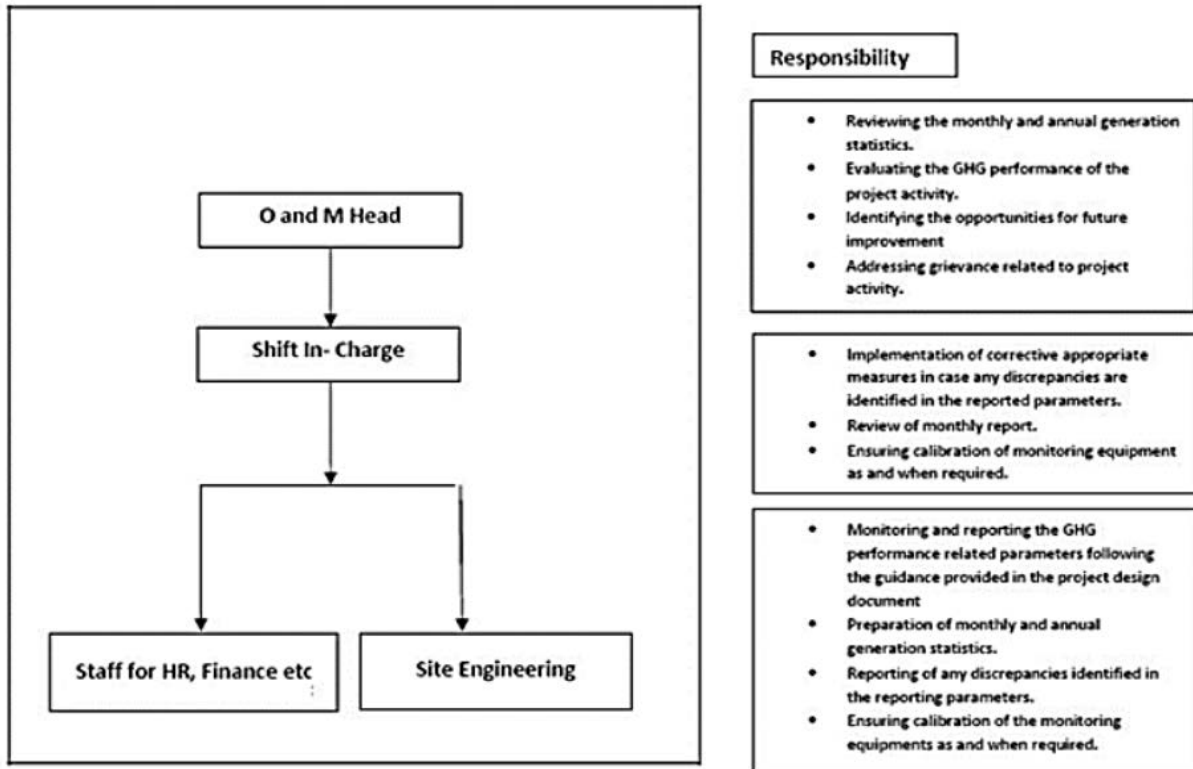
Monitoring data:

The parameters monitored ex-post is the net electricity supplied to the grid ($EG_{PJ,y}$) in the year y .

Measurement Method:

The parameter $EG_{PJ,y}$ will be measured by a main meter installed at 220kV pooling substation (GSS – II) at Bhadla Village. The Check meter and at substation and a Standby meter at plant end are installed in case the main meter fails to work. The on-grid electricity is monitored continuously and recorded monthly. The meters are bi-directional with an accuracy class of 0.2 s. The measurement results are cross-checked with records for sold electricity from the invoices. All data collected as part of the monitoring are archived electronically and kept at least for 2 years after the end of the last crediting period. All meters are calibrated once every five years which is in line with the Central Electricity Authority (Installation & Operation Meters) Regulations, 2006 that requires calibration of meters once every five years.

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:



Data Measurement:

The export and import energy are measured continuously using Main and Check meters located at the substation. The main meter is used for billing purpose and in case of any issues with main meter, check meter would be used. Readings of meters are taken on monthly basis by authorized officer of SEB (State Electricity Board) in this case Jodhpur Vidhyut Vitran Nigam Limited (JDVVNL) and Rajasthan Solarpark Development Company Limited' (RSDCL) in the presence of PP or representative of PP.

Based on the Meter Reading Statement to Fortum FinnSurya Energy Pvt. Ltd, invoices are raised. These invoices are used to cross checking the meter readings taken for the respective project activity.

In case of billing cycle and monitoring period cycle does not match, then daily generation data is used to determine net electricity export for particular period.

Data collection and archiving:

Readings from meters are collected in the presence of the plant in-charge. Export and Import data are 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 GSVERs for the project activity whichever occurs later.

Emergency preparedness

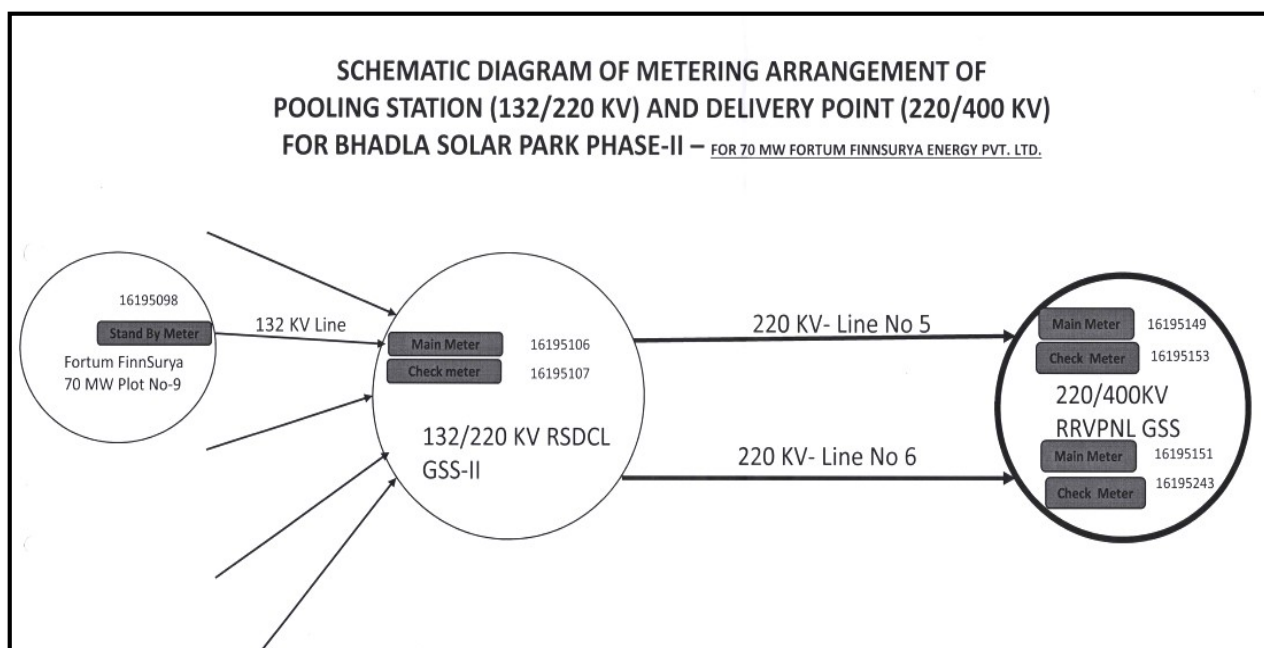
The project activity will not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized.

In case Main meter or Check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter will not be in service as a result of maintenance, repairs or testing, the Check meter will be used for readings. In case both the main and check meter are found to be outside the acceptable limits of accuracy or faulty or not functioning properly, both the meters will be calibrated immediately, and the error percentage found in the main meter during its calibration will be applied to its metered energy data for the entire period since its last calibration to obtain the corrected value of net electricity exported to the grid.

Personnel training

In order to ensure the 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.

The billing meters (main and check meters) are installed at 132/220 KV RSDCL GSS – II pooling station. Schematic Diagram of metering arrangement of pooling station (132/220 KV) and delivery point (220/400 KV) for Bhadla Solar Phase II for 70 MW Fortum Finnsuryia Energy Pvt. Ltd.



Calibration Details:

The calibration details of meters involved in the project activity is as below:

Meter Number	Meter Type	Make	Accuracy Class	Date of calibration	Due Date of next Calibration
16195106	Main Meter	L&T	0.2s	01/03/2021 13/03/2023	12/03/2028
16195107	Check meter	L&T	0.2s	01/03/2021 13/03/2023	12/03/2028
16195098	Standby meter	L&T	0.2s	01/03/2021 13/03/2023	12/03/2028

The meters were calibrated by Darsh Calibrations Private Limited, which is a NABL accredited agency. The frequency of calibration is once in 5 years as per section B.7.1 of the registered GS PDD version 02.¹¹

SECTION D. DATA AND PARAMETERS

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

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Relevant SDG Indicator SDG 13 (Indicators 13.2.1)

¹¹ https://cea.nic.in/old/reports/regulation/CEA_metering_regulation_amendment_2019.pdf

Data/parameter	$EF_{\text{grid, BM, y}}$
Unit	tCO ₂ e/MWh
Description	Build Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 17, October 2021
Value(s) applied	0.8653
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 such the latest value of build margin, 2020-21 is taken. The data are obtained from "CO ₂ BaselineDatabase for Indian Power Sector" version 17, 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.

Relevant SDG Indicator	SDG 13 (Indicators 13.2.1)
Data/parameter	$EF_{\text{grid, OM, y}}$
Unit	tCO ₂ e/MWh
Description	Operating Margin CO ₂ emission factor for NEWNE grid (Now Indian Grid)
Source of data	Calculated from CEA database, Version 17, October 2021 ¹²
Value(s) applied	0.9522
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 2018- 19, 2019-20, & 2020-21. The data are obtained from "CO ₂ Baseline Database for Indian Power Sector" version 17, 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.

Relevant SDG Indicator	SDG 13 (Indicators 13.2.1)
Data/parameter	$EF_{\text{grid, CM, y}}$
Unit	tCO ₂ e/MWh

¹² https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver11.pdf

Description	Combined Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 17, October 2021 ¹³
Value(s) applied	0.9305
Choice of data or Measurement methods and procedures	<p>The combined margin emissions factor is calculated as follows:</p> $EF_{\text{grid, CM, y}} = EF_{\text{grid, OM, y}} * W_{\text{OM}} + EF_{\text{grid, BM, y}} * W_{\text{BM}}$ <p>Where:</p> <p>$EF_{\text{grid, BM, y}}$ = Build margin CO₂ emission factor in year y (tCO₂e/MWh)</p> <p>$EF_{\text{grid, OM, y}}$ = Operating margin CO₂ emission factor in year y (tCO₂e/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

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Relevant SDG Indicator	SDG 13 Climate Action	
Data/parameter	ER _y	
Unit	tCO ₂ e	
Description	Emission reductions achieved per year	
Source of data	Summarized in ER sheet of "GS_5519_ER Sheet". Calculated as per the registered PDD and as per methodology.	
Value(s) applied	121,695	
	Monitoring Period (Vintage)	Values (GSVERs)
	06/11/2022 to 31/12/2022	19,181
	01/01/2022 to 30/09/2023	102,514

¹³ https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver11.pdf

Measurement methods and procedures	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 an emission factor.
Monitoring frequency	As per monitoring period
QA/QC procedures	Not Applicable
Purpose of data	Calculation of emission reduction
Additional comment	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-VERs for this project activity, whichever occurs later.

Relevant SDG Indicator	SDG 7: Affordable and Clean Energy	
Data/parameter	$EG_{PJ,y}$	
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 (70MW)	
Value(s) applied	Monitoring Period (Vintage)	Values (MWh)
	06/11/2022 to 31/12/2022	20,615
	01/01/2022 to 30/09/2023	110,171
	Total	130,786

Measurement methods and procedures

Plant end dedicated metering:
The electricity exported / supplied by the plant is first metered by plant end dedicated meter. This can be considered as stand by meter.

Common metering at the substation:
All the plants (including the project activity solar plant and other investors solar plant) are further connected to a common metering point at Pooling substation 132/220 KV GSS II and further electricity is transferred to 220/400 KV RRVPNL substation. The common metering point consists of both main & check meters (ABT Meters) having accuracy class of 0.2s. The export/import losses between these two substations are apportioned based on pooling substation readings. The difference of final apportioned 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. The details of energy meters are as follows:

Meter	Serial Number	Type	Make	Model	Accuracy Class	Date of calibration
Main Meter	16195106	3phase 4wire	L&T	ER300P	0.2s	13/03/2023
Check meter	16195107	3phase 4wire	L&T	ER300P	0.2s	13/03/2023
Standby meter	16195098	3phase 4wire	L&T	ER300P	0.2s	13/03/2023

Monitoring frequency

Continuous measurement & monthly recording.

QA/QC procedures

The meters are approved, tested & sealed by the State Utility. The meters are in the custody of the State Utility. The frequency of calibration is once in 5 years. 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 and apportioning approach

	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.
Purpose of data	Calculation of baseline emissions
Additional comment	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-VERs for this project activity, whichever occurs later.

Relevant SDG Indicator	SDG 8: Decent Work and Economic Growth																		
Data/parameter	Quantitative employment and income generation																		
Unit	Number																		
Description	Number of people employed directly due to the project activity. Number of men and number of women employed by the project activity. Type of job like temporary/permanent or skilled/unskilled, etc also monitored and it is ensured that peoples will get equal payment for equal work.																		
Source of data	Plant records / Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc																		
Value(s) applied	<table border="1"> <thead> <tr> <th>Monitoring Period (Vintage)</th> <th>Total</th> <th>Skilled</th> <th>Semi-skilled</th> <th>Unskilled</th> </tr> </thead> <tbody> <tr> <td>06/11/2022 to 31/12/2022</td> <td>01</td> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>01/01/2022 to 30/09/2023</td> <td>02</td> <td>0</td> <td>2</td> <td>0</td> </tr> </tbody> </table> <p>Above number of jobs are permanent and full time in nature. The number of employees mentioned above are only the number of employees hired during the current monitoring period. However, there are a total of 36 employees working in the plant during the current Monitoring Period. Additional short-term services create temporary jobs. Females are not employed at the site until now. Females are employed at the Head and corporates offices.</p> <p>As per minimum wages notification, 2022 by Department of Labour Rajasthan dated 20/07/2022¹⁴, the workers in Rajasthan under schedule – I, s. no. 24 are required to be</p>				Monitoring Period (Vintage)	Total	Skilled	Semi-skilled	Unskilled	06/11/2022 to 31/12/2022	01	0	1	0	01/01/2022 to 30/09/2023	02	0	2	0
Monitoring Period (Vintage)	Total	Skilled	Semi-skilled	Unskilled															
06/11/2022 to 31/12/2022	01	0	1	0															
01/01/2022 to 30/09/2023	02	0	2	0															

¹⁴ <https://labour.rajjasthan.gov.in/notification.aspx>

	<p>paid minimum wages as mentioned below:</p> <ul style="list-style-type: none"> • Unskilled Workers - 259 INR per day or 6734 INR per month • Semi-skilled Workers - 271 INR per day or 7046 INR per month • Skilled Workers – 283 INR per day or 7358 INR per month • Highly Skilled Workers - 333 INR per day or 8658 INR per month <p>However, the income to all the workers in the project is made better than the minimum wage requirements: 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled). 9734</p>
Measurement methods and procedures	<p>The total number of persons working in the plant would be calculated based on the daily log available at site. This parameter also monitors number of men/women employed by the project activity. The project activity ensures that “equal pay for work of equal value” for both men and women and there is not any discrimination against women.</p> <p>"The employment covers number of men and number of women employed by the project activity. The job is of type temporary/permanent or skilled/unskilled, etc. Also, it is ensured that 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. The employment generated refers to overall jobs created during project implementation and during project Operation and Maintenance. This is primary and direct effect on employment generated due to project activity. The effect of employment generation is not 'one off' or an effect generated in design, construction, distribution or start-up or decommissioning of the Project.</p>
Monitoring frequency	Monthly monitoring and annual compilation
QA/QC procedures	The number of persons employed would be mentioned in the plant register, which can be crossed checked with attendance register.
Purpose of data	To Monitor the SDG 8 Indicator
Additional comment	-
Relevant SDG Indicator	SDG 8: Decent Work and Economic Growth
Data/parameter	Quality of Employment
Unit	Number

Description	Training of staff	
Source of data	The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc	
Value(s) applied	35 trainings	
	Monitoring Period (Vintage)	Trainings
	06/11/2022 to 31/12/2022	06
	01/01/2022 to 30/09/2023	29
	Total	35
Measurement methods and procedures	Together with the technology supplier, the Project organize training for the staff on the technology and 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	-	

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

>>

Not applicable for non- Community Service Activities

D.4. Implementation of sampling plan

>>

Sampling is not required.

SECTION E. CALCULATION OF SDG IMPACTS

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

>>

SDG 13 Climate Action:

As per equation 11 under section 5.5, para 44 of the applied methodology ACM0002 version 20.0, the baseline emissions are to be calculated as follows:

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

Where,

BE_y = Baseline emissions in year y (tCO₂/yr)

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

$EF_{grid, CM, y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh).
= 0.9305 tCO₂/MWh

Hence,

$$\begin{aligned} BE_y &= 130,786 * 0.9305 \\ &= 121,695 \text{ (Round down value)} \end{aligned}$$

Thus, the estimated baseline situation of each SDG outcome are summarised as follows;

SDGs	Baseline value
SDG 7: Affordable and Clean Energy	No Activities in the baseline
SDG 8: Decent Work and Economic Growth	No Activities in the baseline
SDG 13: Climate Action	Emission of 121,695 tCO ₂ e

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

>>

SDG 7:

The monitoring parameter for the SDG 7 is Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh. In the project situation,

the project supplied 130,786 MWh electricity during the current monitoring period. This can be crosschecked from JMR & Invoices.

During Monitoring period – 06/11/2022 to 30/09/2023

Quantity of net electricity supplied to the grid (MWh) = 130,786 MWh

SDG 8:

The monitoring parameters for SDG 8 are Quality of employment (number of trainings provided to employees & O&M staff), Quantitative employment (number of people employed on the project) and income generation (Salary given to the employees).

During the project scenario, the following is achieved:

During Monitoring period - 06/11/2022 to 30/09/2023

Quality of Employment – 35 trainings

Quantitative employment and income generation - 03 new employees & The income to all the workers is made better than the minimum wage requirements¹⁵: 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled)

These can be crosschecked from the training records & employment records.

SDG 13:

As per the Section 5.4, Para 31 of the applied Methodology ACM0002 version 20.0, "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)

¹⁵ <https://labour.rajasthan.gov.in/notification.aspx>

As per minimum wages notification, 2022 by Department of Labour Rajasthan dated 20/07/2022, the workers in Rajasthan under schedule – I, s. no. 24 are required to be paid minimum wages as mentioned below:

5. Unskilled Workers - 259 INR per day or 6734 INR per month
6. Semi-skilled Workers - 271 INR per day or 7046 INR per month
7. Skilled Workers – 283 INR per day or 7358 INR per month
8. Highly Skilled Workers - 333 INR per day or 8658 INR per month

$PE_{GP,y}$ = Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y (tCO₂e/yr)

$PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year y (tCO₂e/yr)"

For most renewable energy power generation project activities, $PE_y = 0$

As the project activity is the installation of a new grid-connected Solar power plant/unit 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, $PE_y = 0$.

E.3. Calculation of leakage

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As per section 5.6 of the applied methodology ACM0002 version 20.0, "No other leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport etc.) are neglected." Hence, No leakage emissions are applicable.

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

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
SDG 13	Climate Action	121,695 tCO ₂ e	0 tCO ₂ e	121,695 tCO ₂ e
SDG 7	Affordable and Clean Energy	0 MWh	130,786 MWh	130,786 MWh
SDG 8	Decent Work and Economic Growth	0 Employees 0 Trainings	Total 03 new people employed, 35 training conducted and The income to all the workers is made better than the minimum wage requirements : 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled)	Total 03 new people employed, 35 training conducted and The income to all the workers is made better than the minimum wage requirements : 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled)

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 achieved during this monitoring period
SDG 7	121,420 MWh/Year (365 days) 109,444 MWh for the Monitoring period (329 days)	130,786 MWh
SDG 8	1 training/year 10 Employees	35 Trainings 03 New Employees The income to all the workers is made better than the minimum wage requirements ¹⁶ : 384 INR/day (unskilled), 423 INR/day (semiskilled), 486 INR/day (skilled) and 612 INR/day (highly skilled).
SDG 13	112,980 tCO ₂ /Year (365 days) 101,836 tCO ₂ for the monitoring period (329 days)	121,695 tCO ₂ e

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

>>

SDG 13 Climate Action

As per the registered GS PDD, 112,980 tCO₂e is the amount of GSVER generated annually. The total number of days in this monitoring period is 329. Therefore, following unitary method, the estimated emission reduction to be achieved from the project activity for the current monitoring period is:

$$= (112,980 / 365) * 329$$

$$= 101,836 \text{ tCO}_2\text{e}$$

SDG 7: Affordable and Clean Energy

As per GS PDD, 121,420 MWh is the estimated amount of electricity generated annually. The total number of days in this monitoring period is 329. Therefore, following unitary

¹⁶ <https://labour.rajasthan.gov.in/notification.aspx>

As per minimum wages notification, 2022 by Department of Labour Rajasthan dated 20/07/2022, the workers in Rajasthan under schedule – I, s. no. 24 are required to be paid minimum wages as mentioned below:

9. Unskilled Workers - 259 INR per day or 6734 INR per month
10. Semi-skilled Workers - 271 INR per day or 7046 INR per month
11. Skilled Workers – 283 INR per day or 7358 INR per month
12. Highly Skilled Workers - 333 INR per day or 8658 INR per month

method, the electricity generated from the project activity for the current monitoring period is:

$$= (121,420 / 365) * 329$$

$$= 109,444 \text{ MWh}$$

SDG 8: Decent Work and Economic Growth

Annual estimate has been considered for SDG i.e., 10 persons employment and minimum 1 training. The income to all the unskilled workers is made on day-to-day basis better than the minimum wage requirements.

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

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SDG 13:

The actual emission reductions achieved during the current monitoring period are 19.50% higher than the estimated ERs for the same period i.e. there is an increase in ex-post emission reductions. The variable due to which the emission reduction is increasing is higher Plant Load Factor (PLF). Based on the estimated Plant Load Factor (PLF) as per the Project Design Document (PDD), the expected PLF was 20%. However, during the monitoring period, the actual PLF achieved was 23.66%. This indicates an increase in PLF of 18.31%. According to the registered PDD, there is a breaching value of Sensitivity set at 23.94% increase in PLF. The increases in PLF is well below the breaching value and the higher generation observed, is attributed to more sunshine hours and irradiance. Therefore, higher generation was influenced by factors beyond the control of the project participant.

Please be informed that being the site in sand dune area, the distortion rate of the panel is very high, and it is highly unrealistic to have this much PLF value in further monitoring periods.

SDG 7:

The actual net electricity generation achieved is 130,786 MWh which is approximately 19.5 % Higher than the estimated generation as per the registered PDD and is within the sensitivity range (i.e. 23.94% increase in PLF). The higher generation observed, is attributed to more sunshine hours and irradiance.

SECTION F. SAFEGUARDS REPORTING

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No safeguarding principles were added to the monitoring plan in the registered GS PDD. Therefore, the relative success and failures, or improvements to proposed mitigation measures is not applicable.

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.

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As a part of continuous feedback from stakeholders, the grievances register is being placed at site and is being continuously monitored and addressed through the grievances cell on regular basis and maintained in a register at site office. During the monitoring period no grievances have been received, the comments received are satisfactory and appreciating in nature. The scan copies have been provided to the VVB.

S. No.	Date of Complaint	Topic	Date of resolution	Remark from PP
-	-	-	-	-

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

>>

Not Applicable as there were no negative feedback logged during the monitoring period.

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

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Not Applicable as there were no legal contest that has arisen with the project during the monitoring period

Revision History

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