

TEMPLATE

MONITORING REPORT

PUBLICATION DATE **14.10.2020**

VERSION **v. 1.1**

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

This document contains the following Sections

Key Project Information

SECTION A - Description of project

SECTION B - Implementation of project

SECTION C - Description of monitoring system applied by the project

SECTION D - Data and parameters

SECTION E - Calculation of SDG Impacts

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KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	GS7525
Title of the project (s) covered by monitoring report	BIM Solar Farm
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	07
Version number of the monitoring report	05
Completion date of the monitoring report	26/10/2023
Date of project design certification	02/03/2020
Date of Last Annual Report	01/09/2022
Monitoring period number	02
Duration of this monitoring period	01/06/2021 – 28/02/2023 (Inclusive both dates)
Project Representative	BIM Renewable Energy Joint Stock Company (BIMRE) – Vietnam BIM Energy Joint stock Company (BIME) – Vietnam
Host Country	Vietnam
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Methodology (ies) applied and version number	ACM0002: Grid-connected electricity generation from renewable sources (Version 19.0)
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 7	Affordable and clean energy	1,028,732	MWh
SDG 8	Decent work and economic growth	79	Number
SDG 13	Climate action	873,597	tCO ₂ or GS-VER

Table 2 – Product Vintages

		Amount Achieved		
Start Dates	End Dates	SDG 7	SDG 8	SDG 13
01/06/2021	31/12/2021	321,951 MWh	79	273,400 tCO ₂ or GS-VER
01/01/2022	31/12/2022	614,610 MWh	79	521,926 tCO ₂ or GS-VER
01/01/2023	28/02/2023	92,171 MWh	79	78,271 tCO ₂ or GS-VER

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

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BIM Group (Vietnam) is implemented "BIM Solar Farm" (hereafter referred as "Proposed project" or "Project activity") with a total installed capacity of 405 MWp, which comprises of three solar plants as follows:

Plant Name	Location	Capacity (MWp)
18N +18NX	Phuoc Ninh Commune	250 + 75
18S	Highway 1A, Lac Tien Hamlet, Phuoc Minh Commune	50
18E	Highway 1A, Quan The Hamlet, Phuoc Minh Commune	30
Total		405

All the above plants are located at Thuan Nam District, Ninh Thuan Province, Vietnam. The legal owner of 18N+NX & 18S is BIM Renewable Energy Joint Stock Company (BIMRE) and the 18E is BIM Energy Joint stock Company (BIME). Both BIMRE and BIME are the brands belonging to BIM Group (Vietnam).

The primary goal of the project activity is to generate green & clean electricity through solar energy. The project activity started to operate in May 2019 with the total installed capacity of 330MW as follows:

Plant Name	Date of COD	Source of Document
18N (250 MW)	11/05/2019	Agreement on Operation date (14/05/2019)
18S (50 MW)	07/05/2019	Agreement on Operation date (14/05/2019)
18E (30 MW)	23/04/2019	Agreement on Operation date (04/05/2019)

An additional 75 MW (also called 18NX) as an expansion of existing facility was started to operate on 24/12/2020 onwards as per the agreement signed on 28/12/2020.

The electricity generated by the project activity is supplied to the national grid. The project activity replaces anthropogenic emissions of Greenhouse Gases (GHGs) by displacing equivalent amount of electricity from fossil fuel-based power plants connected to the Vietnam's national grid.

During this monitoring period (from 01/06/2021 to 28/02/2023), the emission reduction achieved by the project activity is 873,597 tCO₂.

A.2. Location of project

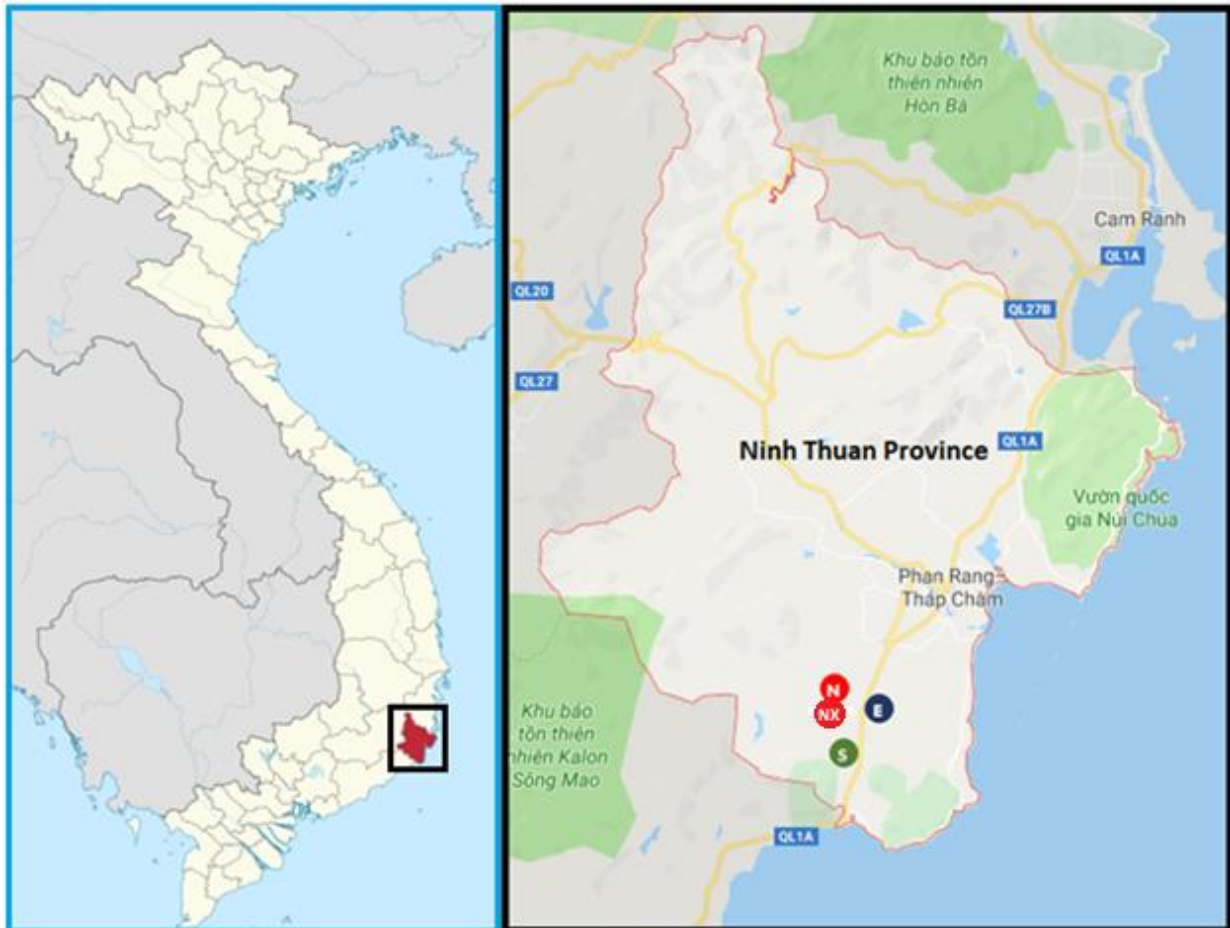
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Host Country: Vietnam

Province: Ninh Thuan

District: Thuan nam

Communes: Phuoc Ninh & Phuoc Minh



A.3. Reference of applied methodology

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The selected approved methodology as follows:

Scope No : 1

Sectoral Scope : Energy industries (renewable - / non-renewable sources)

Title : ACM0002: Grid-connected electricity generation from renewable sources

Version : 19

Validity : 31 August 2018 onwards

A.4. Crediting period of project

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Renewable crediting period.

Renew every 5 years for 15 years as follows:

CP-01: 02/06/2019 – 01/06/2024

CP-02: 02/06/2024 – 01/06/2029 (Subject to renewal of CP before due date)

CP-03: 02/06/2029 – 01/06/2034 (Subject to renewal of CP before due date)

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

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The technology being employed is a conversion of solar energy into electrical energy. The project activity is the installation of an environment friendly green technology since there are no GHG emissions associated with the electricity generation. Since this is a greenfield project there was no electricity generation at the project site prior to its implementation. The technical specifications¹ of equipment as follows:

General Information			
Plant Name	18E	18N + 18NX	18S
Total Capacity	30MW	250 + 75 MW	50MW
Number of Inverter Stations	8	58+18	12
Number of Inverters	16	116 + 36	24
Total Number of Modules	90,990	754,320 + 187,544	153,900

Technical Specifications of PV Modules					
Model	TSM-325PE14A	TSM-330PE14A	JAP72S01-325/SC	JAP72S01-330/SC	JKM400M-72H-V
Type	Multi-crystalline	Multi-crystalline	Poly-crystalline	Poly-crystalline	Mono-crystalline
Max Power (Pmax)	325	330	325	330	400
Efficiency (%)	16.7	17	16.7	17.0	19.88

Technical Specifications of Inverters	
Model	SG3125HV
Max. PV Input Voltage	1500V
Max Efficiency / Euro. Efficiency	99.0% / 98.7%
Operating Ambient Temperature range	-35 ⁰ to 60 ⁰ C
Cooling Method	Temperature controlled forced air cooling

¹ Suppliers' specifications / data sheet

The average lifetime of the project is 25 years as per the equipment supplier's specifications.

The project activity is registered/design certified under Gold Standard on 02/03/2020 and the design change was completed on 06/09//2021.

Several incidents (listed in Annex 1) occurred during this monitoring period that partially disrupted the operation of the plant. However, no event could impact on the applicability of GS requirements.

The first monitoring period covers from 02/06/2019 to 31/05/2021. In this report, the second monitoring report covers 01/06/2021 to 28/02/2023.

B.1.1 Forward Action Requests

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No FAR has been raised during the 1st verification and thereby not applicable.

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

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Not Applicable

B.2.2. Corrections

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Not Applicable

B.2.3. Changes to start date of crediting period

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Not Applicable

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

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Not Applicable

B.2.5. Changes to project design of approved project

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Not Applicable

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

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Monitoring data is collected in accordance with the agreement done between the project owner and Vietnam Electricity Corporation (EVN) which provides the infrastructure for the connection to the national grid. Data will be stored electronically, during the crediting period and at least two years after the last issuance of credits for the solar power project activity in the concerning crediting period. The Project Participant will be responsible for storage of data received from the measuring devices.

Monitoring procedures

All the installed electricity meters (refer Annex 2 for metering layout) have an internal memory that can be stored 18 months of monitored data. The electricity meters will obtain hourly data and send to the historical server located at HV substation control room on a daily basis. The data can be downloaded from the computer at control room through web-based dashboard installed by EVN. The data will be monitored by the assigned operator at control room during 5am to 6pm and the EVN who can see the data remotely from their location. There will be no data after sunset and the inverter turn in to standby mode. The operator will collate and compile all operational data on a monthly basis and send to plant operation manager. The operation manager will verify the data and send to top management for endorsement before proceeding to billing to power purchaser.

Period of archiving

The data will be archived electronically every hour in meters and the meters will send the data to historical server on a daily basis. Monthly data can be downloaded for billing purposes.

Calibration of equipment

The calibration of electricity meters will be done as per supplier recommendation by an independent accredited third party. However, the main tariff meters are validated

by EVN as per their requirement once in three years interval. The relevant calibration certificates are available for GS-VVB review. The meters' specifications are as follows:

Plant Name	Brand	Model	Accuracy Class	Number of Meters
18N, 18NX & 18S	Elster	A1700	Tariff Meter: 0.2	15 (18N), 10 (18NX) & 9 (18S)
18E	Landis+Gyr	E650 Series 3	Others: 0.5	7 (18E)

The calibration certificates of the meters are provided to GS-VVB during the verification. The dates of calibrations are as follows:

Plant Name	Meter Number	Calibration Dates		
		2021	2022	2023
18E	131 Main	16/04/2021	16/02/2022	22/02/2023
	131 Backup			
18N	275 Main	Not Available*	16/02/2022	24/02/2023
	275 Backup			
18S	272 Main	17/04/2021	17/02/2022	22/02/2023
	272 Backup			

Note: *Due to pandemic, PO requested to postpone the meter verification to EVN. EVN's approval letter (meter inspection letter for 2022) submitted for verification.

QC/QA

The monitored data will be provided to GS consultant on a yearly basis for the calculation and estimation of emission reductions to prepare the annual report. This data will be checked against the billing to EVN.

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: Climate Action
Data/parameter	$EF_{grid,OM,y}$
Unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor for the electricity system in year y
Source of data	National electricity system regulation centre
Value(s) applied	0.8336
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" by using the latest data available for the past three recent years 2015, 2016 and 2017. The Ministry of Natural Resource and Environment (MONRE) has obtained the historical data from "National electricity system regulation centre" and calculated the emission factor.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	–

Relevant SDG Indicator	SDG 13: Climate Action
Data/parameter	$EF_{grid,BM,y}$
Unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor for the electricity system in year y
Source of data	National electricity system regulation centre
Value(s) applied	0.8961
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" by using the latest data available for the past three recent years 2015, 2016 and 2017. The Ministry of Natural Resource and Environment (MONRE) has obtained the historical data from "National electricity system regulation centre" and calculated the emission factor.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	–

Relevant SDG Indicator	SDG 13: Climate Action
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Data/parameter	$EF_{grid,CM,y}$
Unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor for the electricity system in year y
Source of data	National electricity system regulation centre
Value(s) applied	0.8492
Choice of data or Measurement methods and procedures	The combined margin emissions factor is calculated as per Tool 7, paragraph 86 a), where the different weightage applied for OM & BM emission factors for the solar power generation project activities: $EF_{grid,CM,y} = (EF_{grid,OM,y} \times W_{OM}) + (EF_{grid,BM,y} \times W_{BM})$ Where: $EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year y (tCO₂/MWh) $EF_{grid,OM,y}$ = Operating margin CO₂ emission factor in year y (tCO₂/MWh) WOM = Weighting of operating margin emissions factor (%) = 75% WBM = Weighting of build margin emissions factor (%) = 25%
Purpose of data	For the calculation of the Baseline Emission
Additional comment	–

D.2 Data and parameters monitored

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Relevant SDG Indicator	7.2.1 – Renewable energy share in the total final energy consumption																						
Data / Parameter	Gross Power Generation																						
Unit	MWh/yr																						
Description	Quantity of gross electricity generated and supplied by the project power plant to the grid in year y																						
Source of data	Standard metering of the net electricity supplied to the grid as indicated in the Power Purchase Agreement (PPA)																						
Value(s) applied	<table><tr><th rowspan="2">Monitoring Period</th><th colspan="3">Generation in MWh</th></tr><tr><th>18E</th><th>18N+NX</th><th>18S</th></tr><tr><td>01/06/2021 – 31/12/2021</td><td>21,621</td><td>259,337</td><td>40,933</td></tr><tr><td>01/01/2022 – 31/12/2022</td><td>39,281</td><td>496,886</td><td>78,443</td></tr><tr><td>01/01/2023 – 28/02/2023</td><td>5,833</td><td>74,731</td><td>11,607</td></tr></table>				Monitoring Period	Generation in MWh			18E	18N+NX	18S	01/06/2021 – 31/12/2021	21,621	259,337	40,933	01/01/2022 – 31/12/2022	39,281	496,886	78,443	01/01/2023 – 28/02/2023	5,833	74,731	11,607
Monitoring Period	Generation in MWh																						
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01/01/2023 – 28/02/2023	5,833	74,731	11,607																				

	Total	1,028,732
Measurement methods and procedures	Electricity generated is monitored by the electricity meters on a continuous basis and readings will be taken every month for billing purpose. The meters have the capability to store 18 months of data as well as transfer them to historical server which is located in the HV substation control room. It can be downloaded on a monthly basis for billing purpose. The computer has a web-based software where the data can be seen by the Vietnam Electricity (ENV) remotely. Archive of the data would be available for entire lifetime of the project.	
Monitoring frequency	Continuous measurement with daily recording (The meters can capture half hourly generation data and the data would be logged through the SCADA system in a daily basis. However, readings will be downloaded on a monthly basis for record keeping and billing to the EVN.)	
QA/QC procedures	The main tariff meters are validated by EVN as per their requirement once in three years interval. The electricity generation can also be cross-checked using the invoices billed to EVNEPTC for payment	
Purpose of data	Calculation of baseline emissions to demonstrate contribution to SDG7'-7.2 By 2030, increase substantially the share of renewable energy in the global energy mix"	
Additional comment	None	

Relevant SDG Indicator	7.2.1 – Renewable energy share in the total final energy consumption																					
Data / Parameter	Auxiliary Power Consumption																					
Unit	MWh/yr																					
Description	Quantity of electricity consumed by the project electricity consumption source j in year y																					
Source of data	Direct measurement by electricity meters																					
Value(s) applied	<table border="1"> <thead> <tr> <th rowspan="2">Monitoring Period</th><th colspan="3">Consumption in MWh</th></tr> <tr> <th>18E</th><th>18N+NX</th><th>18S</th></tr> </thead> <tbody> <tr> <td>01/06/2021 – 31/12/2021</td><td>127</td><td>1,344</td><td></td></tr> <tr> <td>01/01/2022 – 31/12/2022</td><td>215</td><td>2,228</td><td></td></tr> <tr> <td>01/01/2023 – 28/02/2023</td><td>35</td><td>374</td><td></td></tr> </tbody> </table>			Monitoring Period	Consumption in MWh			18E	18N+NX	18S	01/06/2021 – 31/12/2021	127	1,344		01/01/2022 – 31/12/2022	215	2,228		01/01/2023 – 28/02/2023	35	374	
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	<table> <tr> <td>Total</td><td>4,324</td></tr> </table>	Total	4,324
Total	4,324		
Measurement methods and procedures	Electricity consumption by the project plant is monitored by the electricity meters on a continuous basis and readings have been taken every month for billing purpose. The main meter is acting like a two-way (bi-directional) meter and therefore capture electricity consumption as well as transfer them to server which is located in the HV substation control room. It can be downloaded on a monthly basis for billing purpose. Archive of the data would be available for entire lifetime of the project.		
Monitoring frequency	The meters can capture half hourly data and the data would be logged through the SCADA system in a daily basis. However, readings will be taken on a monthly basis for record keeping and billing to the EVN.		
QA/QC procedures	Continuous measurement with daily recording (The meters can capture half hourly generation data and the data would be logged through the SCADA system in a daily basis. However, readings will be downloaded on a monthly basis for record keeping and billing to the EVN.)		
Purpose of data	Calculation of project emissions to demonstrate contribution to SDG7'-7.2 By 2030, increase substantially the share of renewable energy in the global energy mix"		
Additional comment	None		
Relevant SDG Indicator	8.5.1 – Average hourly earnings of female and male employees, by occupation, age and persons with disabilities		
Data / Parameter	Employees' monthly wages		
Unit	Vietnam Dong per employee		
Description	Monthly wages to all employees by the project activity		
Source of data	Job contracts (or) Pay slip (or) Payroll records		
Value(s) applied	Detailed spreadsheet provided to GS-VVB contains hourly wages based on the employees': 1. Age 2. Position 3. Gender		
Measurement methods and procedures	Randomly choose employees with similar designation from payroll records and compare their wages and experience		

Monitoring frequency	Once for each monitoring period
QA/QC procedures	Payroll records, job contracts and staff register are provided annually. After first verification, only changes in employees are reported.
Purpose of data	To demonstrate contribution to SDG8 – 8.5 “By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value’
Additional comment	None

Relevant SDG Indicator	8.8.1 – Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status
Data / Parameter	No of Fatal & Non-fatal injuries
Unit	Number
Description	Total number of employees injured during the operation and maintenance period of project activity
Source of data	Health & Safety issues records
Value(s) applied	0
Measurement methods and procedures	The total number of Health and Safety training based on Training Records or Certificates
Monitoring frequency	Once for each monitoring period
QA/QC procedures	Accident or incident records are provided.
Purpose of data	Monitoring the health and safety records of employees to demonstrate contribution to SDG8 – 8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment
Additional comment	None

Relevant SDG Indicator	13.3.2 – Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions
Data / Parameter	No of awareness programmes
Unit	Number
Description	Provide awareness trainings regarding the climate change and mitigation measures

Source of data	Training records include attendance register or photos of training											
Value(s) applied	<table><tr><th>Year</th><th>No of Trainings</th><th>No of Attendees</th></tr><tr><td>2021</td><td>1 (Fire Prevention)</td><td>14</td></tr><tr><td>2022</td><td> 4 (First Aid & Fire Fighting) 1 (Dealing with Poisonous Snake) 9 (Technical & Safety Training) 9 (Electrical Safety) 1 (Safety on Working from Heights) </td><td>5 - 50</td></tr></table>			Year	No of Trainings	No of Attendees	2021	1 (Fire Prevention)	14	2022	4 (First Aid & Fire Fighting) 1 (Dealing with Poisonous Snake) 9 (Technical & Safety Training) 9 (Electrical Safety) 1 (Safety on Working from Heights)	5 - 50
Year	No of Trainings	No of Attendees										
2021	1 (Fire Prevention)	14										
2022	4 (First Aid & Fire Fighting) 1 (Dealing with Poisonous Snake) 9 (Technical & Safety Training) 9 (Electrical Safety) 1 (Safety on Working from Heights)	5 - 50										
Measurement methods and procedures	The training records include attendance registers and photos are available to measure the level of awareness program conducted for local communities and others											
Monitoring frequency	Once for each monitoring period											
QA/QC procedures	None											
Purpose of data	Monitoring the awareness programs conducted will help to demonstrate the contribution to SDG13 – 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning											
Additional comment	None											

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

Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period
Not Applicable		

D.4. Implementation of sampling plan

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Not Applicable

SECTION E. CALCULATION OF SDG IMPACTS

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

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SDG 7 – Affordable & Clean Energy

The baseline outcome is zero.

SDG 8 – Decent work & Economic Growth

The baseline outcome is zero.

SDG 13 – Climate Action

AS per ACM0002 (Version 19.0), the baseline emissions are to be calculated as follows:

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

Where:

BE_y = Baseline emissions in year y (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 CDM 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 "TOOL07: Tool to calculate the emission factor for an electricity system" (tCO₂/MWh)

Based on the monitored data, the computation of Baseline emission as follows:

Symbol	Unit	Jun-Dec 2021	Jan-Dec 2022	Jan-Feb 2023
$EG_{PJ,grid,y}$	MWh	321,951	614,610	92,171
$EF_{grid,CM,y}$	tCO ₂ /MWh		0.8492	
BE_y	tCO ₂	273,400	521,926	78,271
Total			873,597	

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

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SDG 7 – Affordable & Clean Energy

The project activity has the capacity to produce 671,195 MWh per annum. The total affordable and clean energy generated by project activity is 1,028,732 MWh during this monitoring period. The breakdown of energy generation as follows:

Monitoring Period	Clean Energy (MWh)	Total
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	18E	18N+NX	18S	
01/06/2021 – 31/12/2021	21,621	259,337	40,993	321,951
01/01/2022 – 31/12/2022	39,281	496,886	78,443	614,610
01/01/2023 – 28/02/2023	5,833	74,731	11,607	92,171
Total	321,951	614,610	92,171	1,028,732

SDG 8 – Decent work & Economic Growth

The project activity provided employment opportunities which would not have been possible in the baseline scenario. A total of 155 jobs are created. The type of jobs created for local community includes engineer, supervisor, technician, cleaner and driver. The local community recruited in the basis of educational qualifications and prior experience in the same field. Those with education qualification with no experience was sent through skill development training before commencement of work. In addition, providing regular training (minimum 1 training per annum) to the employees for improving their skills. The list of employees and training records will be shown to GS-VVB.

Summary of SDG 8 impact are as follows:

Year	No of Jobs created	Training Information	
		No of Trainings	No of staffs attended
2021	79	1 (Fire Prevention)	14
		4 (First Aid & Fire Fighting)	6 - 32
		1 (Dealing with Poisonous Snake)	50
2022	79	9 (Technical & Safety Training)	8 - 10
		9 (Electrical Safety)	9
		1 (Safety on Working from Heights)	5

SDG 13 – Climate Action

As per ACM0002 (Version 19.0), paragraph 34, the project emission for the solar power project is zero.

E.3. Calculation of leakage

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No leakage emissions are considered as per the chosen methodology ACM0002, V19.

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

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
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7	Affordable & Clean Energy	0	1,028,732 MWh	1,028,732 MWh
8	Decent Work & Economic Growth	0	Job created: 79 Trainings conducted: 25	Job created: 79 Trainings conducted: 25
13	Climate Action	873,597 tCO ₂		873,597 tCO₂

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 ² achieved during this monitoring period
7	1,174,592 MWh	1,028,732 MWh
8	Jobs: 82 Training: 2	Jobs: 79 Training: 25
13	997,463 tCO ₂	873,597 tCO ₂

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

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SDG 7 – Affordable & Clean Energy

Year	Ex ante calculation approved PDD for this monitoring period	Remarks
2021	$(671,195 \div 12 \text{ months}) \times 7 \text{ months} = 391,530 \text{ MWh}$	Crediting period start date: 2 June 2021 Estimated power generation: 671,195 MWh/year
2022	671,196 MWh	

² Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

2023	$(671,195 \div 12 \text{ months}) \times 2$ months = 111,866 MWh
Total	1,174,592 MWh

SDG 8 – Decent work & Economic Growth

No calculations are involved to estimate the SDG 8 outcome as the values provided in the approved PDD are based on the actual data available at the time of registration.

SDG 13 – Climate Action

Year	Ex ante calculation approved PDD for this monitoring period	Remarks
2019	$(569,979 \div 12 \text{ months}) \times 7$ months = 332,488 tCO ₂	
2020	569,979 tCO ₂	Crediting period start date: 2 June 2021
2021	$(569,979 \div 12 \text{ months}) \times 2$ months = 94,997 tCO ₂	Estimated emission reduction: 569,979 tCO ₂ /year
Total	997,463 tCO₂	

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

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The actual power generation and emission reduction are less than the estimated in the approved PDD and thereby it is not applicable.

SECTION F. SAFEGUARDS REPORTING

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As per section D.1 of approved PDD, no safeguarding principle needed mitigation measures other than the "3. Community Health, Safety & Working conditions". The mitigation measure is conducting the safety trainings for the employees regularly during the project operation.

The project activity is conducting minimum 1 safety training per year for the employee. 25 trainings were conducted in 2021 and 2022.

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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During the current monitoring period, no comments were received through grievance mechanism in place as follows:

Methods	Descriptions
Continuous Input / Grievance Expression Process Book	The process book is located at the site office (floor 1, BIM Salt JSC, Highway 1A, Quan The Hamlet, Phuoc Minh Commune, Thuan Nam District, Ninh Thuan Province, Vietnam) as per stakeholders' suggestion.
Telephone access	Project Proponent: Mr. Nguyen Phuong Trung (BIM Group) +84 936656694
Internet/email access	Project Proponent: Mr. Nguyen Phuong Trung trung.np@bimgroup.com Gold Standard: info@goldstandard.org

Location of the grievance book is placed on the notice board of the site office.





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

>>

None was agreed to monitor and thereby not applicable.

>>

No legal contest was raised with project during the monitoring period thereby not applicable.

Annex 1 – Breakdown History during this Monitoring Period**18E (30MW)**

Month	Incidents	Estimated Energy Loss (MWh)
July 2021	▪ EVN Curtailment	478
August 2021	▪ EVN Curtailment ▪ Inverter 1E1 has been low insulation impedance fault	718
September 2021	▪ EVN Curtailment ▪ Inverter 1E2 has been low insulation fault ▪ Inverter 2E1 has been GFDI fault ▪ Inverter 1E1 has been low insulation fault	615
October 2021	▪ EVN Curtailment ▪ Inverter 4E2 has been PDP-pro fault	632
November 2021	▪ EVN Curtailment	385
December 2021	▪ EVN Curtailment ▪ Inverter 1E2 has been low insulation fault	725
January 2022	▪ EVN Curtailment	929
February 2022	▪ EVN Curtailment ▪ 110kV transmission line has been blackout	925
March 2022	▪ EVN Curtailment	726
April 2022	▪ EVN Curtailment ▪ Inverter 1E1 has been low insulation fault ▪ Inverter 2E1 has been low insulation fault	656
May 2022	▪ EVN Curtailment	658

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	▪ Inverter 2E2 has been GFDI fault ▪ Inverter 4E1 has been GFDI fault	
June 2022	▪ EVN Curtailment	719
July 2022	▪ EVN Curtailment	485
August 2022	▪ EVN Curtailment ▪ Inverter 1E2 has been "I leakage pro" fault ▪ Inverter 2E1 has been low insulation resistance fault	833
September 2022	▪ EVN Curtailment ▪ Unit#2&3 of Inverter 2E1 was fault "Current 3 Unbalanced"	713
October 2022	▪ EVN Curtailment ▪ 110kV transmission line has been blackout	630
November 2022	▪ EVN Curtailment ▪ 110kV transmission line has been blackout ▪ Inverter 3E1 has been "I leakage pro"	427
December 2022	▪ EVN Curtailment ▪ 110kV transmission line has been blackout	576
January 2023	▪ EVN Curtailment ▪ Inverter 2E1 stopped operating due to PDP protection. ▪ Inverter 1E2 stopped operating due to PDP protection.	655
February 2023	▪ EVN Curtailment ▪ Inverter 4E2 stop operating due to Driver boar fault. ▪ Inverter 1E1 has been low insulation fault.	929

- Inverter 4E2 stop operating due to Driver board fault

Total	13,415
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18N + 18NX (250MW + 75 MW)

Month	Incidents	Estimated Energy Loss (MWh)
July 2021	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault	2,384
August 2021	▪ EVN Curtailment ▪ DC string fuse blown & current error ▪ PDP protection fault ▪ Module low DC voltage ▪ GFDI fault ▪ PM activities for AB ▪ Insulation impedance fault	2,667
September 2021	▪ EVN Curtailment ▪ DC string fuse blown, MC4 blown and fuse blown SCB ▪ PDP protection fault ▪ Module low DC voltage ▪ GFDI fault ▪ PM activities for AB ▪ Insulation impedance fault	2,935
October 2021	▪ EVN Curtailment ▪ DC string fuse blown	5,128

	▪ PDP protection fault ▪ Module low DC voltage ▪ GFDI fault ▪ PM activities for AB ▪ Insulation impedance fault	
November 2021	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault ▪ Module low DC voltage ▪ GFDI fault ▪ PM activities for AB ▪ Insulation impedance fault	2,516
December 2021	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault ▪ Module low DC voltage ▪ GFDI fault ▪ PM activities for AB ▪ Insulation impedance fault	3,384
January 2022	▪ EVN Curtailment ▪ DC string fuse blown and MC4 blown ▪ PM activities for AB ▪ Solar wire broken	1,760
February 2022	▪ EVN Curtailment ▪ DC string fuse blown	3,037

	▪ PDP protection fault ▪ GFDI fault ▪ AC switch disconnection fault ▪ MV switchgear – MC333 Error	
March 2022	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault ▪ Module low DC voltage ▪ GFDI fault ▪ Insulation impedance fault ▪ MV switchgear – MC333 Error	790
April 2022	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault ▪ Module low DC voltage ▪ GFDI fault ▪ PM activities for AB ▪ DC Leakage current ▪ Harness damaged and fuse broken ▪ Insulation impedance fault	898
May 2022	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault ▪ Module low DC voltage ▪ GFDI fault ▪ PM activities for AB	200

June 2022	▪ EVN Curtailment	1,152
	▪ DC string fuse blown	
	▪ PDP protection fault	
	▪ Module low DC voltage	
	▪ GFDI fault	
	▪ PM activities for AB	
	▪ Insulation impedance fault	
	▪ Module damaged	
	▪ Device Power stack IGBT faulty	
July 2022	▪ EVN Curtailment	506
	▪ DC string fuse blown	
	▪ PDP protection fault	
	▪ Module low DC voltage	
	▪ GFDI fault	
	▪ PM activities for AB	
	▪ Insulation impedance fault	
	▪ SCU board no response	
August 2022	▪ EVN Curtailment	817
	▪ DC string fuse blown	
	▪ PDP protection fault	
	▪ Module low DC voltage	
	▪ GFDI fault	
	▪ PM activities for AB	
	▪ Insulation impedance fault	
	▪ MV switchgear – MC333 Error	
September 2022	▪ EVN Curtailment	949

	▪ DC string fuse blown ▪ PDP protection fault ▪ Module low DC voltage ▪ GFDI fault ▪ Low oil level trip (INV 13)	
October 2022	▪ EVN Curtailment ▪ DC string fuse blown ▪ DC leakage current ▪ PDP protection fault ▪ Low oil level trip (INV 13) ▪ GFDI fault ▪ Broken solar wire	7,898
November 2022	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault ▪ GFDI fault ▪ PM activities for AB ▪ Broken solar wire	634
December 2022	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault ▪ PM activities for AB	2,797
January 2023	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault	4,848

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	▪ GFDI fault ▪ Loss half current ▪ Broken solar wire	
February 2023	▪ EVN Curtailment ▪ DC string fuse blown ▪ PDP protection fault ▪ GFDI fault ▪ PM activities for AB ▪ Insulation impedance fault	1,012
Total		46,313

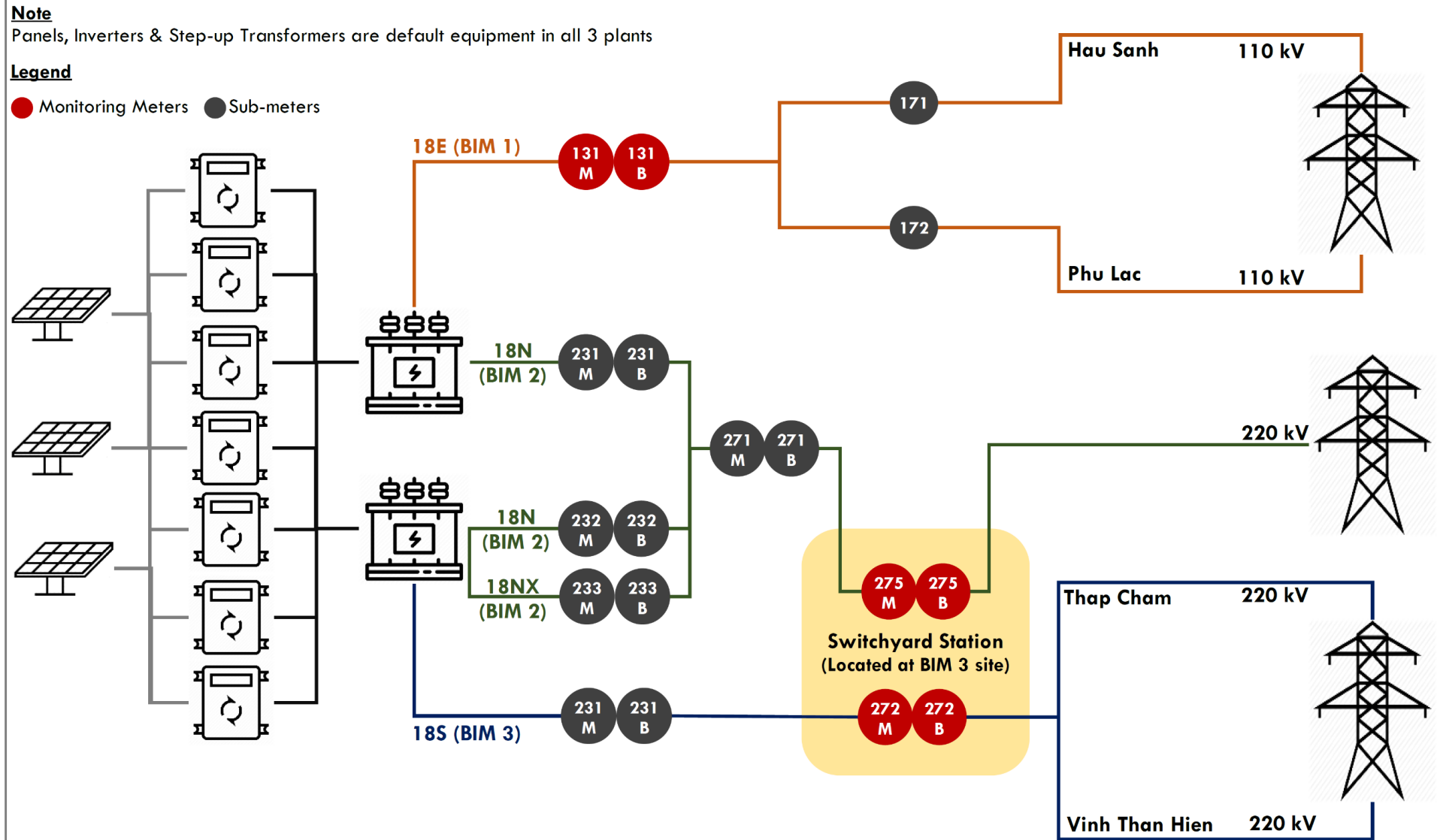
18S (50MW)

Month	Incidents	Estimated Energy Loss (MWh)
July 2021	▪ EVN Curtailment	266
August 2021	▪ EVN Curtailment	437
September 2021	▪ EVN Curtailment	471
October 2021	▪ EVN Curtailment	719
November 2021	▪ EVN Curtailment	320
December 2021	▪ EVN Curtailment ▪ Inverter SS11.1 PDP protection fault	596
January 2022	▪ EVN Curtailment	261
February 2022	▪ EVN Curtailment	371
March 2022	▪ EVN Curtailment	28
April 2022	▪ EVN Curtailment	84

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	▪ Inverter SS05.2 I leakage fault ▪ Inverter 5E1 branch Idc high fault	
May 2022	▪ EVN Curtailment	20
June 2022	▪ EVN Curtailment	14
July 2022	▪ EVN Curtailment	15
August 2022	▪ EVN Curtailment	74
September 2022	▪ EVN Curtailment ▪ DC Fuses ▪ MC4	74
October 2022	▪ EVN Curtailment ▪ The VT phase B of Outgoing 331 has been damaged	889
November 2022	▪ EVN Curtailment ▪ The VCB incoming 2 (371) has a failure	66
December 2022	▪ EVN Curtailment	236
January 2023	▪ EVN Curtailment ▪ DC String Fuse ▪ Inverter SS01.1	516
February 2023	▪ EVN Curtailment ▪ DC Fuses ▪ Inverter SS07.1 & SS09.2	158
Total		5,614

Annex 2 – Metering Layout of three plants



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