



TEMPLATE

# MONITORING REPORT

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PUBLICATION DATE **14.10.2020**

VERSION **v. 1.1**

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

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This document contains the following Sections

Key Project Information

0 - Description of project

0 - Implementation of project

0 - Description of monitoring system applied by the project

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0 - Safeguards Reporting

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# KEY PROJECT INFORMATION

## Key Project Information

<b>GS ID (s) of Project (s)</b>	GS7526
<b>Title of the project (s) covered by monitoring report</b>	BMT Solar Farm
<b>Version number of the PDD/VPA-DD (s) applicable to this monitoring report</b>	06
<b>Version number of the monitoring report</b>	04
<b>Completion date of the monitoring report</b>	28/03/2022
<b>Date of project design certification</b>	27/12/2019
<b>Date of Last Annual Report</b>	23/04/2020
<b>Monitoring period number</b>	01
<b>Duration of this monitoring period</b>	02/05/2019 – 30/04/2021
<b>Project Representative</b>	BMT Renewable Energy Stock Company
<b>Host Country</b>	Vietnam
<b>Activity Requirements applied</b>	<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
<b>Methodology (ies) applied and version number</b>	ACM0002: Grid-connected electricity generation from renewable sources (Version 19.0)
<b>Product Requirements applied</b>	<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**

<b>Sustainable Development Goals Targeted</b>	<b>SDG Impact</b>	<b>Amount Achieved</b>	<b>Units/Products</b>
SDG 7	Renewable energy generated	87,610	MWh
SDG 8	Number of jobs created	33	Number
SDG 13	Emission reduction	74,397	tCO <sub>2</sub>

**Table 2 – Product Vintages**

		<b>Amount Achieved</b>		
<b>Start Dates</b>	<b>End Dates</b>	<b>SDG 7</b>	<b>SDG 8</b>	<b>SDG 13</b>
02/05/2019	31/12/2019	24,952.6 MWh	18	24,586 tCO <sub>2</sub>
01/01/2020	31/12/2020	44,449.6 MWh	33	34,746 tCO <sub>2</sub>
01/01/2021	30/04/2021	14,207.9 MWh	33	12,065 tCO <sub>2</sub>

## SECTION A. DESCRIPTION OF PROJECT

### **A.1. General description of project**

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BMT Renewable Energy Joint Stock Company (a joint venture of the AMI Energy Holdings Joint Stock Company and AC Energy Vietnam Investment Pte, Ltd.) is implemented "BMT Solar Farm" (hereafter referred as "Proposed project" or "Project activity") with a total installed capacity of 30 MWp. The plant is located at EA Phe Commune and Krong Puk Commune, Krong Pak District, Dak Lak Province, 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 full capacity of 30MW.

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 02/05/2019 to 30/04/2021), the emission reduction achieved by the project activity is 74,397 tCO<sub>2</sub>.

### **A.2. Location of project**

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Host Country: Vietnam

Province: Dak Lak

District: Krong Pak

Communes: Ea Phe & Krong Puk

### **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: 02/05/2019 – 01/05/2024

CP-02: 02/05/2024 – 01/05/2029

CP-03: 02/05/2029 – 01/05/2034

## 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 specifications<sup>1</sup> of equipment as follows:

General Information	
<b>Total Number of Solar PV Panels</b>	86,940
<b>No of PV Panel strings</b>	2,898
<b>Number of Solar PV Panels per string</b>	30 (in series)
<b>Number of string combiner box units</b>	127
<b>Number of Inverters</b>	7

Technical Specifications of PV Modules			
<b>Brand</b>	Seraphim	<b>Short Circuit Current (Isc)</b>	9.43A
<b>Model</b>	SRP-345-6MA-HV	<b>Max Power Current (Imp)</b>	9.11A
<b>Type</b>	Monocrystalline	<b>Module Efficiency</b>	17.65%
<b>Max Power (Pmax)</b>	345W	<b>Power Tolerance</b>	0,+4.99W
<b>Open Circuit Voltage (Voc)</b>	46.8V	<b>Max System Voltage</b>	1500V
<b>Max Power Voltage (Vmp)</b>	37.9V	<b>Max Series Fuse</b>	20A

Technical Specifications of Inverters	
<b>Model</b>	SG3125HV
<b>Max. PV Input Voltage</b>	1500V & 4178A
<b>Max Efficiency / Euro. Efficiency</b>	99.0% / 98.7%
<b>Max AC Output Current</b>	3458A
<b>Auxiliary Power Supply</b>	415V, 15kVA

<sup>1</sup> Suppliers' specifications / data sheet

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

The project activity is design certified under Gold Standard on 27/12/2019.

Several incidents (listed below) 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 actual COD of the plant on 25/04/2019. However, for a conservative approach, PO chose 02/05/2019 as a start date of the crediting period for this monitoring report.

Month	Incidents	Estimated Energy Loss (MWh)
May 2020	EVN Curtailment & Grid Outage	-
June 2020	Grid Outage	59
July 2020	Inverter Fault	3
August 2020	EVN Curtailment & Grid Outage	-
September 2020	Grid Outage	120
October 2020	EVN Curtailment & Grid Outage	73
November 2020	EVN Curtailment	291
December 2020	EVN Curtailment & Grid Outage	173
January 2021	EVN Curtailment	358
February 2021	EVN Curtailment	757
March 2021	EVN Curtailment	229
April 2021	EVN Curtailment	192
<b>Total</b>		<b>2,255</b>

#### B.1.1 Forward Action Requests

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No FAR has been raised during the design review 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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Even though the commercial operation date (COD) was 25/04/2019<sup>2</sup>, the start date for the crediting period was considered 01/05/2019 in the certified PDD. However, PO chose 02/05/2019 as a start date for the crediting period in a conservative manner.

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

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<sup>2</sup> Operational license issued on 21/05/2019

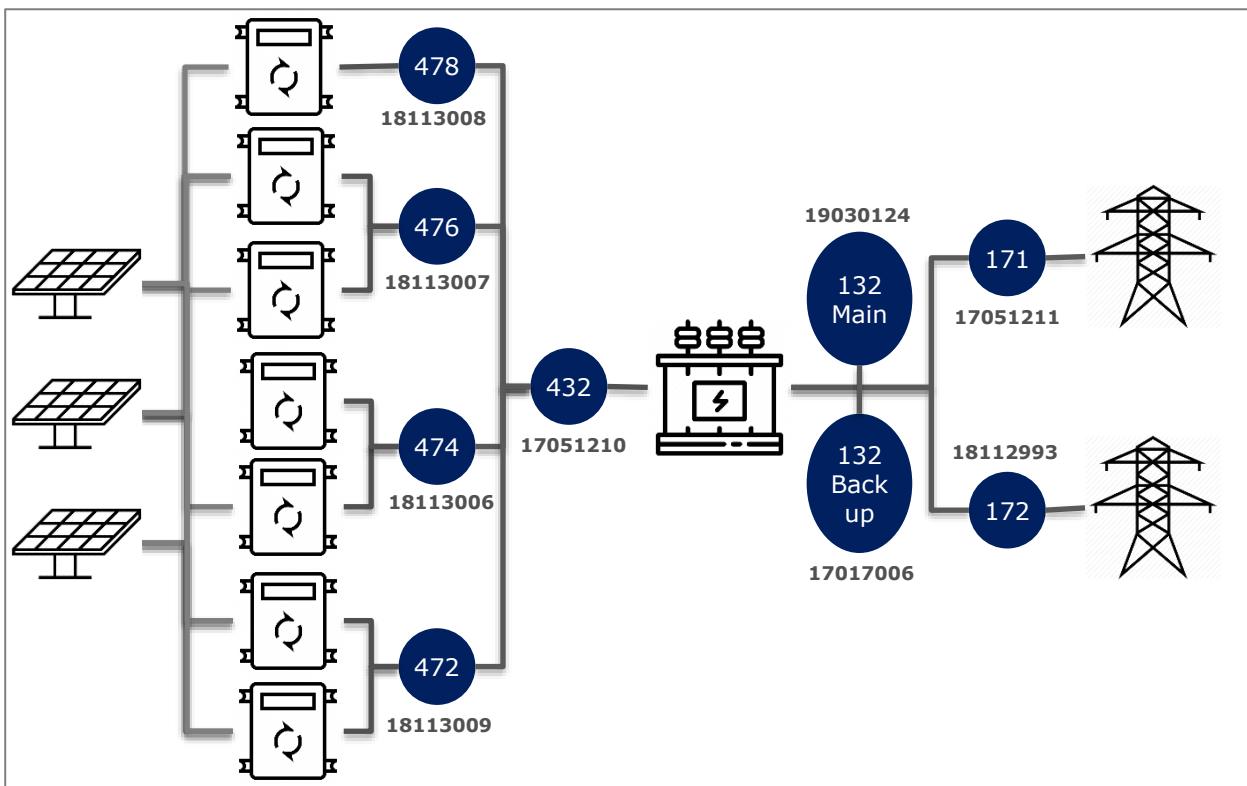
## SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

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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**

The meter layout as follows:



All the installed electricity meters 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 a year. All other meters are verified once in three years. The relevant calibration certificates are available for GS-VVB review. The dates of calibrations/verifications by EVN are as follows:

<b>Meter Number</b>	<b>Calibration/Verification Dates</b>		
132 (M) & (B)	26/03/2019	20/05/2020*	04/08/2021

*Note: \* Even though yearly verification scheduled for main meter, the actual verification takes place as per the EVN's schedule and thereby ±2-3 months variance between existing and current verifications.*

The meters' specifications are as follows:

<b>Brand</b>	<b>Code</b>	<b>Rated Current</b>	<b>Rated Voltage</b>	<b>Accuracy Class</b>
Elster	A1700	1-2A, 5-6A, and 5-10A	57.5-415V	0.2S (Main) & 0.5S (Backup)

### **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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<b>Relevant SDG Indicator</b>	SDG 13: Climate Action
<b>Data/parameter</b>	$EF_{grid,OM,y}$
<b>Unit</b>	tCO <sub>2</sub> /MWh
<b>Description</b>	Operating Margin CO <sub>2</sub> emission factor for the electricity system in year y
<b>Source of data</b>	National electricity system regulation centre
<b>Value(s) applied</b>	0.8336
<b>Choice of data or Measurement methods and procedures</b>	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.
<b>Purpose of data</b>	For the calculation of the Baseline Emission
<b>Additional comment</b>	-

<b>Relevant SDG Indicator</b>	SDG 13: Climate Action
<b>Data/parameter</b>	$EF_{grid,BM,y}$
<b>Unit</b>	tCO <sub>2</sub> /MWh
<b>Description</b>	Build Margin CO <sub>2</sub> emission factor for the electricity system in year y
<b>Source of data</b>	National electricity system regulation centre
<b>Value(s) applied</b>	0.8961
<b>Choice of data or Measurement methods and procedures</b>	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.
<b>Purpose of data</b>	For the calculation of the Baseline Emission
<b>Additional comment</b>	-

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

## D.2 Data and parameters monitored

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<b>Relevant SDG Indicator</b>	7.2.1 – Renewable energy share in the total final energy consumption								
<b>Data / Parameter</b>	Gross Power Generation								
<b>Unit</b>	MWh/yr								
<b>Description</b>	Quantity of electricity generated and supplied by the project power plant to the grid in year y								
<b>Source of data</b>	Standard metering of the net electricity supplied to the grid as indicated in the Power Purchase Agreement (PPA)								
<b>Value(s) applied</b>	<table border="1"> <thead> <tr> <th>Monitoring Period</th> <th>Generation in MWh</th> </tr> </thead> <tbody> <tr> <td>02/05/2019 – 31/12/2019</td> <td>29,089</td> </tr> <tr> <td>01/01/2020 – 31/12/2020</td> <td>44,662</td> </tr> <tr> <td>01/01/2021 – 30/04/2021</td> <td>14,279</td> </tr> </tbody> </table>	Monitoring Period	Generation in MWh	02/05/2019 – 31/12/2019	29,089	01/01/2020 – 31/12/2020	44,662	01/01/2021 – 30/04/2021	14,279
Monitoring Period	Generation in MWh								
02/05/2019 – 31/12/2019	29,089								
01/01/2020 – 31/12/2020	44,662								
01/01/2021 – 30/04/2021	14,279								

	Total	88,030										
<b>Measurement methods and procedures</b>	Electricity generated would be 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 (EVN) remotely. Archive of the data would be available for entire lifetime of the project.											
<b>Monitoring frequency</b>	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.)											
<b>QA/QC procedures</b>	Electricity meters will be calibrated once in three years as per EVN requirement. The electricity generation can also be cross-checked using the invoices billed to EVNEPTC for payment											
<b>Purpose of data</b>	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"											
<b>Additional comment</b>	None											
<b>Relevant SDG Indicator</b>	7.2.1 – Renewable energy share in the total final energy consumption											
<b>Data / Parameter</b>	Auxiliary Power Consumption											
<b>Unit</b>	MWh/yr											
<b>Description</b>	Quantity of electricity consumed by the project electricity consumption source j in year y											
<b>Source of data</b>	Direct measurement by electricity meters											
<b>Value(s) applied</b>	<table border="1"> <thead> <tr> <th>Monitoring Period</th> <th>Consumption in MWh</th> </tr> </thead> <tbody> <tr> <td>02/05/2019 – 31/12/2019</td> <td>137</td> </tr> <tr> <td>01/01/2020 – 31/12/2020</td> <td>212</td> </tr> <tr> <td>01/01/2021 – 30/04/2021</td> <td>71</td> </tr> <tr> <td>Total</td> <td>420</td> </tr> </tbody> </table>		Monitoring Period	Consumption in MWh	02/05/2019 – 31/12/2019	137	01/01/2020 – 31/12/2020	212	01/01/2021 – 30/04/2021	71	Total	420
Monitoring Period	Consumption in MWh											
02/05/2019 – 31/12/2019	137											
01/01/2020 – 31/12/2020	212											
01/01/2021 – 30/04/2021	71											
Total	420											

<b>Measurement methods and procedures</b>	Electricity consumption by the project plant would be monitored by the electricity meters on a continuous basis and readings will be 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.
<b>Monitoring frequency</b>	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.
<b>QA/QC procedures</b>	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.)
<b>Purpose of data</b>	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"
<b>Additional comment</b>	None

<b>Relevant SDG Indicator</b>	8.5.1 – Average hourly earnings of female and male employees, by occupation, age and persons with disabilities
<b>Data / Parameter</b>	Employees' monthly wages
<b>Unit</b>	Vietnam Dong per employee
<b>Description</b>	Monthly wages to all employees by the project activity
<b>Source of data</b>	Job contracts (or) Pay slip (or) Payroll records
<b>Value(s) applied</b>	Detailed spreadsheet provided to GS-VVB contains hourly wages based on the employees': <ol style="list-style-type: none"><li>1. Age</li><li>2. Position</li><li>3. Gender</li></ol>
<b>Measurement methods and procedures</b>	Randomly choose employees with similar designation from payroll records and compare their wages and experience
<b>Monitoring frequency</b>	Once for each monitoring period

<b>QA/QC procedures</b>	Payroll records, job contracts and staff register will be provided annually. After first verification, only changes in employees will be reported.
<b>Purpose of data</b>	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"
<b>Additional comment</b>	None

<b>Relevant SDG Indicator</b>	8.8.1 – Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status
<b>Data / Parameter</b>	No of Fatal & Non-fatal injuries
<b>Unit</b>	Number
<b>Description</b>	Total number of employees injured during the operation and maintenance period of project activity
<b>Source of data</b>	Health & Safety issues records
<b>Value(s) applied</b>	0
<b>Measurement methods and procedures</b>	The total number of Health and Safety training based on Training Records or Certificates
<b>Monitoring frequency</b>	Once for each monitoring period
<b>QA/QC procedures</b>	Accident or incident records will be provided
<b>Purpose of data</b>	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
<b>Additional comment</b>	Since Vietnam has already ratified <sup>3</sup> relevant ILO core conventions on equality, namely Equal Remuneration Convention

<sup>3</sup> [https://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200\\_COUNTRY\\_ID:103004](https://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:103004)

(Convention No 100) in 1997, Indicator 8.8.24 is not considered as monitoring parameter.

<b>Relevant SDG Indicator</b>	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																						
<b>Data / Parameter</b>	No of awareness programmes																						
<b>Unit</b>	Number																						
<b>Description</b>	Provide awareness trainings regarding the climate change and mitigation measures																						
<b>Source of data</b>	Training records include attendance register or photos of training																						
<b>Value(s) applied</b>	<table border="1"> <thead> <tr> <th>Year</th><th>No of Trainings</th><th>Attendees per training</th></tr> </thead> <tbody> <tr> <td rowspan="2">2019</td><td>3 – Health &amp; Safety Trainings for O&amp;M team (Jun, Sep &amp; Dec)</td><td>15</td></tr> <tr><td>7 – Monthly Health &amp; Safety Trainings for Security team (Jun to Dec)</td><td>9</td></tr> <tr> <td rowspan="3">2020</td><td>1 – Environmental Awareness</td><td>24</td></tr> <tr><td>3 – Health &amp; Safety Trainings for O&amp;M team (Mar, Jun &amp; Dec)</td><td>15</td></tr> <tr><td>12 – Monthly Health &amp; Safety Trainings for Security team (Jan to Dec)</td><td>9</td></tr> <tr> <td rowspan="2">2021</td><td>1 – Health &amp; Safety Trainings for O&amp;M team (Mar)</td><td>15</td></tr> <tr><td>5 – Monthly Health &amp; Safety Trainings for Security team (Jan to Apr)</td><td>9</td></tr> </tbody> </table>			Year	No of Trainings	Attendees per training	2019	3 – Health & Safety Trainings for O&M team (Jun, Sep & Dec)	15	7 – Monthly Health & Safety Trainings for Security team (Jun to Dec)	9	2020	1 – Environmental Awareness	24	3 – Health & Safety Trainings for O&M team (Mar, Jun & Dec)	15	12 – Monthly Health & Safety Trainings for Security team (Jan to Dec)	9	2021	1 – Health & Safety Trainings for O&M team (Mar)	15	5 – Monthly Health & Safety Trainings for Security team (Jan to Apr)	9
Year	No of Trainings	Attendees per training																					
2019	3 – Health & Safety Trainings for O&M team (Jun, Sep & Dec)	15																					
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	3 – Health & Safety Trainings for O&M team (Mar, Jun & Dec)	15																					
	12 – Monthly Health & Safety Trainings for Security team (Jan to Dec)	9																					
2021	1 – Health & Safety Trainings for O&M team (Mar)	15																					
	5 – Monthly Health & Safety Trainings for Security team (Jan to Apr)	9																					
<p><i>Note: Awareness training wasn't carried out in 2021 due to pandemic</i></p>																							

<sup>4</sup> <https://sustainabledevelopment.un.org/sdg8>

<b>Measurement methods and procedures</b>	The training records include attendance register will be available to measure the level of awareness program conducted for local communities and others
<b>Monitoring frequency</b>	Once for each monitoring period
<b>QA/QC procedures</b>	None
<b>Purpose of data</b>	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
<b>Additional comment</b>	None

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

<b>Data/Parameter</b>	<b>Value obtained in this monitoring period</b>	<b>Value obtained last monitoring period</b>
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  $y$  (tCO<sub>2</sub>/yr)

$EG_{PJ,y}$  = Quantity of net electricity generation (i.e. equal to gross power generation minus auxiliary power consumption) 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 CO<sub>2</sub> 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" (tCO<sub>2</sub>/MWh)

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

Symbol	Unit	Jun-Dec 2019	Jan-Dec 2020	Jan-May 2021
$EG_{PJ,grid,y}$	MWh	28,952.6	44,449.6	14,207.9
$EF_{grid,CM,y}$	tCO <sub>2</sub> /MWh		0.8492	
$BE_y$	tCO <sub>2</sub>	24,586	37,746	12,065
<b>Total</b>	<b>tCO<sub>2</sub></b>		<b>74,397</b>	

### 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 43,224 MWh per annum. The total affordable and clean energy generated by project activity is 87,610 MWh during this monitoring period. The breakdown of energy generation as follows:

Description	Unit	Jun-Dec 2019	Jan-Dec 2020	Jan-May 2021
Power Generation	MWh	28,952.6	44,449.6	14,207.9
<b>Total</b>	<b>MWh</b>		<b>87,610</b>	

### **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 33 jobs are created. 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 attendees for each training
2019	18	3 (Health & safety trainings for O&M team)	15
		7 (Monthly health & safety trainings for security team)	9
2020	33	1 (Environmental Awareness)	24
		3 (Health & safety trainings for O&M team)	24
2021*	33	12 (Monthly health & safety trainings for security team)	9
		1 (Health & safety trainings for O&M team)	24
		5 (Monthly health & safety trainings for security team)	9

*Note: \* Number of attendees and physical trainings are reduced in 2021 due to pandemic*

### **SDG 13 – Climate Action**

The project outcome is zero.

### **E.3. Calculation of leakage**

>>

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
7	Affordable & Clean Energy	0	87,610 MWh	<b>87,610 MWh</b>

8	Decent Work & Economic Growth	0	Job created: 33 Trainings conducted: 32	<b>Job created: 33</b> <b>Trainings conducted: 32</b>
13	Climate Action	74,397 tCO <sub>2</sub>	0	<b>74,397 tCO<sub>2</sub></b>

#### 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 <sup>5</sup> achieved during this monitoring period
7	86,448 MWh	87,610 MWh
8	Jobs: 18 Trainings: 1 per annum	Jobs: 33 Trainings: 32
13	73,412 tCO <sub>2</sub>	74,397 tCO <sub>2</sub>

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

>>

#### SDG 7 – Affordable & Clean Energy

Year	Ex ante calculation approved PDD for this monitoring period	Remarks
2019	$(43,224 \div 12 \text{ months}) \times 7 \text{ months} = 25,214 \text{ MWh}$	Crediting period start date: 2 May 2019
2020	43,224 MWh	Estimated power generation: 43,224 MWh/year
2021	$(43,224 \div 12 \text{ months}) \times 5 \text{ months} = 18,010 \text{ MWh}$	
Total	<b>86,448 MWh</b>	

<sup>5</sup> Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

## **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**

<b>Year</b>	<b>Ex ante calculation approved PDD for this monitoring period</b>	<b>Remarks</b>
2019	$(36,706 \div 12 \text{ months}) \times 7 \text{ months} = 21,412 \text{ tCO}_2$	Crediting period start date: 2 May 2019
2020	36,706 tCO <sub>2</sub>	Estimated emission reduction: 461,636 tCO <sub>2</sub> /year
2021	$(36,706 \div 12 \text{ months}) \times 5 \text{ months} = 15,294 \text{ tCO}_2$	
<b>Total</b>	<b>73,412 tCO<sub>2</sub></b>	

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

>>

The actual power generation and emission reduction are higher than the estimated in the approved PDD. The variations are as follows:

<b>Vintage</b>	<b>Power Generation (MWh)</b>		<b>Variation (%)</b>
	<b>Estimated (PDD)</b>	<b>Actual</b>	
2019 (Jun – Dec)	25,214	28,952.6	▲ 13%
2020 (Jan – Dec)	43,224	44,449.6	▲ 3%
2021 (Jan – May)	18,010	14,207.9	▼ 27%

Overall, 1.3% increase in power generation for this verification period due to uneven weather pattern might cause the longer sun-hours.

## **SECTION F. SAFEGUARDS REPORTING**

>>

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 was conducted monthly safety trainings for O&M, maintenance and security during 2020 and 2021. One environmental awareness was conducted in 2020 and unable to conduct awareness in 2021 due to pandemic.

## 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.**

>>

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 (BMT Solar Plant, EA Phe Commune and Krong Puk Commune, Krong Pak District, Dak Lak Province, Vietnam) as per stakeholders' suggestion.	
Telephone access	Project Proponent: Mr Hua Minh Duc (Plant Director) +84 903 399 375	
Internet/email access	Project Proponent: Mr Hua Minh Duc <a href="mailto:duc.hua@ami-acrenewables.vn">duc.hua@ami-acrenewables.vn</a>	Gold Standard: <a href="mailto:info@goldstandard.org">info@goldstandard.org</a>

### **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.

## 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 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 <a href="#">accompanying Guide</a> to help the user understand detailed rules and requirements</p>
1.0	10 July 2017	Initial adoption