

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

SECTION A - Description of project

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SECTION C - Description of monitoring system applied by the project

SECTION D - Data and parameters

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## KEY PROJECT INFORMATION

### Key Project Information

|                                                                                  |                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GS ID (s) of Project (s)</b>                                                  | GS 7526                                                                                                                                                                                                                                   |
| <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>                                   | 03                                                                                                                                                                                                                                        |
| <b>Completion date of the monitoring report</b>                                  | 24/02/2025                                                                                                                                                                                                                                |
| <b>Date of project design certification</b>                                      | 27/12/2019                                                                                                                                                                                                                                |
| <b>Date of Last Annual Report</b>                                                | 31/08/2022                                                                                                                                                                                                                                |
| <b>Monitoring period number</b>                                                  | 03                                                                                                                                                                                                                                        |
| <b>Duration of this monitoring period</b>                                        | 01/03/2023 – 30/04/2024                                                                                                                                                                                                                   |
| <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<br><input checked="" type="checkbox"/> Renewable Energy Activities<br><input type="checkbox"/> Land Use and Forestry Activities/Risks & Capacities<br><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<br><input type="checkbox"/> Renewable Energy Label<br><input type="checkbox"/> N/A                                                                            |

**Table 1 - Sustainable Development Contributions Achieved**

| Sustainable Development Goals Targeted | SDG Impact                    | Amount Achieved | Units/ Products  |
|----------------------------------------|-------------------------------|-----------------|------------------|
| SDG 7                                  | Affordable & Clean Energy     | 49,933          | MWh              |
| SDG 8                                  | Decent work & Economic Growth | 31              | Number           |
| SDG 13                                 | Climate Action                | 42,401          | tCO <sub>2</sub> |

**Table 2 – Product Vintages**

|             |            | Amount Achieved |       |                            |
|-------------|------------|-----------------|-------|----------------------------|
| Start Dates | End Dates  | SDG 7 (MWh)     | SDG 8 | SDG 13 (tCO <sub>2</sub> ) |
| 01/03/2023  | 31/12/2023 | 33,871          | 31    | 28,762                     |
| 01/01/2024  | 30/04/2024 | 16,062          | 31    | 13,639                     |

## 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 MW. 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 01/03/2023 to 30/04/2024), the emission reduction achieved by the project activity is 42,401 tCO<sub>2</sub>.

Vietnam is a non-annex country and thereby no emission reduction cap enforced as well as no emission trading system implemented as per the Decree 06/2022/ND-CP<sup>1</sup>, Article 17, clause 1c. Also, Article 20, clause 5 states:

*The subjects specified in Clause 1 of this Article implementing programs and projects under the carbon credit exchange and offset mechanism outside the framework of the UNFCCC, international treaties and agreements to which the Socialist Republic of Vietnam is a member in the territory of Vietnam shall be responsible for:*

- *When registering a program or project, registration information must be sent to the Ministry of Natural Resources and Environment (MoNRE) according to Form No. 04, Appendix V issued with this Decree;*

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<sup>1</sup> <https://thuvienphapluat.vn/van-ban/tai-nguyen-moi-truong/Nghi-dinh-06-2022-ND-CP-giam-nhe-phat-thai-khi-nha-kinh-va-bao-ve-tang-o-don-500104.aspx>

- *During the implementation of the program, the project must periodically provide information on the implementation status to the MoNRE every year before December 31 according to Form No. 05, Appendix V issued with this Decree.*

Moreover, the project activity is constructed, operated, and owned by a private entity without any ODA fund. Therefore, the project owner has full legal rights to own any GS-VERs generated from the project activity. The above confirms that there is no double counting with national climate policies, and the GHG emission reductions from the project activity are not accounted for within the relevant system of the host country/ regional or voluntary mechanism.

## A.2. Location of project

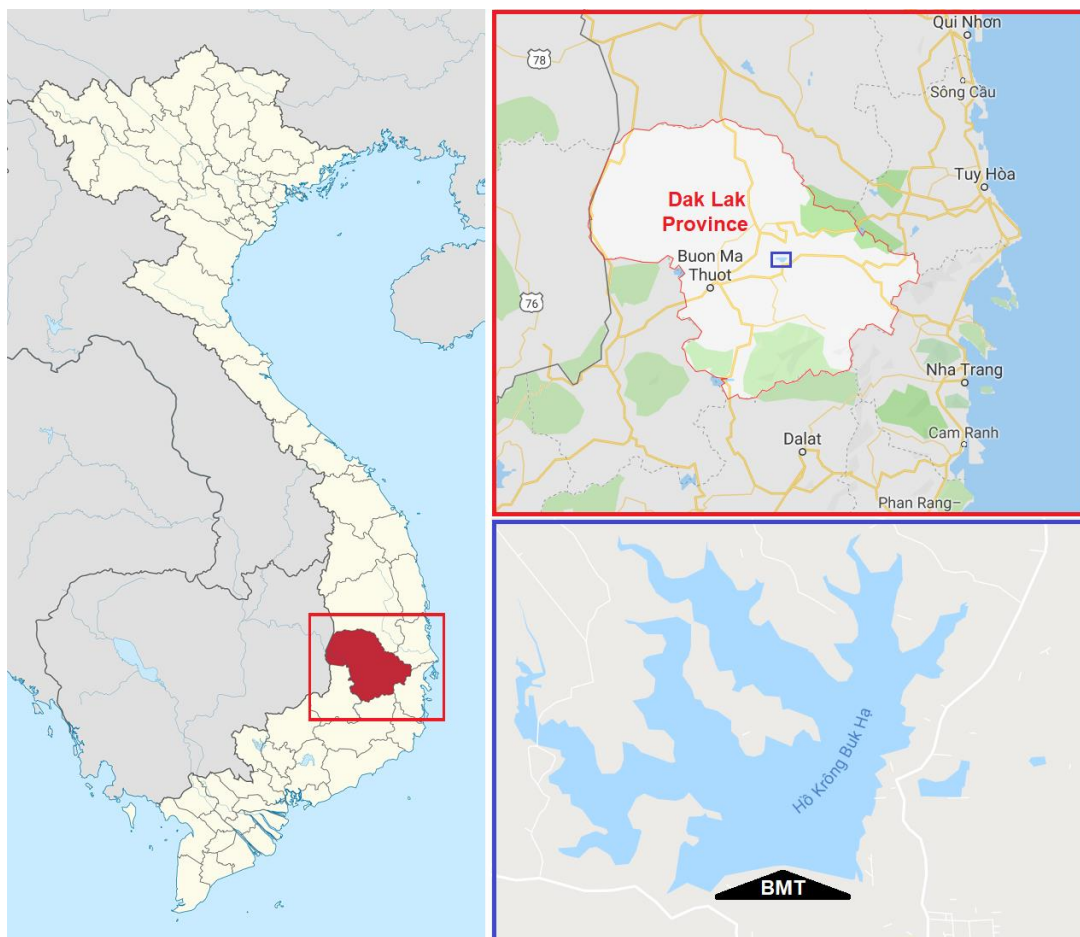
>>

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:

|                       |                                                                         |
|-----------------------|-------------------------------------------------------------------------|
| <b>Scope No</b>       | : 1                                                                     |
| <b>Sectoral Scope</b> | : Energy industries (renewable - / non-renewable sources)               |
| <b>Title</b>          | : ACM0002: Grid-connected electricity generation from renewable sources |
| <b>Version</b>        | : 19                                                                    |
| <b>Validity</b>       | : 31/08/2018 – 27/11/2019                                               |

**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>2</sup> of equipment as follows:

**General Information**

|                                        |        |
|----------------------------------------|--------|
| <b>Total Number of Solar PV Panels</b> | 86,940 |
|----------------------------------------|--------|

<sup>2</sup> Suppliers' specifications / data sheet

|                                             |                |
|---------------------------------------------|----------------|
| <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   |

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.

In this report, the third monitoring report covers 01/03/2023 to 30/04/2024.

| <b>Year</b>    | <b>Incidents</b>  | <b>Estimated Energy Loss (MWh)</b> |
|----------------|-------------------|------------------------------------|
| March 2023     | ▪ EVN Curtailment | 104                                |
| April 2023     | ▪ EVN Curtailment | 35                                 |
| May 2023       | ▪ EVN Curtailment | 145                                |
| June 2023      | ▪ EVN Curtailment | 176                                |
| July 2023      | ▪ EVN Curtailment | 28                                 |
| August 2023    | ▪ EVN Curtailment | 428                                |
| September 2023 | ▪ EVN Curtailment | 363                                |
| October 2023   | ▪ EVN Curtailment | 735                                |

|               |                   |              |
|---------------|-------------------|--------------|
| November 2023 | ▪ EVN Curtailment | 417          |
| December 2023 | ▪ EVN Curtailment | 149          |
| January 2024  | ▪ EVN Curtailment | 157          |
| February 2024 | ▪ EVN Curtailment | 502          |
| March 2024    | ▪ EVN Curtailment | 134          |
| April 2024    | ▪ EVN Curtailment | 86           |
| <b>Total</b>  |                   | <b>3,458</b> |

#### B.1.1 Forward Action Requests

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No FARs are raised.

### 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

>>

Not Applicable

#### B.2.3. Changes to start date of crediting period

>>

Not Applicable

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

>>

Not Applicable

#### B.2.5. Changes to project design of approved project

>>

Not Applicable

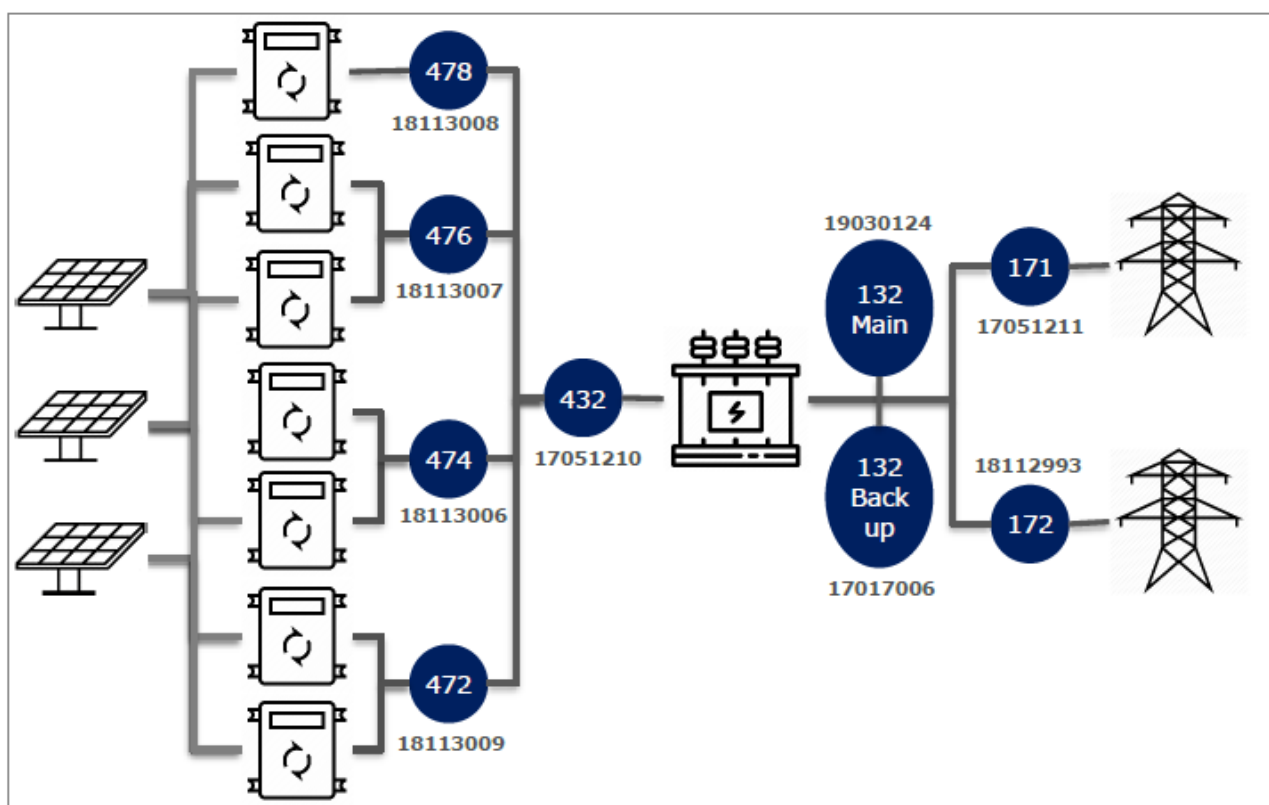
## SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

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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

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 interval<sup>3</sup>. The relevant calibration certificates are available for GS-VVB review. The dates of calibrations/verifications by EVN are as follows:

| Meter Number | Serial Number | Calibration Dates |            |            |
|--------------|---------------|-------------------|------------|------------|
| 132 (M)      | 19030124      | 28/06/2022        | 08/06/2023 | 05/04/2024 |

| Meter Number | Serial Number | Calibration Dates |  |            |
|--------------|---------------|-------------------|--|------------|
| 132 (Backup) | 17017006      | 04/08/2021        |  | 05/04/2024 |

The meters' specifications are as follows:

| Brand  | Meter Type  | Code  | Rated Current | Rated Voltage | Voltage & Battery Capacity | Accuracy Class                       |
|--------|-------------|-------|---------------|---------------|----------------------------|--------------------------------------|
| Elster | PB3KAAGHT-5 | A1700 | 1A            | 110VAC        | 9V/160mAh                  | Main Meter: 0.2<br>Backup Meter: 0.5 |

<sup>3</sup> Item 43 in the Table under Article 4 of the circular 07\_2019\_TT-BKHCN (<https://thuvienphapluat.vn/van-ban/Bo-may-hanh-chinh/Thong-tu-07-2019-TT-BKHCN-sua-doi-Thong-tu-23-2013-TT-BKHCN-424852.aspx>)

**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>                                       | Department of Climate Change, Vietnam                                                                                                                                                                                                                                                                                                                                      |
| <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>                                       | Department of Climate Change, Vietnam                                                                                                                                                                                                                                                                                                                                      |
| <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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Data/parameter</b>                                       | $EF_{grid,CM,y}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <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>                                       | Department of Climate Change, Vietnam                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Value(s) applied</b>                                     | 0.8492                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Choice of data or Measurement methods and procedures</b> | <p>The <math>EF_{grid,CM,y}</math> is calculated by using Operating Margin (<math>EF_{grid,OM,y}</math>) and Build Margin (<math>EF_{grid,BM,y}</math>) CO<sub>2</sub> emission factors published (CV 327/BDKH-PTCBT) as per “Tool to calculate the emission factor for an electricity system (Version 07.0)”. the computation as follows:</p> $EF_{grid,CM,y} = (EF_{grid,OM,y} \times W_{OM}) + (EF_{grid,BM,y} \times W_{BM})$ <p>Where:</p> <p><math>EF_{grid,BM,y}</math>= Build margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)</p> <p><math>EF_{grid,OM,y}</math>= Operating margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)</p> <p>WOM = Weighting of operating margin emissions factor (%) = 75%</p> <p>WBM= 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>       | $EG_{PJ,grid,y}$                                                                                                 |                          |                          |
| <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"> <tr> <td><b>Monitoring Period</b></td><td><b>Generation in MWh</b></td></tr> </table>         | <b>Monitoring Period</b> | <b>Generation in MWh</b> |
| <b>Monitoring Period</b>      | <b>Generation in MWh</b>                                                                                         |                          |                          |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|                                           | 01/03/2023 – 31/12/2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 34,046        |
|                                           | 01/01/2024 – 30/04/2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 16,133        |
|                                           | Total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>50,179</b> |
| <b>Measurement methods and procedures</b> | Electricity generated are monitored by the electricity meters on a continuous basis and readings have been 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. |               |
| <b>Monitoring frequency</b>               | Continuous measurement with daily recording<br>(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 are calibrated once in three years as per EVN requirement. The electricity meters and calibration details are provided in Section C. 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |

| Relevant SDG Indicator  | 7.2.1 – Renewable energy share in the total final energy consumption                                                                                                                   |  |                   |                    |                         |     |                         |    |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------|--------------------|-------------------------|-----|-------------------------|----|
| Data / Parameter        | ECPJ,j,y                                                                                                                                                                               |  |                   |                    |                         |     |                         |    |
| 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><tr><th>Monitoring Period</th><th>Consumption in MWh</th></tr><tr><td>01/03/2023 – 31/12/2023</td><td>175</td></tr><tr><td>01/01/2024 – 30/04/2024</td><td>71</td></tr></table> |  | Monitoring Period | Consumption in MWh | 01/03/2023 – 31/12/2023 | 175 | 01/01/2024 – 30/04/2024 | 71 |
| Monitoring Period       | Consumption in MWh                                                                                                                                                                     |  |                   |                    |                         |     |                         |    |
| 01/03/2023 – 31/12/2023 | 175                                                                                                                                                                                    |  |                   |                    |                         |     |                         |    |
| 01/01/2024 – 30/04/2024 | 71                                                                                                                                                                                     |  |                   |                    |                         |     |                         |    |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |     |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|
|                                           | <table> <tr> <td>Total</td><td>246</td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Total | 246 |
| Total                                     | 246                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |     |
| <b>Measurement methods and procedures</b> | 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. |       |     |
| <b>Monitoring frequency</b>               | The meters can capture half hourly data and the data is logged through the SCADA system in a daily basis. However, readings are taken on a monthly basis for record keeping and billing to the EVN.                                                                                                                                                                                                                                                                                                                 |       |     |
| <b>QA/QC procedures</b>                   | Continuous measurement with daily recording<br>(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':<br><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 are 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 are 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>                 | None                                                                                                                                                                                                                                                                                |

|                               |                                                                                                                                                                                                                        |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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                                                                                                                                       |

|                                    |                                                                                                                                                                                                                                                                |                                                   |                       |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------|
| Source of data                     | Training records include attendance register or photos of training                                                                                                                                                                                             |                                                   |                       |
| Value(s) applied                   |                                                                                                                                                                                                                                                                |                                                   |                       |
|                                    | Date                                                                                                                                                                                                                                                           | No of Trainings                                   | Attendees per meeting |
|                                    | 2023                                                                                                                                                                                                                                                           | 10 – Monthly Safety Training at site for Security | 9                     |
|                                    |                                                                                                                                                                                                                                                                | 4 – Quarterly Safety Training at site for O&M     | 15                    |
|                                    |                                                                                                                                                                                                                                                                | 1 – Global Warming Training                       | 18                    |
|                                    | 2024                                                                                                                                                                                                                                                           | 4 –Safety Training at site for Security           | 9                     |
| 1 –Safety Training at site for O&M |                                                                                                                                                                                                                                                                | 15                                                |                       |
| Measurement methods and procedures | The training records include attendance register 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 are helping 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

&gt;&gt;

Not Applicable

## SECTION E. CALCULATION OF SDG IMPACTS

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

>>

#### **SDG 7 – Affordable & 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 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                   | 01/03/2023 –<br>31/12/2023 | 01/01/2024 –<br>30/04/2024 |
|------------------|------------------------|----------------------------|----------------------------|
| $EG_{PJ,grid,y}$ | MWh                    | 34,046                     | 16,133                     |
| $EF_{grid,CM,y}$ | tCO <sub>2</sub> /MWh  |                            | 0.8492                     |
| $BE_y$           | tCO <sub>2</sub>       | 28,911                     | 13,700                     |
| <b>Total</b>     | <b>tCO<sub>2</sub></b> |                            | <b>42,611</b>              |

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

>>

**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 49,933 MWh during this monitoring period. The breakdown of energy generation as follows:

| Description          | Unit       | 01/03/2023 – 31/12/2023 | 01/01/2024 – 30/04/2024 |
|----------------------|------------|-------------------------|-------------------------|
| Net Power Generation | MWh        | 33,871                  | 16,062                  |
| <b>Total</b>         | <b>MWh</b> | <b>49,933</b>           |                         |

**SDG 8 – Decent work & Economic Growth**

The project activity provided employment opportunities which would not have been possible in the baseline scenario. The project currently provides employment of 31 local people at present. 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 |
| 2023 | 31                 | 10 – Monthly Safety Trainings for Security | 9                     |
|      |                    | 4 – Quarterly Safety Training for O&M      | 15                    |
|      |                    | 1 – Global Warming Training                | 18                    |
| 2024 | 31                 | 4 – Monthly Safety Trainings for Security  | 9                     |
|      |                    | 1 – Quarterly Safety Training for O&M      | 15                    |

**SDG 13 – Climate Action**

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

$$PE_y = EC_{PJ,y} \times EF_{grid,CM,y}$$

Where:

$PE_y$  = Project emissions in year  $y$  (tCO<sub>2</sub>/yr)

$EC_{PJ,y}$  = Quantity of net electricity consumption from 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 project emissions as follows:

| Symbol           | Unit                   | 01/03/2023 –<br>31/12/2023 | 01/01/2024 –<br>30/04/2024 |
|------------------|------------------------|----------------------------|----------------------------|
| $EC_{PJ,y}$      | MWh                    | 175                        | 71                         |
| $EF_{grid,CM,y}$ | tCO <sub>2</sub> /MWh  | 0.8492                     |                            |
| $PE_y$           | tCO <sub>2</sub>       | 148                        | 61                         |
| <b>Total</b>     | <b>tCO<sub>2</sub></b> | <b>209</b>                 |                            |

### 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                       | 49,933 MWh                                 | <b>49,933 MWh</b>                                        |
| 8   | Decent Work & Economic Growth | 0                       | Job created: 31<br>Trainings conducted: 20 | <b>Job created: 31</b><br><b>Trainings conducted: 20</b> |
| 13  | Climate Action                | 42,611 tCO <sub>2</sub> | 209 tCO <sub>2</sub>                       | <b>42,401 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>4</sup> achieved during this monitoring period |
|-----|------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 7   | 50,428 MWh                                                                         | 49,933 MWh                                                        |
| 8   | Jobs: 32<br>Trainings: 1 per annum                                                 | Jobs: 31<br>Trainings: 20                                         |

<sup>4</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.

|    |                         |                         |
|----|-------------------------|-------------------------|
| 13 | 42,824 tCO <sub>2</sub> | 42,401 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                                     |
|-------|---------------------------------------------------------------------------------|---------------------------------------------|
| 2023  | $(43,224 \div 12 \text{ months}) \times 10 \text{ months} = 36,020 \text{ MWh}$ | Crediting period start date: 1 March 2023   |
| 2023  | $(43,224 \div 12 \text{ months}) \times 4 \text{ months} = 14,408 \text{ MWh}$  |                                             |
| Total | <b>50,428 MWh</b>                                                               | Estimated power generation: 43,224 MWh/year |

#### **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                                                     |
|-------|-----------------------------------------------------------------------------------|-------------------------------------------------------------|
| 2023  | $(36,706 \div 12 \text{ months}) \times 10 \text{ months} = 30,588 \text{ tCO}_2$ | Crediting period start date: 1 March 2023                   |
| 2024  | $(36,706 \div 12 \text{ months}) \times 4 \text{ months} = 12,235 \text{ tCO}_2$  |                                                             |
| Total | <b>42,824 tCO<sub>2</sub></b>                                                     | Estimated emission reduction: 36,706 tCO <sub>2</sub> /year |

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

>>

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

## 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 and quarterly safety trainings for security and O&M during 2023 to 2024. One climate change related training was also conducted in 2023.

## SECTION G. STAKEHOLDER INPUTS AND LEGAL DISPUTES

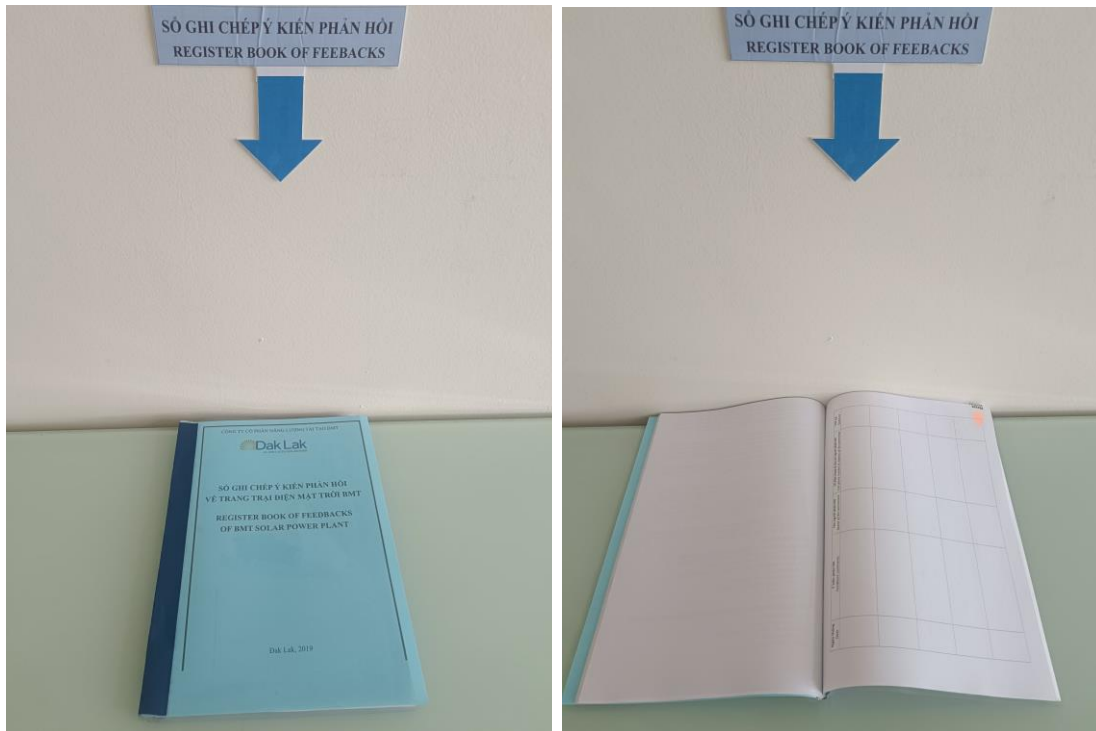
**G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.**

>>

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:<br>Mr Hua Minh Duc (Plant Director)<br>+84 903 399 375                                                                                                              |                                                                                    |
| Internet/email access                                | Project Proponent:<br>Mr Hua Minh Duc<br><a href="mailto:duc.hua@ami-acrenewables.vn">duc.hua@ami-acrenewables.vn</a>                                                                  | Gold Standard:<br><a href="mailto:info@goldstandard.org">info@goldstandard.org</a> |

The pictures of grievance register as follows:



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