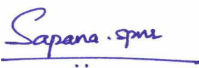




**Validation report form for
CDM project activities
(Version 04.0)**

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title of the project activity	BMT Solar Farm
Scale of the project activity	☒ Large-scale / Non Microscale (GS Classification) ☐ Small-scale
Version number of the validation report	01.2
Completion date of the validation report	11/02/2020
Version number of the PDD to which this report applies	Version 03 – 21/10/2019 Version 04 – 02/01/2020 Version 05 – 20/01/2020 Version 06 – 11/02/2020
Date when PDD was uploaded for global stakeholder consultation	Not Applicable as this is GS project
Project participants	BMT Renewable Energy Joint Stock Company (BMTRE) C&W Services (S) Pte. Ltd.
Host Party	Socialist Republic of Vietnam
Applied methodologies and standardized baselines	ACM0002: Grid-connected electricity generation from renewable sources (Version 19.0)
Mandatory sectoral scopes	TA 1.2
Conditional sectoral scopes, if applicable	Not Applicable
Estimated amount of annual average GHG emission reductions or GHG removals by sinks	36,706 tCO ₂ /Annum
Name and UNFCCC reference number of the DOE	Bureau Veritas (India) Pvt Ltd E-0009
Name, position and signature of the approver of the validation report	 Sapana Pednekar – Global Quality Manager

SECTION A. Executive summary

Bureau Veritas has made the validation of the BMT Solar Farm on the basis of specific criteria i.e. Gold Standard GS4GG as well UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the GS Secretariat, CDM Executive Board, as well as the host country criteria.

The main purpose of the project activity is to generate electrical energy through sustainable means using Solar power, to utilize the generated output for selling it to the grid and to contribute to climate change mitigation efforts. This renewable energy will partially substitute the electricity currently evacuated into the grid by the thermal power plants, thus contributing to the sustainable development of the region socially, environmentally and economically.

The proposed project activity has an installed capacity of 30MW with 86,940 number of solar PV Panels connected to central inverter technology through DC arrays consist of solar photovoltaic modules with monocrystalline cells. A dedicated substation with a power transformer rated at 40MVA to step up the grid to 22kV to 110kV. The transmission voltage to the grid shall be at 110kV.

The annual estimated electricity generation by the Project Activity, also referred to as "Power Generation Capacity", is 43,224 MWh and the annual estimated emission reductions are 36,706 tCO₂e.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas internal procedures.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix 4. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas opinion that the project correctly applies the baseline and monitoring methodology ACM 0002 version 19.0 and meets all the relevant GS4GG and UNFCCC requirements for the CDM and the relevant host country criteria. Bureau Veritas thus requests the registration of the project as a Gold Standard project activity.

SECTION B. Validation team, technical reviewer and approver

B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Validation findings
1.	Team Leader	IR	Desai	Ram Madhukar	Bureau Veritas Brunei	X	X	X	X

2.	Translator	OR	Pham	Duong	Vietnam			X	
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B.2. Technical reviewer and approver of the validation report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Ngyuen	Hong Linh	BV Vietnam
2.	Approver	IR	Pednekar	Sapana	BV India

SECTION C. Means of validation

C.1. Desk/document review

>> The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas' internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 02.0 of the Clean Development Validation and Verification Standard /Ref-B10/ for Project Activity, issued by the CDM Executive Board at its 93rd meeting on 03/03/2017. The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

Document review:

The Project Design Document (PDD) /Ref-P1/ submitted by the PP BMT Renewable Energy Joint Stock Company for the BMT Solar Farm Project and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (CDM-PDD), Approved methodology, GS4GG, Kyoto Protocol, Clarifications on Validation Requirements to be checked by a Designated Operational Entity were reviewed.

To address Bureau Veritas' corrective action and clarification requests, BMTRE revised the PDD and resubmitted it in October 2019. The Latest version of the PDD is Version 6.0 Dtd. 11/02/2020.

C.2. On-site inspection

Duration of on-site inspection: 19/09/2019 – 21/09/2019				
No.	Activity performed on-site	Site location	Date	Team member
1.	Management Interview: • Project Design and implementation; • Technical Equipment and operation • Compliance with National Laws and regulations. • Early consideration • Additionality • Local stakeholder consultation and resolution of their concerns • Supporting data, evidences and documentation • Environmental Impacts • Monitoring System at site	BMT Project Office	19/09/2019	Ram M. Desai
2.	Site Visit: - Meeting Local Stakeholders to understand their views and concerns about the Project Activity - Confirming that BMT Solar Farm Project Authority had conducted a	BMT Project Office and Site	20/09/2019	Ram M. Desai

Duration of on-site inspection: 19/09/2019 – 21/09/2019				
No.	Activity performed on-site	Site location	Date	Team member
	formal Stakeholder Consultation Meeting. - Project Site Round – Plant Room, Substations, Transformer yard, Solar panel field. Etc.			
3.	Document Review: - Pre-project documents like FSR, various Approvals, Environmental Assessment Study documents, etc; - Financial Additionality documents; - Prior consideration; - PLF study report; - Implementation - QA/QC procedures - Qualification & Training - Monitoring records - Cross-check data - ER calculations	BMT Project Office	19/09/2019	Ram M. Desai
4.	Stakeholder interview – With General People and group of experts	BMT Project Office	20/09/2019	Ram M. Desai
5.	Stakeholder interview – Authorities	Commune Office	21/09/2019	Ram M. Desai
6.	Stakeholder Interview – NGO's	BMT Project Office	21/09/2019	Ram M. Desai
7.	Close Meetings - Summary of Findings - Follow up actions	BMT Project Office	21/09/2019	Ram M. Desai

C.3. Interviews

No.	Interviewee		Date	Subject	Team member
	Name of Stakeholder	Affiliation			
1.	Y NAM	Common Stakeholder	20/09/2019		
2.	Y LAN	Common Stakeholder			
3.	Y SOON	Common Stakeholder			
4.	H NAMI	Common Stakeholder			
5.	Y GUT	Common Stakeholder			
6.	V NUT	Common Stakeholder			
7.	V TAI	Common Stakeholder			
8.	Y GOE	Common Stakeholder			
9.	Y RON AYUN	Common Stakeholder			
10.	Y BHUN NIE (Former)	Common Stakeholder			
11.	Y PHE KTLA	Common Stakeholder			
12.	H' SEM NIE	Common Stakeholder			
13.	Y KIM AYUN	Common Stakeholder			
14.	H NGHIEM NIE	Common Stakeholder			
15.	H NHUNG AYUN	Common Stakeholder			
16.	Y IO AYUN	Common Stakeholder			
17.	Y BLIU NIE	Common Stakeholder			
18.	H NHUNG AYUN	Common Stakeholder			
19.	NGUYEN HOANG THINH LOI	Common Stakeholder			
20.	NGUYEN THI PHUONG	Common Stakeholder			
21.	H THAO NIE	Common Stakeholder			
22.	TRUONG HONG QUANG	Government	21/09/2019		
23.	LE XUAN DUONG	Government			
24.	LE THI BICH THUAN	Government			
25.	NGUYEN THI LANH	Government			
26.	NGUYEN DOAN	Government			
27.	HUA DUC TUNG	Government			
28.	NGUYEN QUOC HUNG	Government			

No.	Interviewee		Date	Subject	Team member
	Name of Stakeholder	Affiliation			
29.	LÊ THỊ BÍCH THUẬN	Government			
30.	VŨ NGỌC TRUNG	Government			
31.	TRẦN THỊ NGÀ	Government			
32.	H NHAL BYA	Government			
33.	SÂM THỊ CẢNH	Government			
34.	VO HUU CHUT	Government			
35.	HIEU	Government			
36.	NGAY	Government			
37.	HAULY	Government			

C.4. Sampling approach

>>>>There was no sampling followed for validation.

C.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Purpose and general description of project			
Eligibility of the project under Gold Standard			
Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project			
Technologies and/or measures	1	1	
Scale of the project			
Funding sources of project		1	
Assessment that project complies with 'gender sensitive' requirements			
Reference of approved methodology			
Applicability of methodology			
Project boundary			
Establishment and description of baseline scenario		1	
Demonstration of additionality	1	1	
Relevant target for each of the three SDGs	1		
Explanation of methodological choices/approaches for estimating the SDG outcome			
Data and parameters fixed ex-ante for monitoring contribution to each of the three SDGs			
Ex-ante estimation of outcomes linked to each of the three SDGs			
Summary of ex-ante estimates of each SDG outcome		1	
Data and parameters to be monitored		1	
Sampling plan			
Other elements of monitoring plan			
Analysis of social, economic and environmental impacts			
Solicitation of comments from stakeholders			
Summary of comments received			
Report on consideration of comments received			
Total	3	6	0

SECTION D. Validation findings

D.1. Demonstration of prior consideration of the CDM

Means of validation	From the PDD submitted for validation and corrected PDD after site visit it was noted that the Project is the Retroactive Type of Project and as per the GS4GG PRINCIPLES & REQUIREMENTS /Ref-B3/, section Prior Consideration 4.1.49 (b)
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	if the Project Type is Retroactive project, then PP shall submit the required documents for preliminary review (time of first submission) within one year of the project start date. From the project time line it was noted that PP has submitted documents for the preliminary review to Gold Standard in the month of June 2019/Ref-P8/. The start date of the project was validated using the Certificate of Investment Decision /Ref-P30 / Dated 31st August 2018, which the legal document is issued by the Peoples Committee of Dak Lak Province, department of Planning and Investment, where PP has committed to invest for the project activity. The start date identified as 31st August 2018 is found in accordance with the definition of the start date. The Preliminary review was completed by GS in June 2019 /Ref-P8/ , which is within One year from the Start date of Project Activity and hence the Condition 4.1.49 (b) is satisfied and hence it is concluded that project participant is serious in considering this project for the Gold standard certification.
Findings	NIL
Conclusion	Based on the above assessment, in line with Section 4.1.49 (b) of GS4GG Principles and Requirements as well as paragraph 46 of VVS version 02 for project activity, the Bureau Veritas hereby confirms that the proposed CDM project activity complies with the requirements of the prior consideration of CDM.

D.2. Identification of project type

Means of validation	The Project Participant has correctly identified the project activity as Large Scale Project Activity in accordance with paragraph 34 of CDM Project Standard Version 2 for project activity /Ref-B11/. The template of the PDD used by the Project Participant at the time of Preliminary review is found to be latest and the version is 1.1 – August 2017. Validation team noted that all relevant sections of the PDD are completed correctly using appropriate instructions provided in the PDD form.
Findings	NIL
Conclusion	In accordance with paragraph section 7.3 of VVS version 02 of the project activity, the Bureau Veritas confirms that the type of the project activity is appropriately determined. Also the PDD is completed in the latest available form using correct instructions provided therein the PDD form.

D.3. Description of project activity

Means of validation	BMT Solar Farm is a greenfield grid-connected photovoltaic solar power plant project which is constructed on a 36-hectare property in EA Phe Commune and Krong Puk Commune, Krong Pak District, Dak Lak Province, Vietnam. This land is the state owned land leased by the PP for the project activity. The project is owned by BMT Renewable Energy Joint Stock Company. The project has a total installed capacity of 30MW, with a predicted power generation of 43,224 MWh per annum. The entire electricity generated by the solar farm will be fed into the Vietnam national grid without any Greenhouse Gas (GHG) emissions. The operational lifetime of the solar farm is 25 years. Currently the electricity supplied by the grid is relatively carbon intensive, with a combined margin emission factor of 0.8492 tCO₂/MWh. The electricity generation through this project will be resulted in the emission reductions on account of electricity generation by 36,706 tCO₂e/year and total emission reduction for the 1st crediting period 5 years will be 183,530 tCO₂e. The purpose of the project activity is to generate electricity based on renewable and clean energy sources by utilizing the Solar power potential available in the Dak Lak Province of Vietnam and to supply the same to meet the energy demand in host country Vietnam. The technology involved in the project is Photovoltaic (PV) which converts sunlight directly into electricity using semiconductors that exhibit the photovoltaic effect. PV power generation employs solar panels composed of a number of solar cells containing a photovoltaic material. The materials presently used for PV include monocrystalline silicon, polycrystalline silicon, amorphous silicon, cadmium telluride and copper indium selenide/sulphide.
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	The project design includes central inverter technology connected to the DC arrays consist of solar photovoltaic modules with monocrystalline cells. A dedicated substation with a power transformer rated at 40MVA to step up the grid to 22kV to 110kV. The transmission voltage to the grid shall be at 110kV. The installed 30MWp solar plant is divided into 7 Photovoltaics Station (PVS), each station is connected to the central inverter, MV transformer and a MV switchgear. The DC array connected to each PVS will be divided in several String Combiner Boxes (SCB) which consist of PV strings connected in parallel, each of the string consists of 30 modules which are connected in series. The Solar PV modules are mounted on galvanized steel structure with aluminium sub rails, with 4 modules in portrait orientation at 7° tilt angle. A supervisory Control and Data Acquisition (SCADA) system controls the plant and monitors the health status of the solar power plant to ensure the solar plant operates under optimum conditions. The project activity is expected to result in a reduction in the anthropogenic emissions of greenhouse gases (GHG's) into the atmosphere, which is estimated to be approximately 36,706 tCO_{2e} per year, by displacing the equivalent amount of electricity generation through the operation of fossil fuels based power plants in grid. The validation team hereby confirms that the project description in latest PDD (Ref P3) is accurate and complete in all respects and that there are no major changes to the project activity/design or boundary as compared to the webhosted PDD.
Findings	CL 01 / CAR 01 / CAR 02
Conclusion	In accordance with paragraph 56 of VVS Version 2 for Project Activity, Bureau Veritas hereby confirms that the project description in latest PDD is accurate and complete in all respects and that there are no major changes to the project activity/design or boundary as compared to the webhosted PDD. All CL's and CAR's raised during validation as mentioned above are closed satisfactorily based on the relevant corrections and evidences submitted by PP. and PDD version 3 is found to be addressing all reported findings.

D.4. Assessment of eligibility of Project under Gold standard as well as Application and selection of methodologies and standardized baselines

D.4.1. Assessment of eligibility of Project under Gold Standard

Means of validation	The steps taken to assess the relevant information contained in the PDD against each eligibility criteria of Gold Standard for the Project as per Section 3.1.1 of GS4GG Principles & Requirements /Ref-B3/ are described below. PP has described how BMT Solar farm project meets the eligibility criteria in the PDD section A.2. PP has assessed all the criteria and relevant justifications are provided to demonstrate the eligibility of project. Eligibility criteria as per GS4GG principles and requirements : <i>A Project type is automatically eligible for Gold Standard Certification if there are approved Gold Standard Activity Requirements and/or Gold Standard Impact Quantification Methodologies associated with it or as referenced in Gold Standard Product Requirements. These are published to the Gold Standard website and shall be followed where provided for a given Project type</i> Based on the validation of PDD and site visit observations it is confirmed that the project implemented is Renewable Energy Project i.e. Solar power plant connected to the Vietnam Grid. The Project capacity is 30MW and hence it is classified as Large scale project. In order to develop the project PP has used ACM 0002 as an Approved CDM Methodology. All these project implementation aspects are found to be in accordance with 1.1.1 a) and 1.1.1 b) of the Eligible Project Types & Scope under Renewable Energy Activity Requirements. Hence it is concluded that the project activity meets the eligibility criteria.
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	<i>For Project types that are not automatically eligible, a Project Developer may submit to Gold Standard for approval. This shall be done at minimum as part of the Preliminary Review, though it is recommended to engage with Gold Standard earlier to establish the criteria and requirements for approval;</i> As confirmed in the above eligibility criteria, Project activity is automatically eligible for the Gold standard certification, it is not required to submit the project activity to Gold standard for approval, and however PP has submitted the project to gold standard for the Preliminary review in the month of June 2019. <i>Project types applying for Gold Standard approval are referred to the Gold Standard Vision and Mission. The Project Developer shall demonstrate how the Project would contribute to these and how the Gold Standard for the Global Goals Requirements would be met in their application for approval</i> This eligibility criteria is not applicable for this project activity as the implemented project is a Photovoltaic Solar project which is an approved project type as per “GS Activity Requirements” and does not require any prior approval from Gold Standard. This is found correct and hence accepted. <i>In reviewing a new Project type for approval, Gold Standard may establish new Requirements to be met by the Project in order to achieve Gold Standard Design Certification and ongoing Gold Standard Certified Project status. Where required, Gold Standard shall engage expert peer reviewers to establish these Requirements, at the Project Developer’s expense</i> This eligibility criteria is not applicable for this project activity as the implemented project is a Photovoltaic Solar project which is an approved project type as per “GS Activity Requirements” and does not require any prior approval from Gold Standard. This is found correct and hence accepted. <i>Gold Standard does not support Project types associated with geo-engineering or energy generated from fossil fuel or nuclear, fossil fuel switch, or any project that supports, enhances or prolongs such energy generation. In certain cases, concerning energy efficiency involving fossil fuels (for example, LPG stoves), an exception is made. This is captured in the relevant Activity Requirements, Gold Standard Approved Methodologies and/or Product Requirements</i> Based on the Validation of PDD, relevant supporting documents and site visit, it is confirmed that the implemented project is a renewable energy project which generates electricity using solar radiation i.e. Photovoltaic technology, and hence it is concluded that the project activity is not associated with geo-engineering or energy generated from fossil fuel or nuclear, fossil fuel switch, or any project that supports, enhances or prolongs such energy generation. Hence it is concluded that the project is eligible under this criteria.
Findings	NIL
Conclusion	The validation team hereby confirms that the project activity implemented by the PP is in accordance with Section 3.1.1 of GS4GG Principles & Requirements as well as Renewable Energy Activity Requirements.

D.4.2. Application of methodologies and standardized baselines

Means of validation	The steps taken to assess the relevant information contained in the PDD against each applicability condition are described below. The proposed Gold Standard Project Activity “BMT Solar Farm Project” uses the approved methodology ACM 0002 version 19.0 (Ref B8). Applicability of the methodology: <i>Applicability Condition 3:</i> <i>This methodology is applicable to grid-connected renewable energy power</i>
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generation project activities that:

- (a) Install a Greenfield power plant;*
- (b) Involve a capacity addition to (an) existing plant(s);*
- (c) Involve a retrofit of (an) existing operating plants/units;*
- (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or*
Involve a replacement of (an) existing plant(s)/unit(s).

The project activity is an implementation of 30MW Solar power plant using photovoltaic technology. This solar power plant is a greenfield project, hence condition (a) is satisfied. Validation Team has confirmed this through various documented evidences i.e. Board decisions /Ref-P30/, EPC contract /Ref-P35/, Land lease documents, and government approvals on the project implementation.

The project activity is a Greenfield Solar Power Plant /Ref-P20/. There was no existing Solar Power Plant at the site (as physically verified by the validation team during the site visit). Thus, this applicability condition is applicable to the project activity.

Applicability Condition 4(a):

The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;

This condition is applicable as the project activity involves implementation of greenfield Solar power Plant, which is considered as renewable energy generation plant. This was confirmed during site visit as well using Technical Specifications /Ref-P20/ of the project equipment's installed at the project site.

Applicability Condition 4(b):

In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.

This condition is also not applicable as the project activity is a greenfield Solar power plant and there is no capacity additions, retrofits, rehabilitations or replacements are involved. The same has been verified during the physical site visit carried out by the validation team. This project activity is a Greenfield project. No Solar Power plant existed at the project site earlier. The information has been physically verified by the validation team during the site visit.

Applicability Condition 5:

In case of hydro power plants, one of the following conditions shall apply:

- (a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or*
- (b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation (3), is greater than 4 W/m²; or*
- (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m²; or*
- (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m², all of the following conditions shall apply:*
 - (i) The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m²;*

	(ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be: a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydropower project. This condition is not applicable as the project implemented is not a Hydro Power Plant. <i>Applicability Condition 6:</i> In the case of integrated hydro power projects, project proponent shall: (a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or (b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity. This condition is not applicable as the project implemented is not a Hydro Power Plant. <i>Applicability Condition 7:</i> The methodology is not applicable to: (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; (b) Biomass fired power plants/units. This condition is not applicable as this is a Solar Power plant project and does not involves Switching of fuels. It is and exclusively renewable energy project. <i>Applicability Condition 9:</i> In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance". The project activity implemented is a greenfield solar power plant and hence this condition is not applicable.
Findings	NIL
Conclusion	The validation team hereby confirms that the selected baseline and monitoring methodology, ACM 0002, Version 19.0 (Ref B3) which is previously approved by the CDM Executive Board, is applicable to the project activity which complies with all the applicability conditions therein.

D.4.3. Deviation from methodology and/or methodological tool

Means of validation	There was no deviation from the selected methodology ACM0002 version 19 sought by the Project Participant for the proposed project activity from UNFCCC Secretariat.
Findings	Not applicable

Conclusion	Bureau Veritas confirms that there was no deviation from the selected methodology.
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D.4.4. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	There was no clarification on applicability of methodology, tool and/or standardised baseline to the proposed project activity has been issued.
Findings	Not applicable
Conclusion	Bureau Veritas confirms that there was no clarification on applicability of methodology, tool and/or standardised baseline.

D.4.5. Project boundary, sources and GHGs

Means of validation	GS4GG Principles and Requirements Version 1.1, March 2018, VVS Version 02 for Project activity (paragraph 69 – 74) The validation team has validated the project boundary against the guidance provided in the methodology ACM 0002 version 19.0 (RefB4). The methodology refers that <i>“The spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system that the CDM project power plant is connected to”</i>. The spatial extent of the project boundary was assessed through the site visit, and the description in the PDD submitted at the time of site visit. As per the description it is observed that the project is connected to the national grid of Vietnam which is covered in the project boundary. The structure of the National Grid was verified through EVN website as well as through the report on “The Analysis of Emission Factor of Vietnam Grid” the Climate Change Department, Ministry of Natural Resource and Environment (MONRE) /Ref-P18/. The geographical boundary of the project includes Solar Panels, Inverters, Transformer and transmission lines etc. The physical site inspection was carried out on 19/09/2019 during which the project boundary description in the PDD /Ref-P1/ was validated. At the time of the site visit, the validation team observed that the project is already installed and operational to supply electricity to grid.
Findings	NIL
Conclusion	PP has described the boundary correctly and the demonstration of the Project boundary found in accordance with the following criteria - GS4GG Principles and Requirements Version 1.1, March 2018 - VVS Version 02 for Project activity (paragraph 69 – 74) - Approved Large Scale methodology ACM 0002 version 19.0

D.4.6. Baseline scenario

Means of validation	The steps taken to assess the requirement given in paragraph 76 - 83 of the VVS for Project activity are described below: Validation team assessed the baseline identification by the project participant using the provisions of the applied methodology. As per the identification of Baseline scenario of the applied methodology ACM 0002, version 19.0 /Ref-B8/, the baseline scenario is “electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”/Ref-B9/. The project activity involves the installation and operation of a greenfield solar power plant which will be supplying the power to the Vietnam National grid. The baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants connected to Vietnam National Grid that are displaced due to the proposed project activity. Thus, Baseline emissions are calculated as the product of electricity produced by the power plant, multiplied by the grid emission factor, i.e. Combined Margin Emission Factor.
	$BE_y = EG_{PJ, y} * EF_{grid, CM, y}$

Where,

BE_y baseline emissions in year y (t CO₂/yr);

EG_{PJ,y} quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh/yr);

EF_{grid,CM,y} Combined margin CO₂ emission factor for grid connected power generation in year y (t CO₂/MWh)

The Emission Factor has been calculated in a transparent and conservative manner as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system', version 07.0 (Ref B9).

Project participant has used official data from the Climate Change Department, Ministry of Natural Resource and Environment (MONRE) /Ref-P18/ on generation and emissions of power plants in Vietnam Dtd. 29/03/2019, which was the latest available officially published database at the time of site Visit.

In section B.4 of the PDD, the project participant has explained the Grid Composition i.e. Share of different types of Generation plants i.e. Import of electricity from China, hydro power 37.6%, Coal fired power 34.3%, Gas fired 17.3%, Oil fired 3.3% others included diesel, small hydro, renewables 5.8%. This itself indicates that the share of renewable energy in the grid is negligible and this makes the National Grid of Vietnam as carbon intensive grid.

The statement is in accordance with the methodological choice provided in ACM 0002 Version 19.0. The detailed computation of the power generation by the power plants during 2016 - 2018 is provided in the PDD. This information was cross checked through publically available information i.e.

- The Analysis of Emission Factor of Vietnam Grid" report issued by Climate Change Department, Ministry of Natural Resource and Environment (MONRE) /Ref-P18/
- Vietnam Electricity (EVN) – Annual report 2017 /Ref-P23/

The validation of Operating margin and Build margin emission factors was carried out by the team and the same is explained as below:

1. The Operating Margin emission factor for Vietnam National grid (0.8336 tCO₂/MWh)

The operating margin emission factor provided by the project participant is based on the Simple Operating Margin i.e. as per option (a) in the Tool. This option is selected as the total electricity output of the power sources has low operating cost or has to run (i.e. Low Costs must run resources) 50% of the electricity output of the entire electricity system. This conclusion is made based on the average of last 5 years energy generation. The data provided in the report is found transparent and can be cross checked with the authority i.e. Climate Change Department, Ministry of Natural Resource and Environment (MONRE) /Ref-P18/.

The method adopted to calculate the Simple Operating Margin is in accordance with the Tool to calculate emission factor for an electricity system. Hence, the same was accepted by the validation team. PP has used 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.

2. The Build Margin emission factor for combined grid (0.8961 tCO₂/MWh)

The build margin emission factor provided by the project participant is based on the past three recent years 2015, 2016 and 2017 and it is in accordance with the "Tool to calculate emission factor for an electricity system" /Ref-B9/. The project participant has used the latest available officially published data from The Ministry of Natural Resource and Environment (MONRE) has obtained the historical data from "National electricity system regulation centre".

3. Combined margin CO₂ emission factor for combined grid in year y. (0.8492 tCO₂/MWh)

	The combined margin emission factor provided by the project participant is based on the operating margin and build margin emission factors of the combined NEWNE and Vietnam grid as reported above. The project participant has correctly applied the weightage for Operating margin as $wOM = 0.75$ and weightage for build margin as $wBM = 0.25$, as the project activity involves installation and operation of Solar Power plant. These applied weights are found suitable owing to their intermittent and non-dispatchable nature. This is also in accordance with Para 86(a) of the Tool 07, "Methodological tool: Tool to calculate the emission factor for an electricity system", Version 07.0. /Ref-B9/. The Combined margin emission factor is the Ex-ante fixed parameter as stated in the PDD and it will fixed for the crediting period, as stated in the PDD section B.6.3 as well as in B.7.1 (Monitoring plan). This is as per the monitoring methodology ACM 0002. Version 19.0 /Ref-B8/ The validation team has also confirmed that the computation of the operating and build margin and the combined margin, carried out by the Project Participant in the PDD and the ER spread sheet /Ref-P10/, is in accordance with the latest version of the Tool to calculate the emission factor for an electricity system, version 7.0 /Ref B9/. The validation team further notes that the background data used for the baseline emission factor computation is provided by DNA of host Country Vietnam. The provisions of paragraph 64 of EB 43 in this regard are therefore not applicable. Also, validation team cross verified from public domain about any National and/or sectoral policies available in the Host Country which give comparative advantages to less emissions-intensive technologies over more emissions-intensive technologies. However, no such policies were found to be available for proposed project activity.
Findings	CAR 03
Conclusion	Based on the above assessment, Bureau Veritas Certification hereby confirms that: - All the assumptions and data used by the project participants are listed in the PDD, including their references and sources; - All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD; - Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable; - Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD, if applicable; - The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity. Hence it is concluded that the Baseline identification is complying to the following criteria - GS4GG Principles and Requirement, Version 1.1, March 2018, Section 3.1.2 Definition of Baseline and Project Scenarios - VVS paragraph 76 - 83 - Approved Large Scale Methodology ACM0002, Version 19.0

D.4.7. Demonstration of additionality

Means of validation	The steps taken and sources of information used, to cross-check the information contained in the PDD on this matter are described below: The additionality of the Project activity was assessed on the basis of Methodological Tool 1, Tool for the demonstration and assessment of additionality, Version 07.0.0 and the review of documents indicated in the assumptions in post-tax Equity IRR spread sheet with default benchmark as
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prescribed in the Annex A of EB 62 Annex 05 i.e. "GUIDELINES ON THE ASSESSMENT OF INVESTMENT ANALYSIS"

PP has demonstrated additionality in accordance with the requirement specified in the Methodological Tool for demonstration and assessment of additionality, Tool, Version 07.0.0. The step by step description for demonstration of additionality is provided by PP in the PDD Section B.5. The conclusion on the assessment of the additionality is provided as below.

Outcome of Step 1a:

- It is confirmed that the proposed Gold standard project is not the first of its kind in the host country and hence Step 1 is applicable.
- As per step 1, PP has identified and explained the alternatives available for the project and how these alternatives are realistic and credible. Outcome of sub step 1a resulted in 3 alternatives as per the requirement of tool and these alternatives are justified by PP based on Vietnam Government's policy on the Electricity generation and distribution. As published Power Development Plan VII on 18 March and by Decision No. 428/QĐ-TTg, the Prime Minister has approved the adjustment of National Power Development Plan VII (hereinafter referred to as PDP 7 rev) for the period of 2016 – 2030 with the vision to 2030. /Ref-P45/
- Compared to the PDP 7 of July 2011, the most obvious changes in the PDP 7 rev is a stronger emphasis on Renewable Energy development and on power market liberalization /Ref-P46/, hence the Alternative 1 identified and justified by PP is realistic and credible as Vietnam government is focussing on the improving the Renewable Energy share and even if PP do not go for the CDM / GS revenue this type of project can be implemented in host country, though PP encountering an investment barrier as the payback period is slightly longer.
- Alternative 2 i.e. Construction of some other renewable or thermal plant with the same annual power output is also justified as realistic and credible outcome as it is emphasized by Vietnam government that the growing demand of energy shall be met with self-sufficiency by 2030 and in order to achieve that Government is encouraging investment in power generation sector and welcomes Renewable / thermal energy generation plants for installation. Hence this alternative also applicable and in accordance with government policies hence acceptable.
- Alternative 3 : Continuation of the current situation (no project activity or other alternatives undertaken) – This situation is not possible as there are several initiatives taken by Vietnam Government as described in the PDP 7. Meeting growing energy demand is one of important agenda and hence continuation of current situation i.e. no project activity or other alternatives undertaken is not a credible / realistic alternative.

Outcome of Step 1b:

- Based on the understanding of Vietnam Energy sector and latest Power Development Plan 7 it is confirmed that alternative 1 & Alternative 2 are identified and explained are found realistic, credible and are in compliance with mandatory legislation and regulations taking in to account the decisions on national and/or sectoral policies and regulations in host country Vietnam. /Ref-P47/

Outcome of Step 2:

Investment Analysis

The project participant has demonstrated the additionality of the project activity using the investment analysis approach. The proposed Gold Standard project activity is a grid connected renewable energy generation project that will supply electricity to the Vietnam National grid. Electricity generated by the project activity would be sold at a tariff rate agreed and hence, revenue additional from the gold standard revenues would accrue from such sale. Hence, applying the simple cost analysis (of Option I of the Sub-Step 2(a) of the Tool for the demonstration and assessment of additionality is not considered. The comparison method of investment analysis as per Option II of the Sub-step 2(a) is also not appropriate as the Project participant's investment decision was not based on the selection of competing alternatives.

The only alternative to the project activity would have been the generation of power

in the grids from connected fossil fuel plants, which is a continuation of the situation that already prevailed at the time of the decision.

The project participant has selected benchmark analysis (as per Option III prescribed in the Tool) for the demonstration of additionality. The alternative to the project activity is the supply of electricity from the grid, hence the choice of investment benchmark analysis is appropriate.

The financial indicator selected for the investment analysis is post-tax Equity IRR and is compared with a nominal benchmark calculated using Default value for the cost of equity (Expected return on Equity) for the host country Vietnam under Group 1.

Hence, the validation team has concluded that the choice of Benchmark analysis by the project participant is appropriate and in accordance with Tool for the demonstration and assessment of additionality version 7 of EB 70 Annex 8, in line with the Tool for Investment Analysis version 8.0 of EB 97 Annex 8 and "Guidelines on the Assessment of Investment Analysis", EB 62 Annex 05.

Validation of Input Parameters (as required by paragraph 102 a of the VVS version 2.0 of EB 101 Annex 2):

Before assessment of the IRR calculations /Ref-P9/, the validation team has validated the basic input parameters listed in the PDD and spread sheet of investment analysis in accordance with VVS requirements. All the assumptions made in the investment analysis are listed below along with supporting validation justification for each of those assumptions.

The decision of setting up BMT Solar Farm Project was taken on 31/08/2018. This was validated using the Investment Certificate /Ref-P30/ issued by the Department of Planning and Investment, this is clearly mentioned that the PP i.e. BMT Renewable Energy Joint Stock Company is officially investing in the Solar Farm project on 36.5 Hectare area in Dak Lak Province.

The assumptions made in the investment analysis are from sources available to the project participant at the time of the decision date. This was validated by the Bureau Veritas team. All the assumptions considered by the project participant are obtained from various documents. The date of decision for setting up the project activity is 31/08/2018. The input values presented in the PDD can be regarded as valid and applicable at the time of the PP's investment decision. The PDD has used the same values for the investment analysis presented. This was confirmed by the validation team through a review of various source documents. The validation team confirms that the input values considered in the investment analysis meet the requirements of paragraph 10 of the EB 101 Annex 11 Tool for Investment Analysis and also the paragraph 102 (a) of the VVS version 2.0.

Parameter, Value	Validation Justification
Project Capacity in MW 30.0	Based on the assessment of following supporting documents it is confirmed that the Project capacity is 30 MW, which is the installed capacity. - Investment Certificate issued by the Department of Planning and Investment, Peoples Committee of Dak Lak /Ref-P30/ - Appendix B of PPA signed by PP with the EVN./Ref-P12/ - PVsyst Report on simulation of Power generation issued by the ERS (EPC Contractor) /Ref-P14/ - Technical Specifications of Solar panels /Ref-P20/
Project Cost (termadas Capex) in million USD 29.81	The Project cost is determined based on the EPC Agreement /Ref- P-35/ signed by PP with the EPC contractor ERS Energy Sdn Bhd on 31 st August 2018 and the Loan Agreement signed by PP with VinaBank Limited on 20 th September 2018. In the Loan agreement /Ref-P17/ with bank it is seen that PP borrowed sum of 474 Billion Vietnamese dong which is equivalent to 20.88 Million USD (at Exchange rate of 22700VND / USD) And the Equity Share by the Project participant i.e. 8.94 Million USD. Hence the total project cost = Debt amount + Equity amount 20.88 Million USD + 8.94 Million USD = 29.81 Million USD. Further the Project cost is crosschecked based on the theoretical assumptions against the Solar Photovoltaic Technology brief published by IEA-ETSAP and IRENA © Technology Policy Brief E11 – January 2013 - www.etsap.org - www.irena.org , it is confirmed that

		the cost of investment is in the range of USD 920/kW – USD 950/kW, if it is extrapolated to the 30000 kW which is the project installed capacity it comes to 27.6 Million USD to 28.5 Million USD. The evidences provided by the PP to justify the Project cost found satisfactory and hence acceptable.	
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	Inflation rate 3.80%	The inflation rate is determined from the International Monetary Fund Website for the host country Vietnam. PP has applied average of five year inflation rate i.e. Year 2019 – 2024. (https://www.imf.org/external/datamapper/PCPIPCH@WEO/WEOWO/RLD/VNM) Which is equivalent to the 1st crediting period for the proposed GS project activity and this is found in accordance with the Tool 27, i.e. Methodological Tool for the Investment Analysis, Para 16, hence acceptable. The Approach is found satisfactory and conservative hence accepted.
	Annual Energy Generation, in Million KWh 43	Total annual energy generation is sourced from the Technical Document i.e. Simulation report generated using PVsyst Software where several project specific inputs are provided i.e. number of sunny days in year, Ambient Temperature, Annual irradiations, Project Locations etc. PVsyst software calculates the power outcome considering system losses. PP has presented a conservative value of 43.0 Million KWh as the annual energy generation by the Solar power plant. This report is generated by the EPC contractor ERS Energy Sdn Bhd. /Ref-P14/ This is also supported by the Technical Specifications of Solar Panel provided by the manufacturer.
	Annual degradation in Power Generation per year 0.5%	For a Solar power plant the energy generation is depending on the productive life of solar panels and the electricity production from these panels over time depend on factors such as climate, module type, and racking system, among others. The reduction in solar panel output over time is called degradation. And this degradation is generally accounted as 5% per annum. This is confirmed using the publically available research paper on Solar power plant. https://www.nrel.gov/state-local-tribal/blog/posts/stat-faqs-part2-lifetime-of-pv-panels.html This is also compared with the Technical specification of Solar panel /Ref-P21/ where it is reported that the productive lifetime of the solar is 25 years and by that time it is generating only 88% of the design power output. The Value of degradation considered by the PP is found to be conservative and hence acceptable.
	Maintenance Cost with escalation of 0% in maintenance charges, 0.22 Million USD	PP has considered 0.22 Million USD as the Base Maintenance cost per annum and this is a calculated cost using O& M Agreement /Ref-P15/ signed between ERS Energy Sdn Bhd and PP. As per the agreement PP has agreed to pay O&M Contractor 218,680 USD for the 1st year maintenance. This cost is further cross checked with the theoretical maintenance cost determined by Solar Photovoltaic Technology brief published by IEA-ETSAP and IRENA © Technology Policy Brief E11 – January 2013 - www.etsap.org - www.irena.org. As per this technology brief document average maintenance cost per annum for Solar power plant is estimated as 1% of the total investment cost. Hence the theoretically calculated cost based on this estimation is 0.2981 Million USD which is higher than that of the cost which is considered by the PP. Based on the cross verification it is concluded that the maintenance cost assumed by the PP as 0.22 is conservative and appropriate to the project technology and hence it is acceptable.
	Power Tariff, 0.0935 USD/kWh	PP has signed a Power Purchase Agreement with Central Power Corporation /Ref-P12/ on 9th November 2018. Validation Team Verified the Signed contract Number 11/2016/HD-NMT-BMT, where the Power tariff is mentioned as 0.0935 USD / kWh. This is the real and agreed figure which is available for the investment analysis. The rate is fixed much in advance and hence there is no change found in the Tariff rate. At the time of Validation site visit validation team took few month samples of electricity bills/ invoices raised by the PP to EVN towards the sales of the power to grid. In these invoices PP has applied the agreed rate of tariff i.e. 0.0935 USD/ kWh /Ref-P25-27/

	Debt-Equity ratio, 70:30	The Debt-Equity ratio is referred from Agreement signed between PP and the VinaBank Limited where bank has agreed to sanction loan of 474 Billion Vietnamese dong which is equivalent to 20.88 Million USD (at Exchange rate of 22700 VND / USD). From the Investment Certificate issued by the Department of Planning and Investment it is confirmed that PP will be investing 8.94 Million USD as Equity Share. Thus the ratio of Debt to Equity comes to 70:30. /Ref-P30/ & /Ref-P16/
	Loan repayment 15 years with 5.6% interest on the loan	The Loan tenure and interest on it is referred from loan agreement /Ref-P17/ signed between PP and VinaBank Limited dated 20th September 2018, the loan repayment is referred to be 15 years with interest on the loan at the rate of 5.6% from the date of the loan disbursement. This interest rate is based on the LIBOR (London Interbank Offered Rate) as mentioned in the below statement from the Loan Agreement document. . <i>The loan interest rate (~) 5.6% annum, shall be reviewed every three months at the beginning working date of every quarter (in Jan, Apr, Jul, Oct) based on LIBOR (London Interbank Offered Rates) 03 months plus maximum margin of 3.5% (maintaining the minimum loan interest rate of 5.6%/p.a.), in accordance with the prevailing monetary market situation and in accordance with law regulations.</i> The loan repayment and interest rate are found to be real and credible supporting evidences are available for the validation.
	Project lifetime, 25 years	25 years and 00 months – Life time of project is identified by PP is found correct. The Life time of the project equipment is determined based on the Technical Specification /Ref-P21/ of the Solar Panels provided by the Manufacturer i.e. SERAPHIM SOLAR SYSTEM CO. LTD, The Value obtained is based on the Linear Power Output Warranty curve in the Specification. Which mentions that the Power output of 88.68 can be achieved up to 25 years after Installation of Solar Panel.
	Corporate Income Tax Rate 20%	The Income Tax considered by project participant is the tax rate applicable in the host country Vietnam wherein the project activity is located in the Dak Lak province. As per the Corporate tax Law in the host country Vietnam it is mandatory to ensure that 20% of investment cost is to be paid by the project participant as corporate income Tax. This was confirmed using Law on Corporate Income Tax Pursuant to the 1992 Constitution of the Socialist Republic of Vietnam, which was amended and supplemented according to Resolution No. 51/2001 / QH10; https://translate.google.com/translate?hl=en&sl=vi&u=https://moj.gov.vn/vbpg/lists/vn%2520bn%2520php%2520lut/view_detail.aspx%3Fitemid%3D12821&prev=search
The investment analysis, including the appropriateness of input values, financial computations and adherence to accepted and standard accounting principles and practice was validated by the financial specialist within the team. The team confirms that the analysis presented in the PDD is consistent with the IRR spread sheet /Ref-P9/ submitted by the PP. Benchmark The project participant has considered Cost of equity (expected return on equity) and selected default value for the host country Vietnam provided in the Appendix; applicable at the time of investment decision as the investment benchmark for the project activity. As per EB 101 Annex 11 Investment tool paragraph 19. PP has selected 14.00 as the default value under Group 1 as the project activity is classified as an Energy Industry, i.e. the project generates renewable energy and exports the same to the Vietnam national Grid. This selection is found satisfactory and in accordance with the Investment Tool, Version 8.0, EB101 Annex 11. The default value is in the real term and hence PP has converted it to nominal term by adding inflation rate applicable for the host country. PP has provided transparent calculation of the nominal benchmark in the IRR calculation spreadsheet. The method applied for calculating the nominal benchmark is proven and it referring to the published book on Corporate Finance, Second Edition by Aswath Damodaran. The Formulae used for the calculation is Nominal Benchmark = {(1 + Real Benchmark)*(1 + Inflation Rate)}- 1 W here: Real Benchmark - is sourced from Appendix. Default values for cost of equity (expected return on equity) in publically available document i.e. Tool 27 –		

"Methodological Tool", EB101 Annex 11, Version 8.0 and the value applied is 14.00.

Inflation Rate – is sourced from the International Monetary Fund Website. As per latest information available on website

<https://www.imf.org/external/datamapper/PCPIPCH@W EO/W EOWOR LD/ VNM>, it is confirmed that the inflation rate applied i.e.3.23% is correct and applicable at the time of investment decision.

With the above values considered, the Cost of Equity (Expected Return on Equity) is computed in the PDD as **18.33 %**. The detailed computation is provided in an excel spreadsheet (Ref/P16/) which was validated and found to be correct and also meets the requirement of paragraph 102 (b) of the VVS version 2.0.

The project IRR value (**8.08 %**) is thus much lower than the benchmark computed (**18.33%**) . The investment analysis, in the opinion of the validation team, demonstrates that the project activity is not economically viable for the PP without revenues that could supplement those only from the sale of power generated.

The investment analysis therefore demonstrates the project activity to be additional as required by paragraph 96 of the VVS version 2.0.

Sensitivity Analysis

In order to demonstrate the robustness of the conclusion arrived at above, viz., that the project is additional, the project participant has subjected the four critical input parameters to the investment analysis- PLF, Project cost, O & M cost, Power tariff rate to a sensitivity of +/-20% in the IRR spreadsheet (Ref/P15/) and B.5 of the Webhosted PDD.

It has been noted that the above four parameters are likely to affect the project IRR computation significantly because they contribute to 20% of either the project costs or the project revenues. The criteria adopted meet the requirement of paragraph 27 of the EB 101 Annex 11 Tool for investment analysis.

The range of variations (+/-20%) on which the sensitivity analysis has been carried out is in accordance with paragraph 28 of the EB 101 Annex 11 Tool for Investment Analysis version 8.0, which requires that at least a range of variation from -10% to +10% be covered by such an analysis.

The results of the sensitivity analysis for the IRR computation are as follows:

Variations	0%	-20%	-10%	-5%	0%	5%	10%	20%
Total Project Investment	8.08%	11.53%	9.68%	8.85%	8.08%	7.34%	6.64%	5.34%
Electricity Tariff	8.08%	-3.10%	3.06%	5.66%	8.08%	10.39%	12.64%	17.09%
Power Generation	8.08%	-3.10%	3.06%	5.66%	8.08%	10.39%	12.64%	17.09%
O&M Costs	8.08%	8.60%	8.34%	8.21%	8.08%	7.94%	7.81%	7.54%
Benchmark		18.33%	18.33%	18.33%	18.33%	18.33%	18.33%	18.33%

The results indicate that the IRR value continues to remain below the benchmark, even with the parameters undergoing the range of variation of +/-20%.

The validation team, therefore, concludes that the sensitivity analysis carried out in the section B.5 of the revised PDD and in the IRR spreadsheet serves to establish that the analysis is robust over a range of variations in the input values. The validation team concludes that the additionality of the project activity is established in accordance with paragraph 99 (e) of the VVS version 2.0, as it is established that the project activity remains additional even when there is a range of variations in the principal input values.

The validation team, supported by the assessment by its financial expert hereby confirms that the underlying assumptions are appropriate, the financial calculations are correct and that the project is additional (Refer paragraph 102 c of the VVS version 2.0).

Barrier analysis

There is no barrier analysis is considered by the PP and the hence the Step3 is skipped. This decision was validated by the validation team using the applied Tool

i.e. Tool for Demonstration and assessment of Additionality, Version 07.0.0. As per Tool the barrier analysis is optional and the Barrier analysis can be done if after the sensitivity analysis both conditions given below are not met.

1. It the proposed project activity is unlikely to be the most financially attractive
2. Or is unlikely to be financially attractive

Since Sensitivity analysis results in the situation where the project activity is neither unlikely to be most financially attractive nor it is unlikely to be financially attractive, the barrier analysis is not required.

Common Practice Analysis (CPA)

The Tool for the Demonstration and Assessment of Additionality Version 7.0.0 requires the project participant to demonstrate that the project activity is not common practice. For this purpose, the Tool refers to latest CDM guidelines on common practice which must be applied. The latest guideline [version 3.1] on demonstrating common practice is also another methodological tool of EB 84 Annex 7 viz., Common Practice Tool. The latter has specified a step-wise approach to test whether or not a proposed CDM project activity could be regarded “common practice”.

PP has described the Common Practice Analysis in the PDD and the validation team has reviewed the same. The projects that must be taken for comparison with the project activity are those that

1. Fall within +/-50% of the output capacity of the project activity. This range is therefore 15 MW to 45 MW, since the capacity of the project activity is 30 MW. (Step 1 of EB 84 Annex 7 tool for Common Practice)
2. Are identified as similar CDM as well as non-CDM projects that are located in the same geographical area (in the case of the project activity, this area is the host country Vietnam); use the same energy source as the proposed project activity (considered “Solar Power plants” in the case of the PP project activity); produce services with comparable quality, properties and application areas as the proposed project activity (in the case of the proposed project activity, the Solar Power Plants taken for comparison are those generating electric power which is exported to the grid and can therefore be regarded as producing services of comparable quality, properties and application); fall within the capacity range identified at Step 1, (viz., 15 MW to 45 MW) and lastly have begun commercial operation before the date of publishing of the PDD or the start date of the project activity, whichever is earlier. (Step 2 of EB 84 Annex 7 tool for common practice)

The PP has identified Zero projects that satisfy the criteria of Step 2 of the Common Practice tool. As there is no project which is implemented in the range of 15 MW – 45 MW before the start date of the proposed project activity i.e. BMT Solar Farm. All projects which are implemented or in the process of implementation and construction are above the selected range i.e. above 50MW capacity.

This information is validated using publically available information i.e. Press release issued by EVN. And EVN website for the list of projects which are operational in the Capacity range 15MW – 45 MW.

Based on validation conclusion it is confirmed that there is no project found implemented in the capacity range 15MW – 45 MW in the Host Country before the Start date of the proposed Gold standard project i.e. BMT Solar Farm.

3. **Are neither registered CDM project activities, nor project activities submitted for registration, nor project activities undergoing validation (Step 3 of the EB 84 Annex 7 tool for common practice).** - From the background check on the following authentic information sources it is concluded that there is no project in the capacity range of 15MW – 45 MW which either registered / Submitted for registration or project undergoing validation. – Hence the description provided by the PP i.e. No projects identified under Step 2 and therefore,

$N_{all} = 0$

Background check is performed on following information sources

- UNFCCC Website

	- Gold Standard Project Registry - VCS Project Registry - CD4CDM Website for the CDM Projects and CDM PoA Projects. 4. Are identified as applying technologies different from the proposed project activity, and their number designated N_{diff}, as per Step 4 of the EB 84 Annex 7 Common practice tool). – Since there is no project is identified under Step 2, hence in Step 3 also there is no project identified which is different in applying the technology than the proposed project activity. therefore, $N_{diff} = 0$ As per the Step 5 it is required to check two conditions to confirm whether the proposed project is a common practice or not. PP has checked these conditions and the resultant outcome is 1. $F=1-N_{diff}/N_{all}$ - since N_{diff} and N_{all} are equal to zero, based on the assessment results of Step 3 and Step 4, the resultant F value is equal to infinity, which is lesser than 0.2 and hence it is concluded that the proposed project is not a common practice in a given sector. 2. The difference $N_{all} - N_{diff}$ - since N_{diff} and N_{all} are equal to zero, based on the assessment results of Step 3 and Step 4, the difference between N_{diff} and N_{all} is also Zero. This confirms the condition prescribed in the Para 18 of Methodological Tool “Common Practice” Version 03.1 as the result is lesser than 3, the project is not a Common Practice. shown by the above step-wise analysis to be 0 and hence the and since both values are 0 the resultant outcome of
Findings	CL 02 / CAR 06

Conclusion	Based on the assessment described above, the validation team of Bureau Veritas confirms that the project activity of PP is additional and is demonstrated to be additional in line with the requirements of - EB 70 Annex 8 Tool for the demonstration and assessment of additionality version 7.0 and - According to paragraph 86 of the EB 101 Annex 2 VVS version 2.0. - Guidelines on the assessment of investment analysis- Ver 05.0 EB 62 Annex 5 - Tool For Investment Analysis Version 8.0 and Version 9.0 - Tool for Common Practice Analysis Version 3.1 - Guidelines for Objective Demonstration and assessment of Barriers, Version 01. All the above findings raised by the validation team were closed and the latest PDD i.e. PDD Version 3 is addressing these findings correctly.
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D.4.8. Estimation of emission reductions or net anthropogenic removals

Means of validation	The project emission has been discussed in the revised PDD. For ex-ante estimation of the emission reductions, the project emissions have been considered as zero in the PDD being submitted for registration. This is because of the following reasons: The project activity involves installation and operation of greenfield Solar Power Plant. No leakage emissions have been considered for the project activity in accordance with the relevant guidance provided in the applied methodology ACM 0002, version 19.0. The algorithm to calculate the emission reductions from the project activity is described as; $ER_y = BE_y - PE_y$ Where, ER_y = Emission Reduction in tCO₂/year BE_y = Baseline emission in tCO₂/year PE_y = Project emissions in tCO₂/year The estimated annual average emission reduction is 36,706 tCO₂e. The validation team confirms that the estimates of baseline emissions can be replicated using the information provided in the revised PDD and emission reduction spread sheet being submitted for registration. The validation team further confirms that assumptions have been consistently applied in both emission reduction calculations and investment analysis spread sheet.
Findings	NIL
Conclusion	Based on the Assessment of emission reduction calculation approach as presented in PDD by the PP, it is confirmed that the information presented on the Emission reduction calculation approach is correct and this also demonstrates the compliance towards the methodological requirements The Calculation requirements were assessed against following requirements ✓ Para 110 – 113 of validation and verification standard for Project of activities Version [CDM-EB93-A05-STAN – Version 02.0] ✓ GOLD STANDARD FOR THE GLOBAL GOALS PROGRAMMES OF  ✓ ACTIVITIES REQUIREMENTS Version 1.1 – Published March 2018 ✓ GOLD STANDARD FOR THE GLOBAL GOALS PRINCIPLES & REQUIREMENTS, Version 1.1 – Published March 2018 ✓ Approved Large Scale CDM Methodology ACM 002, Version 19.0

D.4.9. Monitoring plan

Means of validation	PP has established and described the monitoring plan in the PDD section B.7.1. From the assessment of the monitoring plan it is concluded that PP has identified all those relevant parameters which are required by the Applied large scale methodology to develop the project activity i.e. ACM 0002 version 19.0 as well as relevant SDG indicators prescribed by the Gold Standard in GS4GG Principle and Requirements. PP has selected following SDG indicators for the monitoring - 7.2.1 – Renewable energy share in the total final energy consumption - 8.5.1 – Average hourly earnings of female and male employees, by occupation, age and persons with disabilities - 8.8.1 – Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status - 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 According to the methodology, and GS4GG, the relevant monitoring parameters for this project activity are EG_y : Quantity of net electricity generation supplied by the project plant to the grid in the monitoring period (this parameter as per the methodology has to be monitored according to the “EB 96 Annex 5 Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” v3) This parameter is also helps in monitoring the contribution towards SDG 7.2.1 i.e. renewable energy share in the total final energy consumption – Since the Electricity generated and exported to grid is equal to the EG_y . The validation team confirms that the above parameter, required by ACM 0002, is included by the project participant in the monitoring plan of the PDD at section B.7.1 therein The monitoring plan has stated that measurement of EG_y will be done by bi-directional energy meters installed at the sub-station located at the project site. Bi-directional energy meters monitor both electricity supplied to and drawn from the grid and the energy meters record value of net electricity export by the project activity (i.e. export minus import from grid). The measurement is on a continuous basis and is recorded every month. The energy meter readings are further crosschecked with the EVN Sub Station Meters and then the monthly bill is raised. The export Electricity meters will undergo calibration according to procedures that follow industry standard practice; EC_{PJ,i,y} : Quantity of electricity consumed by the project activity form grid. This parameter will be monitored to support the SDG indicator 7.2.1. PP has established bidirectional energy meters at the power plant. These meters monitors the electricity exported from the plant to the grid as well as electricity imported from grid to the plant for axillary consumption i.e. lighting, Air conditioning etc. The monitoring requirements against this parameter is defined in the section B.7.1 and this information is found in accordance with the methodological requirements as well as SDG monitoring requirement. The monitoring is done on continuous basis and it is found correct. Under SDG 8.5.1- Employees’ monthly wages – To demonstrate how the project activity helps in contributing sustainability in terms of 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’. PP has selected Employees Monthly wages as the monitoring parameter and monitors the Gender wise wages provided during project phase as well as operation phase. The arrangement for the monitoring found satisfactory. This also provides opportunity of employment for the local people residing in the province and neighboring area of BMT sola Plant.
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Under SDG 8.8.1 - No of Fatal & Non-fatal injuries

The purpose of this parameter is “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” – This is monitored from the data of Accidents and incidents occurring during operational phase. PP has relevant HSE Reporting arrangement where monthly analysis of accident and incidents happening at the project is done and reviewed by the management. Based on the Accident and incident rate management initiate actions to prevent recurring incidents and accidents. The Implementation of monitoring arrangement found satisfactory and hence acceptable.

Under SDG 13.3.2 - No of awareness programmes

The purpose of this parameter is to monitor “Climate Action - Take urgent action to combat climate change and its impacts”, PP has decided to create awareness amongst the key stakeholders regarding the climate change and mitigation measures. This will be monitored through Training attendance records and number of training conducted. The monitoring arrangement found to be satisfactory.

The monitoring plan described in the PDD meets the monitoring requirements of the Gold Standard GS4GG Principles and Requirements as well as ACM 0002 methodology version 19.0 along with the tools referred to by the methodology.

Apart from the Monitoring parameters to be monitored Ex-post, there are few parameters which PP has fixed Ex-ante and this parameters are defined in the PDD section B.6.3. PP has identified following parameters which are fixed Ex-ante and does not need monitoring.

- **EF_{grid,OM,y}** - Operating Margin CO₂ emission factor for the electricity system in year y – PP has applied value 0.8336 tCO₂/MWh, this value is obtained from the Published Report on Grid Emission Factor for Vietnam Grid and the report is published by the DNA of Vietnam i.e. The Ministry of Natural Resource and Environment (MONRE), by using the latest data available for the past three recent years 2015, 2016 and 2017. The historical data on electricity generation in the Vietnam Grid is sourced from “National electricity system regulation centre”. Based on the assessment of the published report by MONRE it is confirmed that the Calculation of the Operating Margin emission Factor is correct, please refer to the Section D.4.6 above in this report for the validation of Grid Emission Factor. The Calculation presented in the MONRE report is in accordance with the “Tool to calculate the emission factor for an electricity system, version 07.
- **EF_{grid,BM,y}** - Build Margin CO₂ emission factor for the electricity system in year y – PP has applied value 0.8961 tCO₂/MWh, this value is obtained from the Published Report on Grid Emission Factor for Vietnam Grid and the report is published by the DNA of Vietnam i.e. The Ministry of Natural Resource and Environment (MONRE), by using the latest data available for the past three recent years 2015, 2016 and 2017. The historical data on electricity generation in the Vietnam Grid is sourced from “National electricity system regulation centre”. Based on the assessment of the published report by MONRE it is confirmed that the Calculation of the Build Margin emission Factor is correct, please refer to the Section D.4.6 above in this report for the validation of Grid Emission Factor. The Calculation presented in the MONRE report is in accordance with the “Tool to calculate the emission factor for an electricity system, version 07.
- **EF_{grid,CM,y}** - Combined Margin CO₂ emission factor for the electricity system in year y – PP has applied value 0.8492 tCO₂/MWh, this value is obtained from the Published Report on Grid Emission Factor for Vietnam Grid and the report is published by the DNA of Vietnam i.e. The Ministry of Natural Resource and Environment (MONRE), by using the latest data available for the past three recent years 2015, 2016 and 2017. The historical data on electricity generation in the Vietnam Grid is sourced from “National electricity system regulation centre”. Based on the assessment of the published report by MONRE it is confirmed that the Calculation of the Combined Margin emission Factor is

	correct, please refer to the Section D.4.6 above in this report for the validation of Grid Emission Factor. The Calculation presented in the MONRE report is in accordance with the "Tool to calculate the emission factor for an electricity system, version 07.
Findings	CL 03 / CAR 05
Conclusion	All the findings raised were responded to satisfactorily by PP. The validation team confirms that the monitoring plan in the PDD is in compliance with the ACM 0002 methodology applied to the project activity. The provision of measuring instruments such as energy meters described in the monitoring plan are assessed to be at appropriate points of measurement and thus it can also be confirmed that the monitoring arrangements are feasible within the project design and can be implemented by the PP. PP has identified and described the relevant arrangement for Monitoring of SDG indicator in the PDD and it is found in accordance with the Gold Standard Safeguarding Principles and Requirement Version 1.2, 23/10/2019

D.5. Start date, crediting period type and duration

Means of validation	The Start Date, crediting period type and duration was validated by the validation team using primary information provided in the PDD section C.1 and C.2.	
	PP has provided secondary information i.e. supporting evidences to arrive at Start Date of project activity as well as Start date of Crediting period. The Information validated during site visit and found credible and in accordance with the Applicable Validation criteria. The Validation conclusions are provided in the below table.	
		BMT Solar Farm Project
	Start Date	31/08/2018 The Start date of the project was validated using the “Engineering, Procurement & Construction – EPC”, agreement /Ref-P35/. PP signed this agreement on 31/08/2018 and hence it is considered as the real action towards the project implementation as has made the commitment to make the expenditure for the construction and installation of 30 MW solar Power plant at project location in Dak Lak Province. The EPC agreement was signed between BMT Energy Renewable Joint Stock (PP) and ERS Energy Sdn Bhd (EPC Contractor)
	Expected Operational Life time	25 years and 00 months – Life time identified by PP is found correct. The Life time of the project equipment is determined based on the Technical Specification /Ref-P21/ of the Solar Panels provided by the Manufacturer i.e. SERAPHIM SOLAR SYSTEM CO. LTD, The Value obtained is based on the Linear Power Output Warranty curve in the Specification. Which mentions that the Power output of 88.68 can e achieved up to 25 years after installation of Solar Panel.
Type and Duration of crediting period	Renewable - 15 years, 0 months	

	Start Date of the crediting period. 01/05/2019 Start Date of Crediting period is the date on which project start generating and exporting electricity to the Grid. Although the Actual Commissioning of solar power plant was completed on 25/04/2019, however for the conservative purpose and to streamline the Crediting period duration PP has Identified the Start Date of Crediting period as 01/05/2019. These dates were verified using Commissioning Certificates /Ref-P36/, issued by the EPC Contractor ERS Energy Sdn Bhd and EVN This is found correct and hence it is acceptable.
Findings	NIL
Conclusion	The validation team concludes that the project participants have correctly determined the start date of the project activity as per paragraphs 80 of the Project Standard version 2.0. The crediting period has been chosen as a 'Renewable' for the period of 15 (Fifteen) years, which is as per paragraph 87 (a) of the PS version 2.0. The PDD has stated at section C.2 that the start date of the crediting period would be 01/05/2019. The project participant has therefore met the requirements of paragraphs 85 – 91 of the PS version 2.0. The expected operational lifetime of the project activity is specified at section C.2 of the PDD as '25 years'. Hence, the requirement of paragraph 86 of the PS version 2.0 is also met by the project participant.

D.6. Social, Economic and Environmental impacts

Means of validation	PP has analyzed relevant Social, Economic and Environmental Impacts which are associated with the project implementation and the summary of the analysis is provided in the PDD section D.1. The information provided in this section was validated against the requirement of Gold Standard “Safeguarding Principles and Requirements”, Version 1.1 Dated 1st March 2018. It is concluded that PP has identified safeguarding principles in following categories SOCIAL & ECONOMIC SAFEGUARDING PRINCIPLES – Under this category PP has identified following Safeguarding principles for the assessment		
	Safeguarding Principle	Assessment	Validation Conclusion on Assessment Question, Justification and Mitigation measures identified by PP
	Human Rights	No	There is no Human right violations observed as BMT is following the country laws on human right violations and it is ensured that the continued compliance toward this requirement is observed. Host Country Vietnam has ratified INTERNATIONAL HUMAN RIGHTS (1948) and country laws are aligned to this requirement. There is no additional mitigation measure required. Based on the assessment of information provided in the PDD is found credible and reliable.
	Gender Equality and Women's Rights	No	There is no violation to the Gender equality and women's rights was observed during the project construction phase. PP has employed women during construction phase as well as operation phase, the wages, salary provided to women found to be in accordance with local labour codes- PP is ensuring compliance towards the Labour codes, general labour and employment acts - Labour Code (10/2012/QH13). Since PP is following Labour code strictly and ensures compliance on continual basis, there is no additional mitigation measures required to be implemented towards this safeguarding principle.
	Community Health Safety and Working conditions	Yes	Since there is a possibility of exposure to health and safety risk to the community and persons working on behalf of the project, PP has identified that there is an impact to this safeguarding principle although there is a specific law in host country i.e. Labour Code - Law No. 10/2012 / QH13. In order to avoid any risk PP has identified the mitigation measure i.e. continuous trainings on health and safety to create awareness amongst employees as well as people working on behalf of the Project during operation phase.
	Cultural Heritage Indigenous, peoples displacement and Resettlement	NO	The project installation and operation does not involve in the damaging of cultural heritage, or displacement and resettlement of the people. The project is installed on the State land which is not used for any settlement or there is no agricultural activities were happening. This was confirmed during site visit and interactions with the stakeholders. The ownership of land utilized for the project installation was verified using relevant documentation and found satisfactory and hence

			it is concluded that the assessment outcome provided by PP in the PDD found correct.
	Corruption	NO	The project activity is not involved in any corruption related activities and it is demonstrated by PP that during project construction phase there is no corruption is observed. Host country Vietnam has ratified UN convention against Corruption in 2007 and PP observes strict compliance to the requirement of controls on corruption. Since the anti-corruption law is already implemented in Vietnam in 2015 as Anti-Corruption Law (Law No. 36/2018/QH14), there is no additional mitigation measures are required and PP shall be observing strict compliance to this law in continual manner.
	Economic Impacts	NO	Based on the Site visit and background information collected related to project, it is confirmed that the project does not employ any child labour and provides safe and healthy working conditions during all phases of the project and provides appropriate wages. This also confirms that there is no adverse economic impact due to the implementation of this project activity. In fact the project activity provides an employment opportunity and regular income to the people residing near to the project site. This helps the people to achieve sustainable economic growth and improved lifestyle.
	ENVIRONMENTAL AND ECOLOGICAL SAFEGUARDING PRINCIPLES: Under this category PP has identified following Safeguarding principles for the assessment		
	Safeguarding Principle	Assessment	Validation Conclusion on Assessment Question, Justification and Mitigation measures identified by PP
	Climate and Energy	No	The project activity involves generation of renewable energy from the natural resource i.e. Solar energy and the generated electricity is exported to the national grid. Hence it is concluded that there is no impact to the safeguarding principle "Climate and Energy". The project in fact contribute positively to the safeguarding principle and hence there is no additional mitigation measures are required.
	Water	No	The Project involves the generation of Solar power using photovoltaic panels, and hence there is no usage of water is involved in the project activity and there will be no water pollution is possible due to the implementation of BMT Solar Farm Project. Hence there is no additional mitigation measures are required. Justifications provided by the PP in PDD is found correct and acceptable.
	Environment, Ecology and Land Use	No	The Project involves the generation of Solar power using photovoltaic panels, hence project does not impact on

			- Land and soil usage for any project related activity – the project is installed on the state owned land leased by the PP. The State land is just a grassland and due to the project activity there is no change of Land use pattern. - It is also confirmed during the site visit is it confirmed that the project does not increases vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, draught or other environmental calamity. - Project is found to be in compliance with the relevant country specific Environmental Legislation i.e. Environmental Protection Law (Number: 55/2014/QH13) - Environmental Impact Assessment (EIA) for the project is done by the PP and relevant outcome of the EIA is considered to assess the Safeguarding principle. - Based on the overall assessment it is concluded that there is no additional mitigation measures are required and this is found correct.
Findings	NIL		
Conclusion	The validation team concludes that the Safeguarding principles are assessed and the results are found correctly defined and it is in accordance with - Safeguarding Principles and requirements – Version 1.1, Dated 1st March 2018. - PS version 2.0 paragraphs 92 & 93 that the project participant has carried out an analysis of the environmental impacts and also an environmental impact assessment in accordance with the host country requirements i.e. Vietnam.		

D.7. Local stakeholder consultation

Means of validation	As per Principle 3 “Stakeholder Inclusivity” as stated in the Para 3.4.3 of GOLD STANDARD FOR THE GLOBAL GOALS PRINCIPLES & REQUIREMENTS, Version 1.1 – Published March 2018, it is must that Projects shall identify and engage relevant stakeholders and seek expert stakeholder input where necessary in the design, planning and implementation of the Project. The Stakeholder consultation shall be conducted as per Gold Standard for the Global Goals STAKEHOLDER CONSULTATION & ENGAGEMENT PROCEDURE, REQUIREMENTS & GUIDELINES , Version 1.1 Validation team assessed the submitted Local Stakeholder Consultation Report by the PP and observed that the process is found in line with above mentioned requirements. PP ensured that 1st round of Local Stakeholder consultation process was conducted on site, PP has invited relevant Stakeholders through Email and other relevant means i.e. Individual invitation letter, Newspaper, Commune Notice
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Boards, Personal invitations. The evidences of these means adopted are provided transparently in the Stakeholder Consultation Report /Ref-P4/.

2nd Round of Stake holder consultation includes feedback and due diligence of the comments received during 1st round. This was also found transparently presented in the report, found satisfactory and in line with the Stakeholder consultation and engagement procedure requirements and guidelines.

The stakeholder consultation was conducted in three separate meetings as described below

Date Of Stakeholder Consultation	Type of Stakeholder Engaged during the meeting
26/03/2019	Local community people
27/03/2019	Women only
27/03/2019	Government authorities, NGOs & GS

PP has prepared a simple Power point presentation in local language to brief stakeholder on the project as well as sustainability parameters affected due to the implementation of project. PP has also engaged experts in the consultation and these experts are from agencies i.e. Government and NGO's.

PP has shared the assessment of Safeguard principles during stakeholder consultation and preformed exercise on blind sustainability assessment with stakeholders. The outcome of the Blind assessment is provided in the separate report i.e. "Blind Sustainability Assessment Report", where the assessment results performed by each stakeholder are provided and it was observed that there is no negative assessment is done by the stakeholder, most of the parameters are assessed as "Does not Impact".

PP has received few generic comments from the Stakeholders and those comments are found responded satisfactorily, there is no pending comment for the response. It is also observed from the comments received from Stakeholder that no technical, technology related comments received as the Project technology is simple and proven green technology and does not have significant environmental and societal impacts. It is also observed that the Solar power project is not a new project in host country and the project design and implementation is in line with the Standard Engineering practices.

PP has briefed all stakeholder during 1st and 2nd consultation that PP has established a mechanism for continuous input / grievance. Grievances / feed backs at any given point is welcomed through an Email and site based register.

Also During Validation Site Visit a small stake holder consultation round was arranged where same stake holders were invited who attended 1st Stake holder consultation. Validation team interacted with the Stake holders to understand their feedback on 1st stake holder consultation. Stakeholder provided positive opinion about the Project implementation as well as the 1st Stakeholder consultation PP conducted.

Validation Team also did a due diligence on the FAR's reported during Preliminary Review performed by the Gold Standard. During this preliminary review GS has reported 0 FAR's and requested Opinion of DOE on the Stake holder Consultation Process. During Site Visit Validation team reviewed both points and provided its opinion as below.

FAR # 1:

During Stakeholder Feedback Round, PP and DOE shall Note that all Stakeholders invited for the initial consultation shall be invited for further comments and SFR to be finalized prior or during Validation

Response to the FAR:

During Validation site visit DOE included interview of Stakeholder as one of the agenda for validation. In order to complete the objective of this validation agenda,

	PP arranged one Stake holder meeting on 20/09/2019 and 21/09/2019 and invited all those stakeholders who participated during 1st Round of Stake holder meeting. During site visit Validation Team witnessed the proceedings and then interviewed sampled group of stakeholders to understand their feedback about the project and last stakeholder consultation round. (For Category A and B) During this meeting all stakeholders residing in the province attended including all categories, except few NGO's and WWF representatives. For Government official PP arranged separate session on 18/09/2019 (For Category B, C and D) in the Commune Hall where one to one discussion on project and stakeholder feedback was done. A telephonic interview was arranged (for the Category F) i.e. Care International Vietnam and WWF however no contact could be established. Overall the 2nd Feedback round was satisfactory and no adverse feedback was noted. All Stakeholders are aware of the project implementation and benefits of the Project to the Environment. It was also understood that few local personnel have got employment during project construction as well as operational phase. PP is helping community by providing financial help to upgrade the school/ community buildings and also providing scholarship to the bright school going students. FAR#2 <i>As per the Raised comment by SC and PP's Response below Validating VVB shall provide opinion on if delivering invitations one week prior to the event had no negative impact in participation of the stakeholders under categories of all.</i> Response to the FAR: In Invitation process Government Authority and Commune heads are involved it is very fast in communicating invitations, and people are responding very promptly. Based on the Vietnam political Set up where Communist party is very much attached to the community and people responds to such invitations promptly. This was specifically asked during interview with Village leaders and Government officials. From the answers it was understood that the community people can be invited with 2 days notification also. Hence based on the witness of the Stakeholder attendance during Validation Site visit and the answer provided by Village leaders and Government officials it is concluded that there is no negative impact in the participation of the stakeholders under all categories.
Findings	Nil
Conclusion	Based on the Local Stakeholder Consultation process conducted by the PP and the solicitation of stakeholder comments obtained during the Local stakeholder consultation process as presented in PDD section E.1, E.2 as well as Local Stakeholder consultation reports submitted by the PP, it is confirmed that the procedure adopted for the Local Stakeholder consultation is in accordance with following specific requirements. ✓ Gold Standard for the Global Goals Stakeholder Consultation & Engagement Procedure, Requirements & Guidelines, Version 1.1 ✓ GOLD STANDARD FOR THE GLOBAL GOALS PROGRAMMES OF ACTIVITIES REQUIREMENTS Version 1.1 – Published March 2018 ✓ Para 3.4.3 of GOLD STANDARD FOR THE GLOBAL GOALS PRINCIPLES & REQUIREMENTS, Version 1.1 – Published March 2018 ✓ Approved CDM Large Scale Methodology ACM 0002, Version 19.0

D.8. Sustainable development co-benefits

Means of validation	Not Applicable for the Gold Standard Projects
Findings	Not Applicable
Conclusion	Not Applicable

D.9. Approval

Means of validation	Not Applicable for the Gold Standard Projects
Findings	Not Applicable
Conclusion	Not Applicable

D.10. Authorization

Means of validation	Not Applicable for the Gold Standard Projects
Findings	Not Applicable
Conclusion	Not Applicable

D.11. Modalities of communications

Means of validation	Not Applicable for the Gold Standard Projects
Findings	Not Applicable
Conclusion	Not Applicable

D.12. Global stakeholder consultation

Means of validation	Not Applicable for the Gold Standard Projects
Findings	Not Applicable
Conclusion	Not Applicable

SECTION E. Internal quality control

The validation report underwent an Internal Technical Review (ITR) before requesting registration of the project activity.

The ITR is an independent process performed to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as internal Bureau Veritas procedures.

The Team Leader provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This will be a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

- The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the validation exercise, review of sample documents.

The reviewer may raise Clarification Requests to the validation team and will discuss these matters with the Team Leader.

After the agreement of the responses to the Clarification Requests from the validation team as well as the PP(s), the finalized validation report is accepted for further processing such as submitting to Gold Standard.

SECTION F. Validation opinion

Bureau Veritas (India) Private Limited (BVIL) has performed a validation of the "BMT Solar Farm" Project Activity in host country Vietnam. The validation was performed on the basis of Gold Standard, UNFCCC and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Project participant used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides analysis of investment, technological and other barriers to determine that the project activity itself is not the baseline scenario.

By the description of the project as provided in earlier sections of the validation report, the project is likely to result in reductions of GHG emissions partially. An analysis of the investment and technological barriers demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions, viz; 36,706 tCO₂e per annum.

The review of the project design documentation (version 03) and the subsequent follow-up interviews have provided Bureau Veritas (India) Private Limited with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project activity correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria. BVIL thus requests registration of "BMT Solar Farm" as a Gold Standard project activity.

Appendix 1. Abbreviations

Abbreviations	Full texts
BMTRE	BMT Renewable Energy Joint Stock Company
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CM	Combined Margin
CO2	Carbon Dioxide
DNA	Designated National Authority
EB	Executive Board
EF	Emission Factor
EVN	Electricity Vietnam
EPC	Engineering Procurement and Construction
EIA	Environmental Impact Assessment
GHG	Green House Gases
GS	Gold Standard
GS4GG	Gold Standard For Global Goals
GW	Gigawatt
GWh	Gigawatt-hour
IPCC	Inter-Governmental Panel on Climate Change
IRR	Internal Rate of Return
kW	Kilowatt
kWh	Kilowatt-hour
LIBOR	London Interbank Offered Rate
MONRE	Ministry Of Natural Resource and Environment
MP	Monitoring Plan
MW	Megawatt
MWh	Megawatt-hour
NGO	Non-Governmental Organization
ODA	Official Development Assistance
O & M	Operation and Maintenance
OM	Operating Margin
PCP	Project Cycle Procedure
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PS	Project Standard
SDG	Sustainable Development Goals
tCO2	Tonnes of Carbon Dioxide
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
VVS	Validation and Verification Standard
VND	Vietnamese Dong

Appendix 2. Competence of team members and technical reviewers

Mr. Ram Desai	Bureau Veritas Certification, Brunei	Team Leader, Climate Change Lead Verifier, <i>Environmental Engineer with over all 13 years of experience in various industries related to Water & Waste water engineering design, installation & Commissioning, Integrated Facility Management for Environmental Services operations in various industries i.e Automotive, Pharmaceutical , IT & Electronics (With Clean Room).</i> <i>Management System Implementation and Maintenance, Green Building concept implementation, Lean Management Implementation, Water & Waste Water engineering Design & project Management, Project Environmental Compliance etc for a construction company.</i> <i>He is the lead auditor for Environment management system, Quality management system and Occupational health and safety management system and his auditing experience spans for 3 year with BVCI & BVCS. He has undergone intensive training on Clean Development Mechanism and was trained as Lead Verifier for CDM in the year 2005 and working as a lead Verifier for validation and verification of CDM/VCS projects</i>
Mr. Hong Linh Nguyen	Bureau Veritas Vietnam	Technical Reviewer, Climate change Lead Verifier: <i>He has graduated in Environmental Studies and had a Master Degree of Quality Management. He has undergone intensive training on Clean Development Mechanism. His working experience includes more than 7 years of auditing works in the field of Quality Management System and Environmental Management System. He has been involved in the validation / verification / technical review work of more than 30 GHG projects</i>

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
Documents related directly to the GHG components of the project activity				
P1	PP	PDD Version 01 – 01/04/2019		BMT
P2	PP	PDD Version 02 – 10/08/2019		BMT
P3	PP	PDD Version 03 – 21/10/2019		BMT
P4	PP	Stake Holder Consultation Report Version 2 – 10/08/2019		BMT
P5	PP	Blind SD Assessment Report		BMT
P6	PP	Attendance Register for the Stake holder Consultation		BMT
P7	PP	Meeting Evaluation Record		BMT
P8	GS	Preliminary Review under Gold Standard for the Global Goals for BIM Solar Farm (GS 7525) Version 1.1 Dtd. 10/06/2019.		BMT
P9	PP	IRR Spread Sheet for Investment Analysis		BMT
P10	PP	Emission Reduction Calculation Spreadsheet		BMT
P11	State Bank of Vietnam	0.Exchange Rate_VND and USD - The State Bank of Vietnam quoted the central rate of VND versus USD on 10/21/2019:		BMT
P12	EVN	1.HD mua ban dien EVN (PPA) & its Appendices - Power Purchase Agreement with EVN		BMT
P13	ERS	2.Mechanical Completion Certificate - Mechanical Completion Certificate for 30MW Solar Photovoltaic Power Plant issued by ERS Energy Sdn Bhd.		BMT
P14	ERS	4.PVsyst report Year 0 – 10 - PVsyst Report for the Simulation of the Power generation using PVSYST V6.75 issued by ERS Energy Sdn Bhd (Malaysia)		BMT
P15	ERS	5.O_M Agreement Schedule 3_Redacted - O&M contract Document for the price of annual maintenance services provided by the O&M Contractor ERS Energy		BMT

No.	Author	Title	References to the document	Provider
		Sdn Bhd		
P16	PVI Insurance	6.Insurance Policy - Engineering Package Policy – No. 18/25/07/PACK/P000033 issued by PVI Insurance Corporation for O&M works.		BMT
P17	IndoVina Bank	7.Loan Agreement - Loan Agreement Sr. No 37/2009.18/LTL/1033004 signed by PP with INDOVINA BANK LTD – Danang Branch		BMT
P18	MONRE	FN01_Grid EF_MONRE_29.03.2019 - Detailed Report on Emission Factor published by Ministry of Natural Resource and Environment for the Year 2017, Date of Publishing 29/03/2019		BMT
P19	BMT (PP)	FN03_Not registered with other scheme_Declaration - PP's Declaration that BMT Solar Farm is not registered with any other schemes other than Gold Standard, Dtd. 20/10/2019		BMT
P20	ERS	FN05a_Project Technical Specifications - Project Technical Specifications for BMT Solar Power Plant, Document No. BMT30-E-TS-6001.D, Dtd. 05/10/2019, issued by the EPC contractor ERS Energy Sdn Bhd		BMT
P21	Seraphim Solar System Co. Ltd.	FN05b_PV Module Seraphim 345Wp SRP-345-6MA-HV_EV - Technical Specification of Seraphim PV Modules – Provided by the EPC Contractor ERS Energy Sdn Bhd.		BMT
P22	SUNGROW	FN05c_Inverter SUNGROW SG3125HV_EV - Technical Specification for Sungrow Inverter BMT30-E-TS-1007.B - Inverter SUNGROW SG3125HV		BMT
P23	EVN	FN09_EVN Annual Report 2017 - Vietnam Electricity – Annual Report 2017 for demonstrating Baseline Scenario in power generation in host country Vietnam, Published by EVN		BMT
P24	National Assembly Vietnam	FN16_EIA Regulation - Regulations on environmental protection planning, strategic Environmental assessment, environmental impact assessment and environmental protection plan		BMT
P25	ERS	FN25a_Monthly Report June -2019 - Monthly Report on operation of Solar Power plant after commissioning of the Plant for Plant Performance and Energy Export to grid – generated by ERS Energy Sdn Bhd		BMT
P26	ERS	FN25b_Monthly Report July -2019 - Monthly Report on operation of Solar Power plant after commissioning of the Plant for Plant Performance and Energy Export to grid - generated by ERS Energy Sdn Bhd		BMT
P27	ERS	FN25c_Monthly Report Aug -2019 - Monthly Report on operation of Solar Power plant after commissioning of the Plant for Plant Performance and Energy Export to grid - generated by ERS Energy Sdn Bhd		BMT
P28	EVN	FN26_List of First 10 power plants - Progress of 10 Solar Power projects in host country Vietnam, a press release by EVN – this is used for demonstrating the Common Practice analysis.		BMT
P29	EVN	FN26a_Vietnam's First Mega Solar Power Plant - Press Release on 10/10/2018 for the 1 st Mega Solar power plant commissioning with installed capacity of 48 MW.		BMT
P30	Ministry of Planning and Investment	FN27_Investment Decision_31.08.2019 - Certificate of Investment Registration , Dtd. 31/08/2018, as per local law on Investment No. 67/2014 / QH13 Dtd. 26/11/2014 issued by the Ministry of Planning and Investment.		BMT
P31	ILO	FN30,38,43,46_Ratifications of ILO- Ratifications of ILO conventions: Ratifications for Viet Nam obtained from		BMT

No.	Author	Title	References to the document	Provider
		website https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:1200:0::NO::P11200_COUNTRY_ID:103004		
P32	UN	FN31_SDG8Goal 8 :.. Sustainable Development Knowledge Platform obtained from https://sustainabledevelopment.un.org/sdg8 - Documents provides detailed information on SDG 8.		BMT
P33	EVNEPTC	FN32_Calibration Records for the Meters - Calibration Report for the Electricity Meters installed at BMT Solar Power Plant – The Calibration is done by Electricity Trading Company (EVNEPTC) Dtd, 07/05/2019.		BMT
P34	Elster	FN33_Specification of Meter - Manufacturing specifications of Bi Direction, direct connected or CT Meters – A1700 Make Elster - installed at BMT Solar Power Plant -		BMT
P35	ERS Energy Sdn Bhd & PP	FN34_EPC Contract Document _Project Starting Date - EPC Contract Agreement signed between PP and ERS Energy Sdn Bhd, Dtd. 31/08/2018 – to demonstrate the start date of the Project		BMT
P36	EVNEPTC	FN35_COD agreement - Letter on the Approval of Commercial Operation Date By EVNEPTC, No.2126/EPTC-KDMD, Dated 21 st May 2019. – For the start date of the Energy Generation and export to the Vietnam National Grid.		BMT
P37	UN	FN36_Declaration of Human Rights		BMT
P38	ILO	FN37a_Labour Code		BMT
P39	International cooperation department	FN37b_Labour Code of Vietnam		BMT
P40	National Assembly Vietnam	FN39_Labor code		BMT
P41	UN Treaty Body - OHCHR	FN40,44,45_Human Rights		BMT
P42	National Assembly Office Vietnam	FN41_Law on Cultural Heritage		BMT
P43	UN Convention Against Corruption	FN42_Ratifications against corruption		BMT
P44	National Assembly Vietnam	FN47_Law on environmental protection		BMT
P45	EVN	Vietnam Power Development Plan VII (2011 – 2020)		AMI KH SOLAR
P46	EVN	Circular on Wind Development Potential – (https://translate.google.com/translate?hl=en&sl=vi&u=http://evnhanoi.vn/tin-tuc-evnhanoi/tiet-kiem-dien/5233-tiem-nang-phat-trien-dien-gio&prev=search)		AMI KH SOLAR
P47	Ministry of Industry and trade	Circular on PROVISIONS ON ORDER AND PROCEDURES FOR GRANTING AND WITHDRAWING PERMITS FOR ELECTRICITY ACTIVITIES (No. 36/2018 / TT-BCT) issued by MINISTRY OF INDUSTRY AND TRADE (https://thuvienphapluat.vn/van-ban/thuong-mai/Thong-tu-36-2018-TT-BCT-quy-dinh-ve-trinh-tu-thu-tuc-cap-thu-hoi-giay-phep-hoat-dong-dien-luc-397244.aspx)		AMI KH SOLAR

<u>Background documents related to the design and/or methodologies employed in the design or other reference documents</u>				
B1	GS	Gold Standard for the Global Goals - Key Project Information & Project Design Document (PDD) – Version 1.1 - August 2017		GS Website
B2	GS	Gold Standard for the Global Goals - Stakeholder Consultation Report - Version 1 – July 2017		GS Website
B3	GS	Gold Standard Principles & Requirements – Version 1.2, Dtd. 23/10/2019		GS Website
B4	GS	Gold Standard Safeguarding Principles and Requirements - Version 1.2, Dtd. 23/10/2019		GS Website
B5	GS	Gold Standard Principles & Requirements – Version 1.2, Dtd. 23/10/2019		GS Website
B6	GS	Gold Standard Renewable Energy Activity Requirements – Version 1.2, Dtd. 23/10/2019		GS Website
B7	GS	Gold Standard Validation & Verification Body Requirements – Version 1.0, Dtd. 1/03/2018		GS Website
B8	UNFCCC EB 100 Annex 6	ACM 0002, version 19.0 “Grid-connected electricity generation from renewable sources”		UNFCCC CDM website
B9	UNFCCC EB 100 Annex 4	Tool to calculate the emission factor for an electricity system, version 7.0		UNFCCC CDM website
B10	UNFCCC EB 101 Annex 2	CDM Validation and Verification Standard for Project Activities version 2.0		UNFCCC CDM website
B11	UNFCCC EB 101 Annex 1	CDM Project Standard for Project Activities version 2.0		UNFCCC CDM website
B12	UNFCCC EB 101 Annex 16	CDM Project Cycle Procedures for Project Activities version 2.0		UNFCCC CDM website
B13	UNFCCC EB 70 Annex 8	Tool for the demonstration and assessment of additionality, version 7.0		UNFCCC CDM website
B14	UNFCCC EB 101 Annex 11	Tool for Investment Analysis version 8.0		UNFCCC CDM website
B15	UNFCCC EB 96 Annex 5	Tool for baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation version 3.0		UNFCCC CDM website
B16	UNFCCC EB 84 Annex 7	Tool for Common Practice Analysis version 3.1		UNFCCC CDM website
B17	UNFCCC EB 48 Annex 11	Guidelines for the reporting and validation of PLF's version 1		UNFCCC CDM website
B18	UNFCCC EB 50 Annex 13	Guidelines for Objective Demonstration and Assessment of Barriers version 01,		UNFCCC CDM website
B19				

Appendix 4. 5Clarification requests, corrective action requests and forward action requests

Table 1. CLs from this validation

CL ID	01	Section no.	A.5	Date: 18/09/2019
Description of CL				
Under PDD Section Technologies and /or Measures PP has defined Plant Load Factor against each individual Plant i.e.18E, 18N and 18S, however it is not clear how PP arrive at the PLF Value, Please Clarify. (CL)				
Project participant response				Date: 10/10/2019
The computation of PLF has been shown with relevant supporting link under section A.5 of the revised PDD.				
Please refer to Foot Note 6 under Section A.5 of PDD. The Calculation of PLF / CUF is also transparently provided in the table and the calculation is done using the CUF formulae discussed in the reference document as mention under foot note 6				
Documentation provided by project participant				
DOE assessment				Date: 25/10/2019

PP has revised PDD Section A.5 to demonstrate the calculation of Plant Load factor. To demonstrate how PP has arrived at the PLF, PP utilized a 3rd party research paper published on ScienceDirect on the performance evaluation of Solar Power Plant in India.

In Solar plant PLF is equivalent to CUF i.e. Capacity Utilization Factor. Which is defined as real output of the plant compared to theoretical maximum output of the plant.

$CUF = \text{Energy measured (kWh)} / (365 * 24 * \text{installed capacity of the plant})$.

Based on the above verification and relevant corrections done by PP in the PDD it is concluded that the CL is closed.

CL ID	02	Section no.	B.5	Date: 18/09/2019
Description of CL				
In PDD Section B.5 Demonstration of Additionality, PP has demonstrated the Additionality of project utilizing "Simplified procedure to demonstrate additionality" as specified in the Approved methodology ACM002. As per para 29 of "Simplified procedure to demonstrate additionality" PP has justified that the percentage share of total installed capacity of the specific technology i.e. Solar Power (870MW) in the total installed grid connected power generation capacity in Vietnam is equal to 2%. This claim is based on the "Vietnam Electricity Annual Report 2017" which represents the scenario at the end of 2016. However on the basis of latest information on the EVN Website it is observed that Total Installed grid connected capacity of Solar Technology is more than 4000MW and it corresponds to 2.7% of total power generation capacity. Please explain how the additionality claim in the PDD Version 2.0 is correct? (CL)				
Project participant response				Date: 10/10/2019
Since PP couldn't find the relevant grid data to justify the simplified additionality, they have chosen the "Tool for demonstration and assessment of Additionality, Version 07.0.0" to demonstrate the additionality. As per the tool, the investment analysis has been carried out in accordance with "Methodological Tool: Investment Analysis, Version 09.0". The IRR spreadsheet also enclosed with the revised PDD for validator review.				
Documentation provided by project participant				
DOE assessment				Date: 25/10/2019
Based on the site visit outcome and country specific information available publically it is concluded that the simplified additionality is not applicable for the project and hence the clarification provided by PP and necessary corrections in the Revised PDD are found correct and acceptable. As a correction PP has decided to work out the investment Analysis to demonstrate the Additionality. This approach is found correct and in accordance with the "Tool for demonstration and assessment of Additionality, Version 07.00" Based on the justification PP has revised PDD section B.5 to incorporate demonstration of additionality using Investment Analysis. This approach is found correct and hence accepted and the CL is closed				

CL ID	03	Section no.	B.6.1	Date: 18/09/2019
Description of CL				
Under PDD section "Relevant target for Each of the three SDG's" PP has identified three SDG's i.e. SDG7, SDG 8 and SDG 13, however justifications provided against each SDG selected is not clear and it does not provide clarity how these three SDG's are applicable and Project contributes to meet the SDG requirements. (CL)				
Project participant response				Date: 10/10/2019
The justification provided under section B.6.1 has been rewritten based on the targets chosen for each SDG in the revised PDD.				
Documentation provided by project participant				
DOE assessment				Date: 25/10/2019
Validation Team Checked the revised justifications in the Revised PDD under Section B.6.1 and it is found that PP has appropriately discussed how the selected SDG indicators are relevant to Project and how project will be contributing to achieve the established target against each indicator. Based on the revised justification it is concluded that the SDG Indicator selection is correct and justification is now clear. Hence the Clarification is closed..				

Table 2. CARs from this validation

CAR ID	01	Section no.	A.5	Date: 18/09/2019
Description of CAR				
Under PDD Section Technologies and /or Measures PP has mentioned that Average lifetime of the Project is determined using methodological Tool (AM-TOOL-10, Version 1) i.e. “Tool to determine the remaining lifetime of equipment”, However this tool is required to determine the remaining lifetime of the equipment and hence it is not applicable for this Project activity as this is the Greenfield project. (CAR)				
Project participant response				Date: 10/10/2019
The following section have been revised in the revised PDD: <i>The technical lifetime of the project activity is determined by using “Tool to determine the remaining lifetime of equipment” (Version 1)¹. The tool states that:</i> <i>Project participants may use one of the following options to determine the remaining lifetime of the equipment:</i> (a) <i>Use manufacturers information on the technical lifetime of equipment and compare to the date of first commissioning;</i> (b) <i>Obtain an expert evaluation;</i> (c) <i>Use default values.</i> As per option (a),				
Documentation provided by project participant				
DOE assessment				Date: 25/10/2019
PP has used information provided by the Manufacturer of Solar Panels to determine the Technical Lifetime of the Project equipment and hence it is found satisfactory. Based on the justification provided and the corrections made in the PDD Section A.5, the CAR is closed. PP has applied the technical Life of Solar panels as 25 years, which is demonstrated through Technical specifications of Solar panels installed on project site i.e. Seraphim make SRP-345-6MA-HV model. –Found satisfactory.				

CAR ID	02	Section no.	A.7	Date: 18/09/2019
Description of CAR				
In PDD section A.7 it is required to provide the information on Funding sources of Project, however PP just provided information that Project does not utilize Public funding or ODA funding's, which is partially meeting the requirement as Funding source is not mentioned. (CAR)				
Project participant response				Date: 10/10/2019
The following has been included under section A.7 in the revised PDD: <i>The project activity does not have any public funding or Official Development Assistance (ODA) funding.</i> <i>The project received the following funding sources:</i>				
Funding Sources		Share	AmoUnt (VND) ²	
Investment by Project owner (Equity)		30%	203 Billion	
Bank Loan (Debt)		70%	474 Billion	
Land Ownership – BMT is leased 348,249.2 m ² of land for 50 years from Irrigation Company (belongs to communist party)				
Documentation provided by project participant				
DOE assessment				Date: 25/10/2019

² Pages 2 & 3 of Loan Agreement signed with Indovina BankLtd² Pages 2 & 3 of Loan Agreement signed with Indovina BankLtd

Verified corrected PDD Section A.7 and found that PP has provided the source of funding as equity arranged by the PP and Bank loan – it is also confirmed that there is no ODA funding is availed by the Project. PP has provided a declaration in the specified form and this form is made available for validation.

Based on the verification of the correction in the PDD as well as supporting evidence it is concluded that PP has appropriately declared the Funding sources and necessary evidences are provided to Validation team for validation. Hence the CAR is closed.

CAR ID	03	Section no.	B.4 / B.5	Date: 18/09/2019
Description of CAR				
In PDD Section Establishment and description of baseline scenario, PP has mentioned that “The total installed electricity generation capacity in Vietnam has reached 42,315 MWp as of Dec 2016” referring to the “Vietnam Electricity Annual Report 2017”, while cross checking the information it was noted that the actual total electricity generation by December 2016 was 42,135 MWp.				
Same Error is observed in section Demonstration of Additionality (CAR)				
Project participant response				Date: 10/10/2019
It's a typo error and it has been revised all over in the revised PDD as follows: 42,315 is changed in to 42,135				
Documentation provided by project participant				
DOE assessment				Date: 25/10/2019
PP did the correction in the PDD section B.4 and B.5, Based on the verification it is concluded that the corrections are appropriate and hence the CAR is Closed.				

CAR ID	04	Section no.	B.6.5	Date: 18/09/2019
Description of CAR				
While Estimating Ex-ante values against each SDG outcome PP has provided two separate tables for SDG 7 and SDG 13 where Baseline Estimates are provided as MWh Value and tCO2 Emission Reductions achieved and respectively. And project estimate shows Zero, How it is possible? The Objectives of these SDG's are not understood clearly and representation of values found to be wrongly mentioned. (CAR)				
Project participant response				Date: 10/10/2019
The tables are revised based on the benefits achieved by the project activity in the revised PDD				
Documentation provided by project participant				
DOE assessment				Date: 25/10/2019
PDD section B.6.5 is now revised to represent correct scenario how project achieves SDG 7 and SDG 13 principle requirements.				
The correction made to the PDD section B.6.5 and specifically to the tables demonstrating compliance towards SDG 7 and SDG 13, found satisfactory and hence the CAR is closed.				

CAR ID	05	Section no.	B.7.1	Date: 18/09/2019
Description of CAR				
Under PDD section B.7.1 PP has provided information on the Data and Parameters to be monitored, under Parameter “Relevant SDG indicator” PP has identified 8.5.2 and 8.8.2 as indicators for monitoring, however the selection of the SDG Indicator found to be wrong and the monitoring description is also found to be wrong.				
Further PP has also Identified indicator 13.3.2 for monitoring, however the Description of Monitoring found to be wrong. (CAR)				
Project participant response				Date: 10/10/2019

The indicators are changed from 8.5.2 to 8.5.1 as well as from 8.8.2 to 8.8.1 under section B.7.1 of the revised PDD. Based on the relevant indicators chosen, the monitoring method and procedure has been revised.	
Also, the description of Indicator 13.3.2 has been amended in the revised PDD.	
Documentation provided by project participant	
DOE assessment	Date: 25/10/2019
PP has corrected the Section B.7.1 of PDD and revised the selection of SDG indicators. Now it is observed that Project relevant SDG indicators are identified and described in the PDD section B.7.1. Revised selection of SDG indicators are as given below.	
- 8.5.1 – Average hourly earnings of female and male employees, by occupation, age and persons with disabilities – This indicator is found appropriate as the it monitors the improvement in economic sustainability for the peoples due to the implementation of the project. - 8.8.1 – Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status – This is a proactive indicator for the project as it monitors the frequency rate of accidents and ensures the Safety of the personnel working for the project activity during operational phase. - 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 – PP has planned to create awareness towards the green technologies which are helpful in adaption, mitigation and technology transfer.	
Based on the verification of the revised information in the PDD on Relevant SDG indicators, it is concluded that the information is appropriate and in accordance with the project activity, hence the CAR is Closed.	

CAR ID	06	Section no.	B.6	Date: 18/09/2019
Description of CAR				
In the revised PDD section B.6, it is observed that PP has provided the description on Investment Analysis to prove the Additionality and submitted a IRR Calculation Spreadsheet. As per Methodological Tool: Investment Analysis, Version 09.0 Para 6 & 7 it is required to consider Fair Value of the Project at the end of the lifetime of the Project while calculating the IRR, however there is no evidence to suggest that PP has used the Fair Value for calculating the IRR. (CAR)				
Project participant response				Date: 10/10/2019
<i>PDD Section B.6 is now amended to include the justification for not considering the Fair Value at the end of lifetime. Since the project involves the installation of PV Solar cells and associated equipment's and at the end of the lifetime these equipment's will not be having any value and it will disposed as recycled item.</i>				
Documentation provided by project participant				
<i>Revised PDD</i>				
DOE assessment				Date: 25/10/2019
Based on the Justification provided by the PP in the revised PDD Validation Team has referred to Manufacturer Specifications for Solar Cells and related equipment's and the possible ways to dispose such assets. Validation Team does the Background check and found that there is a legal circular issued by Ministry of Finance in Host Country Vietnam "Guiding Regulation on Management, Use and depreciation of Fixed Assets" however there is no specific mention about the Solar Power plant equipment's.				
From the publically available documents/ literature it was understood that the end of Life Management of Solar Photovoltaic Panels will be incurring more cost and hence PP has to shell out the money for disposal i.e. Dismantling, Transportation and treatment. Though there is no feasible recycling technology is available at this point however it is estimated that EUR 200/ T of cost may be incurred for Treatment of the Solar photovoltaic Waste. Validation team verified following publically available documents				
- End of Life Management – Solar Photovoltaic Panels, Published by IRENA (International Renewable Energy Agency) in June 2016. - Research Paper on Techno- Economic Review of Silicon Photovoltaic Modules Recycling – This research Paper is available on science direct website and found relevant.				
Based on the above background check it is confirmed that the Justification provided by the PP in revised PDD section B.6, is correct and acceptable. Hence the CAR is Closed.				

Table 3. FARs from this validation

FAR ID		Section no.		Date:	
Description of FAR					
Project participant response				Date: DD/MM/YYYY	
Documentation provided by project participant					
DOE assessment				Date: DD/MM/YYYY	

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	31 May 2019	Revision to: • Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN); • Make editorial improvements.
03.1	11 January 2018	Editorial revision to remove an erroneously included instruction paragraph in section D.2 (Identification of project type).
03.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
02.0	22 July 2016	EB 90, Annex 3 Revision to include provisions related to automatically additional project activities.
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Registration Keywords: project activities, validation report		