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GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG)
REPORT
-
DESIGN CERTIFICATION (VALIDATION)

Project Title:	42 MWp Bundled Solar Photovoltaic Power project in Indonesia
GS project ID:	GS 10250
Internal ID:	5419
Customer:	PT Infrastruktur Terbarukan Adhiguna PT Infrastruktur Terbarukan Buana PT Infrastruktur Terbarukan Cemerlang PT Infrastruktur Terbarukan Lestari
Date:	06/01/2021~~28/09/2020~~
Revision:	02~~1~~

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SUMMARY			
Reference No.	**Date** *(first version)*	**Version No.**	**Date** *(last version)*
A+SH_SYST_TQC_5419	25/09/2020	02~~1~~	~~28/09/2020~~06/01/2021

Client	PT Infrastruktur Terbarukan Adhiguna PT Infrastruktur Terbarukan Buana PT Infrastruktur Terbarukan Cemerlang PT Infrastruktur Terbarukan Lestari
Project Title	42 MWp Bundled Solar Photovoltaic Power project in Indonesia
Project Participants	PT Infrastruktur Terbarukan Adhiguna PT Infrastruktur Terbarukan Buana PT Infrastruktur Terbarukan Cemerlang PT Infrastruktur Terbarukan Lestari
Project Location	The project is located in Barat Province and Sulawesi Utara Province of Indonesia
Contact Person	Mr. Adi Natoatmadja

GS4GG Version: GS4GG 1.2 GS4GG Activity Requirements: RE Activity Requirements Applied Methodology Version: ACM0002: Grid-connected electricity generation from renewable sources - Version 20.0 Current Methodology Version: ACM0002: Grid-connected electricity generation from renewable sources - Version 20.0	GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2
First PDD Version: 01 Date: 29/07/2019	Final PDD Version: 03~~2~~ Date: ~~15~~30/~~09~~12/2020
Estimated Annual Emission Reductions: 60,916~~5~~ tCO_2e per year	

Selected Sustainable Development Goals (SDGs):
1 – SDG 3 Good Health and Well-Being
2 - SDG 7 Affordable and Clean Energy
3 - SDG 8 Decent Work and Economic Growth
4 - SDG 13 Climate Action

Estimation Values for each SDGs
SDG3 Good Health and Well-Being
- 3 community development activity/year

SDG 7 Affordable and Clean Energy
- 64,504 MWh electricity generation/year

SDG 8 Decent Work and Economic Growth
- 2 Trainings for staffs/year
- 80 number of jobs
- 0.5 million USD spent on O&M/year

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SDG 13 Climate Action - 60,9165 ~~65~~ tCO_2e per year
Design Certification Summary
LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by PT Infrastruktur Terbarukan Adhiguna to perform the GS VER validation of "42 MWp Bundled Solar Photovoltaic Power project in Indonesia" applying the methodology ACM0002 version 20.0. The management of PT Infrastruktur Terbarukan Adhiguna, PT Infrastruktur Terbarukan Buana, PT Infrastruktur Terbarukan Cemerlang and PT Infrastruktur Terbarukan Lestari are responsible for the preparation of the GHG emissions data and the reported GHG emission reductions. A desk review and a site visit have been conducted to verify the data submitted in the GS4GG PDD. Applus+ Certification confirms the following have been reviewed: a. The GS4GG PDD; b. The applied monitoring methodology; c. Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board; d. GS4GG guideline and related Annex. e. All information and references relevant to the project activity's resulting in estimated emission reductions. The scope of the validation is defined as an independent and objective review of the project design document, against the Kyoto Protocol requirements, UNFCCC rules, applicable CDM requirements and requirement of Gold Standard. The validation report is finalized based on the assessment of the Gold Standard GS4GG PDD and applying standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable approved methodology and underlying formulae and calculations. The report and the annexed validation checklist describes a total of 7 findings which include: • 087 ~~7~~ Corrective Action Requests (CARs); • 00 Clarification Requests (CLs/CRs); • 00 Forward Action Requests (FARs). The PP has responded these findings by modifying the Gold Standard PDD and providing adequate additional explanations and evidences. Applus+ Certification confirms that all the findings have been "closed out" before submitting the request for registration to GS board. As a summary of the validation, the review of the Gold Standard GS4GG PDD and the subsequent follow-up interviews have provided Applus+ Certification with sufficient evidence for the determination of the project's fulfillment with all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and requirement of Gold Standard. Therefore, Applus+ Certification recommends the project for registration by the GS Registry as GS VERS project.

ASSESSMENT TEAM		
Team Members	**Type of Resource**[1]	**Organization** *(for OEs)*
Lead Auditor: Mr. Sukanta Das	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications private Limited
Auditor: NA	☐ IR ☐ EI ☐ OE	-
Technical Expert: Mr. Sukanta Das	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications private Limited
Technical Reviewer: Mr. Denny Xue	☐ IR ☒ EI ☐ OE	-

[1] IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

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ABBREVIATIONS	
AMS	Approved Methodology Small Scale
Applus+ LGAI / Applus+	LGAI Technological Center, S.A. (Applus+ Certification)
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CL / CR	Clarification Request
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS4GG (or GS)	Gold Standard for Global Goals
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non-Governmental Organization
SDG	Sustainable Development Goal
TAC	Gold Standard Technical Advisory Committee
OM	Operational Margin
PP	Project Participant
PS	Project Standard
UNFCCC	United Nations Framework Convention for Climate Change
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

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1. INTRODUCTION

PT Infrastruktur Terbarukan Adhiguna has commissioned Applus+ Certification to perform a validation of "42 MWp Bundled Solar Photovoltaic Power project in Indonesia" (hereafter referred to as the project activity) in the Country of Indonesia. This validation report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM Executive Board as well as requirement of Gold Standard GS4GG guideline.

The project is a bundled project which involves installation of 4 solar projects in Indonesia. The details of the four projects are given below:

No	Developer	Capacity	Location	Commissioning date	Grid Connected
1	PT Infrastruktur Terbarukan Adhiguna (ITA)	7 MWp/ 5.4 MWac	Camporonan sub-village, Pringgabaya Utara village, Pringgabaya district, Lombok Timur regency, Nusa Tenggara Barat province, Indonesia	22/07/2019	Lombok (in West Nusa Tenggara)
2	PT Infrastruktur Terbarukan Buana (ITB)	7 MWp/ 5.4MWac	Geres Baret sub-village, Geres village, Labuhan Haji district, Lombok Timur regency, Nusa Tenggara Barat province, Indonesia	02/07/2019	
3	PT Infrastruktur Terbarukan Cemerlang (ITC)	7 MWp/ 5.4 MWac	Sengkol 1 sub-village, Sengkol village, Pujut district, Lombok Tengah regency, Nusa Tenggara Barat province, Indonesia	02/07/2019	
4	PT Infrastruktur Terbarukan Lestari (ITL)	21 MWp/ 15.3 MWac	Wineru Village, Likupang Timur District, Minahasa Utara Regency, Sulawesi Utara Province, Indonesia	05/09/2019	Sulutgo (in north Sulawesi and Gorontalo)

The purpose of the project activity is to generate electrical power using solar energy through operation of Solar power plants.

As the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following as per applied methodology: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants in the respective grids 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" version 07.0. Hence, pre-project scenario and baseline scenario are the same.

The project activity is the installation of a new grid-connected renewable power plant/unit and this is not a CPA that has been excluded from a registered CDM/GS PoA as a result of erroneous inclusion of CPAs.

1.1 Objective

The purpose of a validation is to have an independent third party assessment of the GS4GG PDD and compliance with the GS requirements as described in the Gold Standard documentation and supporting documents by the client. Validation is part of the GS VER project cycle and will finally result in a conclusion by Applus+ Certifications whether a project activity is valid and should be submitted for registration of a proposed project activity rests at the GS and the Parties involved.

1.2 Scope

The validation scope is defined as an independent and objective review of the project PDD, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against all applicable CDM and GS requirements including the approved baseline and monitoring methodology ACM0002 version 20.0. The validation was based on the requirements in the Validation and verification standard for project activities version 02.0 and Gold Standard GS4GG requirement, version 1.2.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the PDD.

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2. METHODOLOGY

The project assessment is based on the Clean Development Mechanism Validation and verification standard for project activities version 02.0, Gold Standard requirement for GS4GG and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the project activity are appointed. Once the project is made available for Applus+ LGAI, the members of the assessment team carried out:

1. A desk review of the GS4GG PDD;
2. Follow-up interviews with project stakeholders;
3. The resolution of outstanding issues and the issuance of the final validation report and opinion.

The prepared validation report and other supporting documents then undergo an internal quality control before being submitted to the GS Registry.

The GS overview documents which is referred as DVR is as below

Validation Checklist Table 3: Resolution of Audit Findings				
Type:	☐ **CAR** ☐ **CL/CR** ☐ **FAR**		**Number:**	
Raised by:		**Ref. to checklist in table 1&2:**		
Description of the audit finding			**Date:**	
The description of the audit finding should be clearly included here.				
Project Participant's response			**Date:**	
The responses given by the project participants during the communications with the validation team should be included here.				
Documentation provided as evidence by Project Participant				
The evidences provided by the project participants should be included here.				
Auditor's assessment comment			**Date:**	
This section should include how the audit finding is assessed by the assessment team.				

The Complete List of CAR/CL/FAR is included as Appendix 1 of this report

2.1 Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, LGAI Technological Center, S.A. (Applus+ Certification) has composed a

project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAI Technological Center, S.A. (Applus+ Certification).

The composition of audit team shall be approved by the LGAI Technological Center, S.A. (Applus+ Certification) ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	**Role**	**SS Coverage**	**TA Coverage**	**Financial aspect**	**Host country experience**
Mr. Sukanta Das	LA/TE	YES	YES	YES	YES
Mr. Denny Xue	TR	YES	YES	YES	NA

The complete list of CVs is included as Appendix 2 of this report.

2.2 Document review

The Gold Standard PDD version 1.0 submitted by the Client was reviewed against the approved methodology and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in Reference 4 to this report.

2.3 Follow up Interviews

Interviewed Personnel	**Functions**	**Organization**
Mr. Adi Natoatmadja	PP representative, VENA: HCE head	VENA: HSE- Health Safety and Environment head
Terra Sompie – Female (Category B as per GS guideline)	Local Stakeholder	Wineru JG I

Arie Suhendri -Male (Category B as per GS guideline)	Local Stakeholder	Pringgbaya
Rahmat Alfian Hidayatulloh- Male (Category B as per GS guideline)	Local Stakeholder	Labuhan Haji
Pebriandl - Male (Category B as per GS guideline)	Local Stakeholder	Sengkol

Duration of on-site inspection: 18/09/2019-21/09/2019				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring.(Discussion with PP) Assessment team meet with the local stakeholder and confirmed that there is no grievance resulted from the project activity in and out of the project location. The stakeholder confirmed that the project resulted in employment and improves lifestyles of the personal/families in the nearby villages. (Discussion with Stakeholder)	The project is located in Barat Province and Sulawesi Utara Province of Indonesia	18/09/2019-21/09/2019	Mr. Sukanta Das

2.4 Resolution of Clarification and Corrective Action requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which needs to be clarified for Applus+ Certifications positive conclusion on the PDD. The Corrective Action Requests and Clarification Requests raised by Applus+ Certifications were resolved during communications between the Client and Applus+ Certifications to guarantee the transparency of the validation process, the concerns raised and responses given are summarized in Appendix 1 below.

The Gold Standard GS4GG PDD version 03~~2~~ submitted on ~~15~~30/~~09~~12/2020 serves as the basis for the final assessment presented.

2.5 Internal Quality Control

As final step of a validation the final documentation including the validation report and the protocol have to undergo an internal quality control by the technical review committee. Each report has to be finally approved either by the head of technical review committee or the deputy. In case one of these two persons is part of the audit team, approval can only be given by the other one.

After confirmation of the PP the validation opinion and relevant documents are submitted to the Sustain cert app.

3. PROJECT DESIGN CERTIFICATION ASSESSMENT

3.1 Approval

This section is not applicable as this is a GS VER project.

3.2 Participation

The project participant is PT Infrastruktur Terbarukan Adhiguna, PT Infrastruktur Terbarukan Buana, PT Infrastruktur Terbarukan Cemerlang, PT Infrastruktur Terbarukan Lestari and is located in the host party Indonesia. The host country involved is parties to the Kyoto Protocol and meet and requirements to participate in the Gold Standard.

As confirmed in PDD, there is no other party involved in this project.

The legal ownership of the product generated from the project (GS VER) and other rights are with respective project developer as described below:

Project	Capacity	Legal owner of VER and other legal rights
ITA	7 MWp	PT Infrastruktur Terbarukan Adhiguna (ITA)
ITB	7 MWp	PT Infrastruktur Terbarukan Buana (ITB)
ITC	7 MWp	PT Infrastruktur Terbarukan Cemerlang (ITC)
ITL	21 MWp	PT Infrastruktur Terbarukan Lestari (ITL)

The assessment team verified Commissioning Certificates and approvals of each project and confirmed the legal ownership of the project.

3.3 Scale of the project

The project activity is identified as other/large-scale project in section A.6 applying a large-scale methodology ACM0002 version 20.0. The total capacity of the power project is 42 MW as validated during the onsite visit. Since the design capacity of the project activity is more than 15 MW, which is stipulated limit for large scale projects by GS/CDM, the project is correctly classified as other/large-scale project. Assessment team also checked the requirement of latest

applicable methodology ACM0002 version 20.0 and confirms that the project qualifies the requirement of the latest methodology also (i.e. scale, applicability, baseline, additionality and monitoring).

a) Type of project: The project activity involves electricity generation using solar power to reduce atmospheric CO_2 emission by replacing equivalent amount of electricity from the grid of Indonesia. The project type is identified as renewable energy project in section A.6 of the GS4GG PDD. The project activity complies with the requirement of 'the generation and delivery of energy services (e.g. electricity) from non-fossil and non-deployable energy sources' as defined in GS4GG toolkit. The project activity generates and supplies renewable electricity to the regional grid thereby displacing the electricity which would have generated in fossil fuel based power plants connected to the grid.

3.4 Greenhouse Gases

The project activity leads to displacement of electricity generation from fossil fuel based power plants connected to the regional grid by renewable energy generated using solar power. The operation of the project activity will result in reduction of carbon-dioxide from the atmosphere due to displacement of electricity in grid by the renewable energy. Hence, the greenhouse gas identified in the PDD is carbon dioxide which is duly validated by the DOE.

The GHG emission sources considered for the project boundary and their explanations are as follows:

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Grid connected electricity generation.	CO_2	Yes	Main emission source
		CH_4	No	No emission source
		N_2O	No	No emission source
Project scenario	Greenfield solar PV Power Project Activity.	CO_2	No	No CO_2 emissions are emitted from the project
		CH_4	No	Project activity does not emit CH_4
		N_2O	No	Project activity does not emit N_2O

3.5 Project timeframe

- ***Other certification scheme:*** The project activity has not applied, confirmed by project developer, for any other certification like Green or White certification. Therefore, the validation team concluded that the project activity meets the applicability criteria of Gold Standard. Assessment team checked the double counting clarification vide GS guideline on double counting in the context of Green Certificate

Schemes, 22/01/2015. A declaration dated 26/06/2020 by the PP confirms that the project activity is not taking any benefits under any other mechanism of the host country. The project is applied for GS VER validation. Moreover, assessment team also checked CDM and VCS web site and confirm that project is not applied for registration in any other carbon scheme other than GS at this stage of Validation.

However, it is noted that the ITL project is registered under International Renewable Energy Certificate (I-REC) and the device ID of the project is LIKUSP01[2]. But there is no REC credits issued under I-REC till date. This is confirmed from PP's declaration dated 26/06/2020. In the declaration, PP also confirms that if any REC credits claimed in future, then the GS VER will not be claimed for the specific period to avoid double counting.

3.6 Project Boundary

As per Para 20 of applied baseline and monitoring methodology ACM0002, Version 20.0 the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project power plant is connected to. This includes the solar plant installation, pooling and sub-stations.

The proposed project activity evacuates the power to the grid. Therefore, all the power plants contributing electricity to the respective regional grid~~National grid~~ (Lombok Grid for ITA, ITB & ITC and Sulutgo grid for ITL) have been considered in the project boundary for the purpose of baseline estimation. The project activity targets reduction of CO_2e as main GHG greenhouse gas in baseline, there are no GHG emission associated with project activity.

Assessment team during the onsite visit checked that Power will be evacuated at 20 kV voltages in each power station. The details of the power evacuation are given below:

Details	ITA	ITB	ITC	ITL
Interconnection Voltage	20 kV	20 kV	20 kV	20 kV
Transmission line distance	3 km	6 km	2.1 km	0.2 km
Substation	150/20kV Pringgabaya	150/20kV Selong	150/20kV Sengkol	66/20kV Likupang

3.7 Baseline Identification

Being a grid connected solar energy generation project, PP developed the project based on the Methodology ACM0002 version 20.0. As per methodology version 20, Para 22:

"If the project activity is the installation of a Greenfield power plant, 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".

The project activity involved setting up of solar power plant to harness the solar energy to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied to the electricity grid by the operation of grid-

[2] https://v-1.evident.app/Public/ReportDevices/

connected power plants (mainly by fossil fuel fired plants) and by the addition of new generation sources, as reflected in the combined margin (CM) calculations.

Hence, for the project ITA, ITB & ITC projects, the baseline for the project activity is the equivalent amount of power from the Lombok Power Grid and for ITL project, the baseline for the project activity is the equivalent amount of power from the Sulutgo Power Grid.

The combined margin ($EF_{grid,CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM). Calculations for this combined margin must be based on data from an official source (where available) and made publicly available.

Directorate General of Electricity (Ministry of Energy and Mineral Resources has calculated and provided the combined margin emission factor for the entire grid in Indonesia. The combined margin of the Lombok and Sulutgo Power Grid used for the project activity are as follows:

Parameter	Value	Nomenclature	Source
$EF_{Lombok\ grid,CM,y}$	0.93 tCO_2/MWh	Combined margin CO_2 emission factor for the Lombok grid	Based on the most recent data available now, i.e. data published on 2018 by Directorate General of Electricity (Ministry of Energy and Mineral Resources or DNA Indonesia) for the province Lombok.[3]
$EF_{Sulutgo\ grid,CM,y}$	0.94tCO_2/MWh	Combined margin CO_2 emission factor for the Sulutgo grid	

3.8 Eligibility Principles Assessment

- **Principle 1. Contribution to Climate Security & Sustainable Development**

  The baseline scenario and the emission reduction calculations have been performed as per the requirement of the methodology. The emission factor of grid, in the GS4GG PDD, has been calculated in-line with the provisions of applied methodology ACM0002 version 20.0. The latest applicable version of "Tool to calculate the emission factor for an electricity system" is version 07.0.

  The applicability criteria are now detailed out in the report as below:

  Applicability 1: Assessment team checked that the project activity is installation of a new grid connected solar power plant/ unit at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant) and hence this criterion is applicable.

  Applicability 2: Assessment team checked that the proposed project activity is an installation of a new grid connected solar power plant/ unit and hence criteria under point (a) are met. The project does not involve any capacity additions, retrofits or replacements and therefore this criterion under point (b) is not applicable.

[3] https://gatrik.esdm.go.id//frontend/download_index/?kode_category=emisi_pl

Applicability 3: Assessment team checked that the proposed project activity is an installation of a new grid connected solar power plant/ unit and not Hydro power plant, therefore these criteria is not applicable for this project activity.

Applicability 4: Assessment team checked that the proposed project activity is an installation of a new grid connected solar power plant/ unit and not Hydro power plant, therefore these criteria is not applicable for this project activity.

Applicability 5: Assessment team checked that the project activity is installation of a new grid connected solar power project/ unit and does not involve switching from fossil fuel to renewable energy, therefore criterion described in point (a) is not relevant to the project activity.

This is a solar power plant/ unit and not a biomass fired plant, therefore criterion described in point (b) is not applicable to the project activity

Applicability 6: Assessment team checked that the project activity is a new grid connected solar power plant/ unit and not a retrofits, replacement or capacity additions and therefore this criterion is not applicable to the project activity.

Applicability conditions of "Tool to calculate the emission factor for an electricity system"

- OM, BM and CM are estimated using the tool under section B.6.2 of the PDD for calculating baseline emissions.
- The project activity is grid connected and thus emission factor is calculated and thus OM, BM and CM are estimated using the tool under section B.6.2 of the PDD for calculating baseline emissions.
- The project activity is located in Indonesia, a non-Annex I country. Therefore, this criterion is not applicable for the project activity.
- The project activity is a grid connected solar power project and not a hydro power plant. Therefore, this criterion is not applicable for the project activity.

Applus+ Certification confirms that the application of the baseline methodology is transparent and conservative and confirms that the chosen baseline and monitoring methodology i.e. ACM0002 version 20.0 is applicable to the project activity.

Assessment team checked the technical details of the solar panel from the manufacturer's technical manual and found the same to be correct.

Project	ITA	ITB	ITC	ITL
Solar PV modules				
Solar PV modules	Trina Solar	Trina Solar	Trina Solar	Trina Solar
Technology	Polycrystalline	Polycrystalline	Polycrystalline	Polycrystalline

Capacity	325 Wp	325 Wp	325 Wp	325 Wp
No. Of Modules	21,560	21,560	21,560	64,720
Capacity, MW (DC)	7.007 MWp	7.007 MWp	7.007 MWp	21.034 MWp
Inverter				
Input voltage	550 - 885 V	550 - 885 V	550 - 885 V	550 - 885 V
Rated output voltage of	380 V	380 V	380 V	380 V
Inverter output	680 kWac	680 kWac	680 kWac	680 kWac
Number of Inverter	8	8	8	24
Total AC	5.44 MW	5.44 MW	5.44 MW	16.32 MW
Inverter Transformer				
Capacity	1.360 kVA	1.360 kVA	1.360 kVA	1.360 kVA
Input Voltage range	100 -380 V	100 -380 V	100 -380 V	100 -380 V
Output Voltage	20k V	20k V	20k V	20k V
Number of transformer	4	4	4	4
Power Transformer				
Capacity	NA	NA	NA	20 MVA
Input/ Output Voltage	NA	NA	NA	20 kV/66kV
Number of transformer	NA	NA	NA	1
Grid Connection				
Interconnection Voltage	20 kV	20 kV	20 kV	66 kV

Transmission line distance	3 km	6 km	2.1 km	0.2 km
Substation	150/20kV Pringgabaya	150/20kV Selong	150/20kV Sengkol	66/20kV Likupang
Total Capacity, MW (DC)	42 MWp			
Total Capacity, MW (AC)	32.6 MWac			

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

Assessment team checked the latitude and longitude of the project activity using GPS meter and also cross checked from the Google earth and found the detail to be correct. The same is defined below:

Project	Capacity	Region/Province	City/Town/Community	Geographical Location
ITA	7 MWp	Nusa Tenggara Barat Province	Cemporonan sub-village, Pringgabaya Utara village, Pringgabaya district, Lombok Timur regency	8.519° S 116.634° E
ITB	7 MWp	Nusa Tenggara Barat Province	Geres Baret sub-village, Geres village, Labuhan Haji district, Lombok Timur regency	8.658° S 116.574° E
ITC	7 MWp	Nusa Tenggara Barat Province	Sengkol 1 sub-village, Sengkol village, Pujut district, Lombok Tengah regency	8.794° S 116.294° E
ITL	21 MWp	Sulawesi Utara Province	Wineru Village, Likupang Timur District, Minahasa Utara Regency	1.658° N 125.096° E

- **Principle 2: Safeguarding Principles**

The Safeguarding principles assessment is as below:

SOCIAL & ECONOMIC SAFEGUARDING PRINCIPLES				
Safeguarding principle	Assessment question	Assessment of relevance to the project	Justification	Mitigation measure (if

		(Yes/potentially/no)		required)
1. Human Rights	a. The Project Proponent and the Project shall respect Internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights. b. The Project shall not discriminate with regards to participation and inclusion.	No	Assessment team confirms that the project proponent respected all the human rights. The project is not in any kind of conflict with the livelihood of local people. Project proponent had conducted stakeholder's consultation and sought their opinion. ESIA Report also confirms that the PP will comply with local regulations related to labor and working conditions and maintain a human rights policy that is consistent with global standards. The project is located in Indonesia and Indonesia, as the host country of the project, is a party to Universal Declaration of Human Rights [4] and also ratified ILO Convention	Not Required.

[4] http://www.komnasham.go.id/profil

			111 on Discrimination (Employment and Occupation)[5]. Section 2.3 of the ESIA Report confirms that The project will not employ any personnel based on gender, race, religion, sexual orientation or any other basis.	
2. Gender Equality & Women's Rights	1. The Project shall complete the following gender assessment questions in order to inform Requirements, below: a. Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits? b. Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on women or	No	Assessment team checked during the onsite visit that men- women have equal participation and equal pay is given for equal work. The employment contract for both Men and women is checked and Salary Slip for both Men and women are checked to confirm equal pay for equal work. Projects do not affect men and women in marginalised or vulnerable communities. Both men and women are employed as per	Not Required

5 https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUNTRY_ID:102938

	social isolation of men)? c. Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project man rights policy that is consistent wild care duties, low literacy or educational levels, or societal discrimination)? d. Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (Eg. Does the project criteria ensure that it includes minority groups or landless peoples)? e. Does the Project design contribute to an increase in women's workload that adds their cares responsibilities or that prevents them from engaging in other activities?		the Skill level and requirement of the Organization. Local Men and women who are uneductaed are provided unskilled job during the construction as well as operation phase of the project which generated employement opportunity for the local people. The Project design do not increase women workload however on contrary generated employement opportunity for them. The project has Women cell in case of any Sexual harrasment case is noticed and the same is resolved on priority basis. Moreover, since the project generated employement for women its improves there overall life of the family as well. The project does not discriminate the local	

	f. Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits? g. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services? h. Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards? 2. The Project shall not directly or indirectly lead to/contribute to		community on basis of gender or caste or religion and therefore equally serve to all. Assessment team referred the EHS report (page 70/94) and confirm the same. PP does not involve in any form of discrimination in any kind. Indonesia, as the host country of the project, is a party to Universal Declaration of Human Rights [6] and also ratified ILO Convention 111 on Discrimination (Employment and Occupation)[7]. The project does not discriminate on basis of gender, caste or religion. As per EHS Policy, PP confirms that the workers will be free from all forms of	

[6] http://www.komnasham.go.id/profil

[7] https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUNTRY_ID:102938

	adverse impacts on gender equality and/or the situation of women. a. Sexual harassment and/or any forms of violence against women - address the multiple risks of gender -based violence, including sexual exploitation or human trafficking. b. Slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls. c. Restriction of women's rights or access to resources (natural or economic). d. Recognise women's ownership rights regardless of marital status - adopt project measures where possible to support to women's access to inherit and own land, homes, and other assets or natural resources. 3. Projects shall apply the principles of non-discrimination, equal treatment,		harassment and discrimination based on race, color, religion, national origin, gender (including pregnancy), age, disability, sexual orientation, gender identity, HIV status, marital status, or any other status protected by the laws and regulations in the locations where we operate. (Refer ESIA Report, page 84/14)	

	and equal pay for equal work, specifically: a. Where appropriate for the implementation of a Project, paid, volunteer work or community contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities. b. Introduce conditions that ensure the participation of women or men in Project activities and benefits based on pregnancy, maternity/paternity leave, or marital status. c. Ensure that these conditions do not limit the access of women or men, as the case may be, to Project participation and benefits. 4. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks.			

3. Community Health, Safety & Working Conditions	a. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community.	NO	Assessment team checked during the onsite visit that all employees undergo training and Safety measure for Occupational Safety, Health and Working Conditions and UN Agreement on Human Rights [8] . The Safety equipment's such as Safety boots, Hand Gloves, Helmet etc are provided to all the operational personal and same is practiced and followed onsite by each and every personal working in Shifts. Hence project avoids exposure to increased health risks and shall not adversely affect the health of the workers and the Community. Assessment team checked ESHS manual for detailed assessment and confirm the same.	Not Required.

[8] https://www.ohchr.org/EN/Countries/AsiaRegion/Pages/INIndex.aspx

4. Cultural Heritage, Indigenous Peoples, Displacement and Resettlement	a. Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, or practices)? b. Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)? c. Does the Project require any change to land tenure arrangements and/or other rights? d. For Projects involving land-use tenure, are there any uncertainties with regards land tenure, access rights, usage rights or land ownership? e. Are indigenous peoples present in or within the area of influence	NO	Assessment team checked the ESIA report done and confirms that there are no protected archeological and cultural heritage sites are reported within the project footprint". The project land belongs to PP and as per ESIA report and since this is a private land no case of re-settlement observed. The proponent has also obtained necessary clearances from nodal agencies and clearances from all the relevant authorities for establishing the plant. Moreover, since the Panels are located in an isolated place having less traffic volume therefore there is no additional burden to the existing traffic. In addition, the project proponent built	Not required.

	of the Project and/or is the Project located on land/territory claimed by indigenous peoples?		new roads for those sites which do not have road access. The Land records are checked and it is found that the Land belongs to PP and hence There are no uncertainties regarding land tenure, access rights, usage rights or land ownership.	
Corruption	a. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects.	No	Indonesia is a party to United Nation Convention against Corruption since 18 Dec 2003[9]: All the organization in the host country follows the resolution and moreover, organization follows ethical code of conduct and hence project do not involve or complicit in or inadvertently contribute to or reinforce corruption or corrupt Project	Not required
Economic Impact	a. The project	NO	Assessment team	Not

[9] https://treaties.un.org/pages/viewdetails.aspx?src=ind&mtdsg_no=xviii-14&chapter=18&lang=en#EndDec

	does not employ and is not complicit in any form of child labor.		checked that PP and their subcontractors complying with all relevant national laws regarding child labor.	required
	b. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.		Working agreements with all individual workers are documented and implemented. As per HR policy the normal working hours shall be 8 hours a day and 40 hours a week, consisting of 5 working days.	
	c. The project does not involve and is not complicit in any form of forced or compulsory labor.		The Project Developer ensures that local workers/employees are preferred, to the extent possible, for employment during construction as well as operation phase of the project ensuring skill development in the local populace. The employment model executed is locally and culturally appropriate. Assessment team confirm the	

			above points by ESIA Report. PP will not employ children in any shape or form for their works. Indonesia is a party to ILO convention 29 (since 1950) and 105 (since 1999) on elimination of forced and compulsory labour[10]. The PP has signed long term PPA with the state grid. Hence, the project will have financial sustainability beyond project certification period. The project therefore has no Negative Economic Consequences	
ENVIRONMENTAL & ECOLOGICAL SAFEGUARDING PRINCIPLES				
1. Climate and Energy	a. Will the Project increase greenhouse gas emissions over the Baseline Scenario? b. Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or	NO	The project being a renewable energy project decreases greenhouse gas emission over the baseline. The baseline of the project would be ~~National~~ respective regional grid which ~~is~~ are predominately connected by	Not required.

[10] http://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:102938

	fuel resource (such as wood, biomass) that provides for other local users?		fossil fuel plant. The project need some amount of import energy for start-up or auxiliary consumption. However, it's to be noted that the auxiliary power consumed by the plant is generated as renewable energy and thereby no emission involved The project is using Natural sun radiation as the raw material for power generation and hence there is no use of fuel resource (such as wood, biomass) that provides for other local users	
Water	a. Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	NO	As per the ESIA report, the plant area does not have large rivers and streams, only small gaps flow. In the dry season, there is almost no water, only water in the rainy season Locally constructed	Not required

			primary and secondary irrigation canals are present throughout the area. Temporary surface waters are present as paddy fields during the wet season. The project does not have any impact over the natural patterns and flow.	
	b. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? If 'Yes' or 'Potentially' proceed to question 2. c. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	Potentially	During the construction the disturbance in the landscape may lead to soil erosion. The project area is not susceptible to excessive erosion or water body instability.	Required and Please refer SD monitoring section for assessment

Environment, Ecology and Land Use	a. Does the Project involve the use of land and soil for production of crops or other products?	Potentially	The project uses land for installation of Solar Panels. It involves modification of landscape during construction and operation of project activity.	Required and Please refer SD monitoring section for assessment
	b. Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or Other extreme climatic conditions?	NO	The project is solar power project and is not susceptible to or leads to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, and drought.	Not required
	c. Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?	NO	Point c is not applicable for the project	Not required
	d. Could the Project potentially result	NO	The project is solar power project and	Not

	in the release of pollutants to the environment?		hence there is no question of release of pollutants to the environment	required
	Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	Potentially	The project during operational phase uses various types of oil/lubricants, grease which are classified as hazaordous. These waste are handled in line with hazardous waste management rules and are disposed off accordingly.	Required and Please refer SD monitoring section for assessment
	f. Will the Project involve the application of pesticides and/or fertilisers?	NO	The project is solar power project and project does not involve the use of Fertilizer.	Not required
	g. Will the Project involve the harvesting of forests?			
	h. Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	NO	The project is implemented in Barren land and the land is not fit for agriculture practice.	Not required
		NO	The project do not involve animal Husbandry	

	i. Will the Project involve animal husbandry? j. Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites[11] identified? k. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? l. Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	NO NO No	As per the ESIA report project do not affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites There are no endangered species identified as potentially being present within the Project boundary.	Not required Not required

				Not required

The SDG goals are also described below:

SDG Goal	Assessment of Methodological choices/approaches for estimating the SDG outcome
SDG 7 – Affordable and Clean Energy: SDG 7.2: Ensure access to affordable, reliable, sustainable and modern energy for all	**Measurement Method:** - Net electricity supplied will be calculated based on the difference between values of "export" and "import" on the energy meter at the sub-station (evacuation point). (Net Electricity = Export – Import) The net electricity will be calculated by PLN and provided in the monthly generation statement. Hence, the net electricity reading will be directly sourced from the monthly generation statement. **QA/QC Process:** Net electricity supplied to the grid by the project activity will be cross checked with invoices. Net electricity supplied to the grid by the project activity will be cross checked with invoices. The meter(s) shall be calibrated and maintained by the PLN as per their schedule, and this frequency of meter calibration is not within the control of the Project Proponent. However, the project proponent shall ensure that calibration of electricity meters is carried at least once in 5 year calibration or whenever abnormal difference/inconsistency is observed between main meter and check meter. **Relevant SDG Target:** By 2030, increase substantially the share of renewable energy in the global energy mix. Project / EGPJ,y ITA / 10,526 MWh ITB / 11,047 MWh ITC / 11,018 MWh ITL / 32,561 MWh Total / 65,142 MWh

	Corresponding indicator: Renewable energy share in the total final energy consumption
SDG 3: Ensure healthy lives and promote well-being for all at all ages SDG 3.8: Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	**Measurement Method:** PP conducted survey during construction phase of the project in the villages near project locations to check the requirement of facilities by the villages. From the survey, PP has identified several scope of developmental activities such as health camps, furniture, sports kits and toilet requirements in government schools, drinking water requirements etc. PP has started implementing the CSR activities. During the monitoring period the CSR activities like: • Providing street light to local community • Donation to orphans and mosques • Donation of School Supplies and Essentials • Donation for community events The project has positive impact on this parameter as there were no socially oriented CSR activities before the project activity. Thus, the project has positive impact on the indicator. **QA/QC Process:** NA **Relevant SDG Target:** Ensure healthy lives and promote well-being for all at all ages. 3 local development Activities relevant to the project activity/year **Corresponding indicator:** SDG 3.8: Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all**.**

SDG 8 – Descent Work and Economic Growth: SDG 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 Promote inclusive and sustainable economic growth, employment and decent work for all	**Measurement Method:** - Training and employment generation is monitored through training records, staff register or letter from O&M contractor for training and employment details or HSE/HR records. **QA/QC Process:** This parameter is based on records, data and no any QA/QC procedure required. The DOE will confirm this parameter with interview with PP or Site in charge or employees for training and employment generation. **Relevant SDG Target:** 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. • 2 Trainings for staffs/year • 80 number of jobs • 0.5 million USD spent on O&M/year **Corresponding indicator:** Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
SDG 13 – Climate Action: Take urgent action to combat climate change and its impacts	**Measurement Method:** - The emission reduction parameter is calculated as product of net electricity supplied to grid and grid emission factor. The grid emission factor is monitored ex-post which is based on the latest data obtained from 2018 by Directorate General of Electricity (Ministry of Energy and Mineral Resources or DNA Indonesia) for the province Lombok.[11]. This is in line with "Tool to calculate the emission factor for an electricity system, version 07.0". The emission reductions are calculated as per the formula provided by the approved methodology ACM0002 version 20.0 **QA/QC Process:** This parameter is calculated, and no any QA/QC procedure required. **Relevant SDG Target:** Integrate climate change measures into national policies, strategies and planning (60,9165 ~~5~~ tCO_2 per annum)

[11] https://gatrik.esdm.go.id//frontend/download_index/?kode_category=emisi_pl

	from the project **Corresponding indicator:** Emission reductions in tCO_{2e} from the project activity. Number of countries that have communicated establishment or operationalization of an integrated policy/ strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)

- **Principle 3: Stakeholder Inclusivity**

  As per the CDM/GS requirements, it is necessary to invite the relevant stakeholders, before the validation process starts. The stakeholder consultation meeting was conducted through physical stakeholder meeting. The details of the meeting are as below:

No	Developer	Meeting Date & location
1	PT Infrastruktur Terbarukan Lestari (ITL)	20/09/2019 at 09.00 AM Location: Gardu Induk Likupang, Tim, Wineru, Likupang Tim, Kabupaten Minahasa Utara, Sulawesi Utara, Indonesia
2	PT Infrastruktur Terbarukan Adhiguna (ITA)	20/02/2020 at 11.00 AM Location: Site office, PT Infrastruktur Terbarukan Adhiguna (ITA), Camporonan sub-village, Pringgabaya Utara village, Pringgabaya district, Lombok Timur regency, Nusa Tenggara Barat province, Indonesia
3	PT Infrastruktur Terbarukan Buana (ITB)	20/02/2020 at 03.00 PM Location: Site office, PT Infrastruktur Terbarukan Buana (ITB), Geres Baret sub-village, Geres village, Labuhan Haji district, Lombok Timur regency, Nusa Tenggara Barat province. Indonesia
4	PT Infrastruktur Terbarukan Cemerlang (ITC)	21/02/2020 at 11.00 AM Location: Site office, PT Infrastruktur Terbarukan Cemerlang (ITC), Sengkol 1 sub-village, Sengkol village, Pujut district, Lombok Tengah regency, Nusa Tenggara Barat province

The planning for carrying out this consultation has been initiated in advance by factoring the convenience of local stakeholders.

For the purpose of Stakeholder Consultation meeting, Individual Invitation Letters were issued to the relevant Local Administrative departments and Notices were paste in public place, so as to reach maximum populace. Both Public notice and Letters included the Venue, Date, Time and purpose of the meeting is checked by the assessment team and found correct. The local public showed great interest and shared full support for solar power project operations. The same is thus acceptable to the assessment team.

The stakeholder feedback round was open for 60 days from 09/07/2020 to 08/09/2020. Email with public web link of project documents are sent to all stakeholders who were invited for the initial stakeholder consultation meeting. The link for the project documents are:

GS Registry link	https://registry.goldstandard.org/projects/details/2055
Non-Technical Summary	https://drive.google.com/file/d/1Kxs8d5nNsnOVTtNW1lONBX0AMX_0VQdh/view?usp=sharing
GS4GG PDD	https://drive.google.com/file/d/1Nj1cqwHbC0nkZxMrT3uRrnoHSc-PjJlS/view?usp=sharing
LSC Report	https://drive.google.com/file/d/1TipHj_cC_BqsHwm6dAzIHvJvyNSZW8y7/view?usp=sharing

Also hard copy of project documents is kept at project site for the review of local stakeholders. No comments found during the physical stakeholder round.

Online stakeholder feedback round was open from 09/07/2020 to 08/09/2020. An email with online link of all project documents (PDD, Non-technical summary & Stakeholder consultation report) were sent to all stakeholders who were invited for the stakeholder consultation meeting and requested comments on the documents. However, no comments received from any stakeholder during the period.

The stakeholders identified by the project participant were local villagers who are the major population of the particular area, local communities and gram panchayat (Village head), solar PV supplier, project proponent representatives, O&M Team and other people involved in the project. Validation team verified the list of participants who attended the stakeholder meeting and feedback questionnaire and confirms the stakeholders identified are relevant. The validation team also verified the minutes of meeting to note that no negative comments were received and the same was cross checked with the information obtained during follow up interviews with the stakeholder's.

Thus, Assessment team is of the opinion that the stakeholder meeting was adequate and appropriate.

Assessment team asked following queries to the stakeholders during the validation site visit and concludes that stakeholders are overall happy with the implementation of the

project activity. The Project Developer ensures that local workers/employees are preferred, to the extent possible, for employment during construction as well as operation phase of the project ensuring skill development in the local populace. The idea and effort put forward by the PP is comendable and hence the same is acceptable to the assessment team to include stakeholder in each and every phase of the project.

Assessment team also noticed during onsite visit that a grievance register is placed on site and grievance cell is in charge to resolve the complaints if any received during both construction and operation phase of the project activity. The information regarding grievance register is circulated through public notices so that locals people are aware of the same and can put forth there opinion regarding the project activity. The idea and effort put forward by the PP is comendable and hence the same is acceptable to the assessment team to include stakeholder in each and every phase of the project.

Some of the questions asked to the stakeholders mentioned in section above of this report are reported below:

Name of the stakeholder	Terra Sompie – Female (Category B as per GS guideline) + Arie Suhendri -Male (Category B as per GS guideline)
DOE QUESTION: Did this solar power plant cause any pollution? Answer: No, the plant does not cause any pollution. DOE QUESTION: Did PP promised employment opportunity? Answer: Yes, PP told us that employment will be generated and the locals will be given priority. DOE also like to conclude that during the site visit it was observed that local people were employed for security and operation related work like water spraying, vegetation improvement and other unskilled work. DOE also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.	
Name of the stakeholder	Rahmat Alfian Hidayatulloh- Male (Category B as per GS guideline)+ Pebriandl - Male (Category B as per GS guideline)
DOE questions: Did the power plant discharge any harmful pollutants?	

Answer: NO the plant does not discharge any harmful pollutants. DOE questions: Did the power plant destroy any crop fields? Answer: The plant is implemented in barren land and there were no any fertile land or crop which is damaged. DOE thus conclude that stakeholders are happy with the implementation of the project activity.

- **Principle 4: Demonstration of real outcomes**

  The Sustainable monitoring plan is described below:

SDG Parameter	Indicator	Monitoring
SDG 3: Good Health & Well being	Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	The parameter will be monitored via CSR records and photographic evidence. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity. Data / Parameter : Good Health & Well being Unit: Number of Health Camps, Knowledge and information dissemination regarding natural disasters Source of data: CSR records and photographic evidence Measurement methods and procedures: Not applicable Monitoring frequency: Once in year
SDG 7 : Affordable and Clean Energy	Quantity of net electricity generation supplied by the project plant/unit for captive purpose in year y in MWh	The available parameter to Project owner is net electricity supplied to grid and same is mentioned as monitoring parameter. The net electricity generation is calculated based on Export, import to the meters connected at the sub-station. Net electricity supplied will be

		calculated based on the difference between values of "export" and "import" on the energy meter at the sub-station (evacuation point). (Net Electricity = Export – Import) The net electricity will be calculated by PLN and provided in the monthly generation statement. Hence, the net electricity reading will be directly sourced from the monthly generation statement. . Net electricity supplied to the grid by the project activity will be cross checked with invoices. The meter(s) shall be calibrated and maintained by the authorities as per their schedule, and this frequency of meter calibration is not within the control of the Project Proponent. However, the project proponent shall ensure that calibration of electricity meters is carried at least once in 5 year calibration or whenever abnormal difference/inconsistency is observed between main meter and check meter. These are sealed by PLN to avoid malfunctioning with meter readings. The officials frequently check the meters for tampering and malfunctioning with the meters. Meter is calibrated once in 5 years by the authority in the presence of O&M Contractor / investors representatives and PLN officials to ensure the working of meter within permissible limits. The

		calculation of net electricity supplied to grid is under purview of PLN and Project owner do not have control on it. The onsite practice is thus acceptable to the assessment team as the same is as per the requirement of the approved methodology. Data / Parameter : $EG_{facility,y}$ Unit: MWh/year Source of data: Monthly energy generation statement issued by PLN. These are called JMR (Joint Meter Reading) Measurement methods and procedures: Net Electricity = Export – Import Monitoring frequency: measured continuously and recorded monthly
SDG 8 : Decent Work and Economic Growth	Quantitative employment and income generation	Project participant have Documentation pertaining to employment, attendance register and documentary details of training/capacity building. Assessment team also checked the salary slips and confirms that due to project activity peoples are getting more than minimum wages as a salary and this salary is better than local level salary. Based on the roles and responsibility of employee, the salary will be higher than the minimum salary of the region and hence the parameter monitoring is acceptable to the assessment team. Data / Parameter : Quantitative

		employment and income generation Unit: Cost spent for O&M and Number of employment generated by the project Source of data: Plant employment records Measurement methods and procedures: Not applicable Monitoring frequency: Once in a year
SDG 8 : Decent Work and Economic Growth	Quality of employment	The training records are maintained on regular basis with annual consolidation. Assessment team checked onsite that at least more than 80 people are expected to be employed at site during crediting period. The employment opportunities generated are local or temporary or permanent as checked and confirmed by the assessment team. The training related to O&M, Safety, emergency procedure, fire safety etc. are provided to employees. Since local people are employed due to project activity, the training given to employees improves the quality of employment. Apart from these training to employees, the PP organizes few events which will be beneficial to society as a part corporate social responsibility (CSR) activities as per their policy. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity.

		It will be ensured that safe working condition and safety equipment's has been provided for all skilled and unskilled Labour. It will be checked during verification through site visit observations and interview with people if noise level is maintained within permissible limit. Safety equipment to be provided to workers both skilled and unskilled will be checked during the verification of the project activity. Assessment team however checked the same is already provided to the workers as part of companies CSR (EHS) policy. Data / Parameter : Quality of employment Unit: Number of Trainings provided to employees & O&M staffs Source of data: Training Records Measurement methods and procedures: List of training programmes conducted and the number of beneficiaries are recorded Monitoring frequency: Once in a year
SDG 13: Climate Action	Emission Reductions	The emission reduction calculation will be done as per the formula mentioned in the GS4GG PDD. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity.

		Data / Parameter : Emission Reductions Unit: tCO_2 e Source of data: Plant records and ER calculation sheet Measurement methods and procedures: NA Monitoring frequency: Annual
Soil Erosion	Safeguarding Principle 8.2: Erosion and/or Water Body Instability	As per the ESIA report following measures will be applied for the project: • Implement silt control measures such as silt fences and silt traps. • Stockpiles of excavated materials should be stored appropriately in designated areas and at a minimum distance of 10m from any nearby watercourses or drains. • Control of the generation of silt laden surface water runoff will be by use of mitigation measures such as bunds, settlement ponds, silt fences, silt traps, or by covering the stockpiles with plastic sheeting. Long term stockpiles will be placed at a suitable gradient and grass planted. The above measures are acceptable at this stage of validation as it will not only improve soil condition however

		will also ensure less soil erosion. The parameter will be monitored via Project O&M HSE logbook, or interview with maintenance staff. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity. Data / Parameter : Soil Erosion Unit: Not Applicable Source of data: Project O&M HSE logbook, or interview with maintenance staff. Measurement methods and procedures: Not applicable Monitoring frequency: Once in year
Hazardous waste management	Safeguarding Principle 9.5 Hazardous and Non-hazardous Waste	As per ESIA report, the following management measures shall be followed: • Provision of proper temporary storage for hazardous waste • Waste segregation • Waste disposal by an appointed/accredited waste disposer company The above measures are acceptable at this stage of validation because this is the standard practice followed in Indonesia for all Hazardous disposals. The parameter will be monitored via Project O&M HSE logbook, or interview with maintenance staff. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity.

		Data / Parameter : Hazardous waste management Unit: Not Applicable Source of data: Project O&M HSE logbook, or interview with maintenance staff. Measurement methods and procedures: Not applicable Monitoring frequency: Once in year
Maintenance of Landscape visual impact	Safeguarding Principle 9.1: Landscape Modification and Soil	As per ESIA report, the following management measures shall be followed: • Locals will be consulted wherever a panel's location or access road was in vicinity to a settlement. • Re-vegetation taken up as necessary after construction, in order to reduce the risk of soil erosion. The above measures are acceptable at this stage of validation as it will not only improve soil condition however will also ensure less soil erosion. The parameter will be monitored via Technical specification of panels Project Grievance register, or interview with local villagers. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity. Data / Parameter : Maintenance of Landscape visual impact Unit: Aesthetics

		Source of data: Technical specification of WTGs and Project Grievance register, or interview with local villagers Measurement methods and procedures: Not applicable Monitoring frequency: Once in year

Transmission line effect: The project activity is exporting the generated electricity to grid. The EPC contractor and state electricity board is responsible for the construction of transmission line. They are following safety while construction of transmission lines. The project proponent does not have any role in the construction of transmission lines. The standard procedures are followed at site while commissioning the transmission lines.

- **Principle 5: Financial Additionality & Ongoing Financial Need**

During conceptualization of the project activity, board of directors of the project proponents considered the CDM/GS revenue to improve the project financials. During the board meeting by all the promoters dated 02/05/2018 for board of Directors decided that they would consider going ahead for the project activity. In continuation to the board decision, PP issued the respective purchase order for the supply of Solar Panels.

The project start date is 10/08/2018 and the first submission to GS is on 31/07/2019 which is within 1 year from start date. The first submission of project activity to GS is within one year of start date, thus project activity qualifies as retroactive GS VER project activity. Thus prior consideration of carbon revenue for current project activity is checked by the assessment team and found correct. The email sent to GS for the preliminary review within 1 year of project start date is checked and found corrected by the assessment team.

Assessment team checked the Continous and real action considered for the project activity and the same is described below:

Activity	**Date**
Board decision on investment of the project	02/05/2018
Notice to proceed to EPC Contractor (Start date)	10/08/2018
Appointment of Consultant for securing GS registration status	01/12/2018
Appointment of VVB for validation of project under GS	01/06/2019
Start date of the project	10/08/2018
First submission of PDD to GS	31/07/2019
Stakeholder consultation	20/09/2019, 20/02/2020 &

	21/02/2020
Stakeholder feedback round	09/07/2020 to 08/09/2020

In the above background Validation Team concludes that the additionality justification regarding the serious CDM consideration given by the project developer is in accordance with the requirements derived from CDM EB/GS4GG.

As per the applied methodology ACM0002, Version 20, under section 5.3.1 details a Simplified procedure to demonstrate additionality.

As per para 29 of the methodology, "*A specific technology in the positive list is defined as automatically additional if at the time of PDD submission any of the following conditions is met:*

(a) The percentage share of total installed capacity of the specific technology in the total installed grid connected power generation capacity in the host country is equal to or less than two per cent; or

(b) The total installed capacity of the technology in the host country is less than or equal to 50 MW"

Assessment team found that the project technology is solar photovoltaic power generation which is included in the positive list of technology as per para 28 of the methodology.

The total installed capacity of the grid connected power plant in Indonesia as on December 2018 is 62,255.81~~904.54~~ MW[12]

Total installed capacity of the grid connected solar power plant as on December 2018 is 24.42 MW[13].

From the above data, the total installed capacity of the project technology (Solar PV) is merely 0.039% of total installed grid connected power generation in the host country (Indonesia) which is lesser than 2%. Also, the total installed capacity of the project technology (Solar PV) in the host country (Indonesia) is less than 50 MW. Hence, the project is automatically additional.

Note: The latest data made available by Ministry of Energy and Mineral Resources, Indonesia is up to December 2018 and hence the same is considered for the above analysis.

[12] https://www.esdm.go.id/assets/media/content/content-handbook-of-energy-and-economic-statistics-of-indonesia-2018-final-edition.pdf (Table 6.4.1)~~https://www.esdm.go.id/assets/media/content/content-laporan-kinerja-kementerian-esdm-tahun-2018.pdf (Table 32, page 68)~~

[13] https://www.esdm.go.id/assets/media/content/content-handbook-of-energy-and-economic-statistics-of-indonesia-2018-final-edition.pdf (Table 6.4.1)

3.9 Calculation algorithm and/or formula used to determine emission reductions

The GS4GG PDD of the project activity is checked by the assessment team and found that ACM0002 version 20.0 is used at the time of GS validation. The formula used in the GS4GG PDD was used for the calculation of emission reduction and same is found to be correct. Hence emission reduction calculation at this time of validation is conservative and appropriate.

Assessment team checked that Formula used to calculate the net emission reduction for the project activity is

$ER_Y = BE_Y - PE_Y$

Where,

ER_Y = Emission Reduction in tCO_2/year

BE_Y = Baseline emission in tCO_2/year

PE_Y = Project emissions in tCO_2/year

Baseline Emissions:

The baseline emission is calculated in line with ACM 0002, Version 20, using equation below

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

Where,

BE_y = Baseline emissions in year y (t CO_2/yr)

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

$EF_{grid,CM,y}$ =Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO_2/MWh)

AS per ACM0002, version 20.0, when the project activity is installation of Greenfield power plant, then:

$EG_{PJ,y} = EG_{facility,\ y}$

Where,

$EG_{facility,\ y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

For ex-ante calculation, the net electricity generation is considered are given below:

Project	**$EG_{PJ,y}$**	**Source**
ITA	10,526 MWh	PV syst Report
ITB	11,047 MWh	PV syst Report

ITC	11,018 MWh	PV syst Report
ITL	32,561 MWh	PV syst Report
Total	65,142 MWh	Calculated

Directorate General of Electricity, Ministry of Energy and Mineral Resources, Indonesia published the 2016 - Emission Factor Reference Official Document which is the latest version available now. As per the reference document, the ex-ante emission factor with the 75% & 25% weights for OM & BM are as below: .

Grid	**Combined Margin Factor**
Lombok ($EF_{Lombok,CM,y}$)	0.93 tCO_2/MWh
Sulutgo ($EF_{Sulutgo,CM,y}$)	0.94 CO_2/MWh

Hence, baseline emission is calculated as below:

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

Baseline emission for the first year is calculated as below

Project	**Grid**	**$EG_{PJ,y}$**	**$EF_{grid,CM,y}$**	**BE_y**
ITA	Lombok	10,526 MWh	0.93 tCO_2/MWh	9,789 tCO_2
ITB	Lombok	11,047 MWh	0.93 tCO_2/MWh	10,27~~43~~ tCO_2
ITC	Lombok	11,018 MWh	0.93 tCO_2/MWh	10,24~~76~~ tCO_2
ITL	Sulutgo	32,561 MWh	0.94 tCO_2/MWh	30,607 tCO_2
Total	-	65,142 MWh	-	60,91~~65~~ tCO_2= Round down

Project Emission

As per the ACM0002 verion 20.0, Project Emission for most renewable energy power generation project activities, $PE_y = 0$. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$

Where:

PE_y = Project emissions in year y (tCO_2e/yr)

$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y (tCO_2/yr)

$PE_{GP,y}$ = Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year y (tCO_2e/yr)

$PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year y (tCO_2e/yr).

The project activity involves the generation of electricity from the installation of solar Panels. Hence, as per ACM0002, Version 20.0, there is no project emission for solar projects. Therefore, project emissions are zero.

Leakage is neglected as per the requirement of the approved methodology.

Hence,

$ER_y=BE_y=$ 60,916~~5~~ tCO_2 per annum

SDG 13 Climate Actions- Estimate

Year	Baseline estimate	Project estimate	Net benefit
Year 1	60,916~~5~~ tCO2e	0 tCO2e	60,916~~5~~ tCO2e
Year 2	60,612 tCO2e	0 tCO2e	60,612 tCO2e
Year 3	60,309 tCO2e	0 tCO2e	60,309 tCO2e
Year 4	60,007 tCO2e	0 tCO2e	60,007 tCO2e
Year 5	60,707 tCO2e	0 tCO2e	60,707 tCO2e
Total	304,551 tCO2e	0 tCO2e	304,551 tCO2e
Total number of crediting years	5		
Annual average over the crediting period	60,310 tCO2e	0 tCO2e	60,310 tCO2e

SDG 7: Affordable and Clean Energy- Estimate

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0 MWh	65,152 MWh	65,152 MWh
Year 2	0 MWh	64,826 MWh	64,826 MWh
Year 3	0 MWh	64,502 MWh	64,502 MWh
Year 4	0 MWh	64,180 MWh	64,180 MWh
Year 5	0 MWh	63,859 MWh	63,859 MWh
Total	0 MWh	322,519 MWh	322,519 MWh
Total number of crediting years	5 Years		
Annual average over the crediting period	0 MWh	64,504 MWh	64,504 MWh

SDG 8: Decent Work and Economic Growth- Estimate

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0 Training, 0 O&M cost spent & 0 employment	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation
Year 2	0 Training, 0 O&M cost spent & 0 employment	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation

Year 3	0 Training, 0 O&M cost spent & 0 employment	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation
Year 4	0 Training, 0 O&M cost spent & 0 employment	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation
Year 5	0 Training, 0 O&M cost spent & 0 employment	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation
Total	0 Training, 0 O&M cost spent & 0 employment	• 10 Training provided to O&M staff • 2.5 Million USD spent on O&M • 80 Employment generation	• 10 Training provided to O&M staff • 2.5 Million USD spent on O&M • 80 Employment generation
Total number of crediting years	5 Years		

Annual average over the crediting period	0 Training, 0 Jobs, 0 O&M spent	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation	• 2 Training provided to O&M staff/year • 0.5 Million USD spent on O&M/year • 80 Employment generation

SDG 3: Good health and well-being- Estimate

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0 activities	3 Activities/year	3 Activities/year
Year 2	0 activities	3 Activities/year	3 Activities/year
Year 3	0 activities	3 Activities/year	3 Activities/year
Year 4	0 activities	3 Activities/year	3 Activities/year
Year 5	0 activities	3 Activities/year	3 Activities/year
Total	0 activities	15 Activities/year	15 Activities/year
Total number of crediting years	5 Years		
Annual average over the crediting period	0 activities	3 Activities/year	3 Activities/year

The baseline, project and net benefit estimation for all the SDGs are presented in the excel sheet. The excel sheet is verified and found that the ex-ante estimation of all the SDGs are correct.

ISSUES FROM PRELIMINARY REVIEW:

As verified form the preliminary review report, there is no FAR raised in the preliminary review. However, there are two likely CARs are raised. The assessment of the two likely CARs provided below:

Comment raised by GS	DOE assessment

Likely CAR # 1: Project start date of 10/08/2018 shall be validated by the VVB at the stage of Design Certification. The project becomes ineligible if the project documents were not submitted to Sustain Cert within one year of the start date.	Please refer CAR #8. The project start date is 10/08/2018- Date of notice to proceed to EPC contractor and the first submission to GS is on 31/07/2019 which is within 1 year from start date. The first submission of project activity to GS is within one year of start date, thus project activity qualifies as retroactive GS VER project activity. Thus prior consideration of carbon revenue for current project activity is checked by the assessment team and found correct. Hence, the assessment team confirms that the project comply with the prior consideration requirements mentioned in 4.1.49 (b) of Principles & Requirements.
Likely CAR # 2: The VVB shall validate if the GS4GG requirements of Stakeholder Consultation was followed by the PD.	The stakeholder consultation was carried out on 20/09/2019 20/02/2020 & 21/02/2020 as per the 'Stakeholder Consultation And Engagement Requirements'. Please refer Principle 3: Stakeholder Inclusivity of this report for detail assessment.

4. REFERENCE

S. No.	Document/Evidence/Reference/Web-link, Version, Date
1.	Initial GS4GG PDD, version 01 dated 29/07/2019 ~~Final~~ Revised GS4GG PDD, version 02 dated 15/09/2020 Final GS4GG PDD, version 03 dated 30/12/2020
2.	Minutes of Meeting for Local Stakeholders' Consultation dated 20/09/2019, 20/02/2020 & 21/02/2020
3.	Emission Reduction Sheet for the project activity version 01 29/07/2019 Emission Reduction Sheet for the project activity version 02 15/09/2020 Emission Reduction Sheet for the project activity version 03 30/12/2020
4	Methodology: ACM0002 version 20.0
5	Standard: CDM Project Standard for project activities version 02
6	Standard: CDM Validation &Verification Standard for project activities version 02
7	Procedure: CDM Project Cycle Procedure for project activities version 02

8	Tools: • Tool to calculate the emission factor for an electricity system, Version 7.0
9	GS4GG guideline version 1.2
10.	Training Records of project staff at site
11.	Declaration for non-receiving of ODA for project. Declaration of not participating in any other GHG mechanism dated 26/06/2020
12.	Universal Declaration of Human Rights[14] and also ratified ILO Convention 111 on Discrimination (Employment and Occupation)[15].
13.	Indonesia is also party to Convention 100 (Equal remuneration) since 1958 and 111 on Discrimination in employment/occupation since 1999 to prevent any form of discrimination[16]
14	Indonesia is a party to United Nation Convention against Corruption since 18 Dec 2003[17]:
15	Ministry of Environment and Forest http://moef.nic.in/division/environment-protection
16	Emails sent to NGO, Stakeholders, villagers for stakeholder feedback round (= 60 days' time period for comments)dated 09/07/2020 to 08/09/2020
17	UNFCCC Website for CDM mechanism–http://cdm.unfccc.int/ GS4GG website: https://www.goldstandard.org/
18	HR employment records/CSR policy of the project staff on site
19	Board decision for investing in Project by all project promoters and securing carbon credits dated 02/05/2018
20	Placement of the Purchase Orders (= start date of the project) dated 10/08/2018
21	Commissioning certificate of project activity

[14] http://www.komnasham.go.id/profil

[15] https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUNTRY_ID:102938

[16] http://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:102938

[17] https://treaties.un.org/pages/viewdetails.aspx?src=ind&mtdsg_no=xviii-14&chapter=18&lang=en#EndDec

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5. FINAL PROJECT DESIGN CERTIFICATION STATEMENT

Applus+Certification have performed a validation of the "42 MWp Bundled Solar Photovoltaic Power project in Indonesia". The validation was performed on the basis of UNFCCC criteria CDM Validation and Verification Standard for the project activities version 02.0, Gold Standard GS4GG guideline version 1.2 and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the GS4GG PDD version 2 and the subsequent follow-up interviews has provided Applus+ Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project meets all relevant UNFCCC and Gold Standard requirements for the Gold Standard and all relevant host country criteria. The project will hence be recommended by Applus+ Certification for registration with the Gold Standard Registry.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO_2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change. 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 as designed, the project is likely to achieve the estimated amount of annual emission reductions of 60,916~~5~~ tCO_2e per year.

The validation has been performed following the requirements of the latest version of the CDM Validation and Verification Standard for the project activities version 02.0, Gold Standard GS4GG guideline and on the basis of the contractual agreement.

In detail the conclusions can be summarized as follows:

- The project does not result in negative social, environmental and/or economic impacts.

- The project contribution to Environment, Social Development and Economic and technological development

- The project additionality is sufficiently justified in the Gold Standard PDD

- The project does not result in diversion of ODA.

- Conservative assumptions were applied in the project description.

- The monitoring plan of SD parameters is transparent and adequate.

- The project meets the stakeholder consultation requirements.

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

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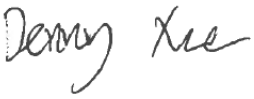
Date: 06/01/2021~~28/09/2020~~

Lead Auditor: Mr. Sukanta Das
Tech. Expert: Mr. Sukanta Das
Tech. Reviewer: Mr. Denny Xue
Approver *(Applus+ Certification Business Unit Managing Director)*
Mr. Juan Sendín Caballero

ASSESSMENT TEAM	
Team Leader SUKANTA DAS	**Technical Reviewer:** DENNY XUE
Signature: 	Signature: 
Approver: Mr. Juan Sendín Caballero	
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Appendix 1: Corrective Action Request/Clarification Request/Forward Action Request resolution table

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Mr. Sukanta Das	Ref. to checklist in GS4GG PDD:	A.3, A.5. A.7
Description of the audit finding		Date:	24/09/2019
• As per section A.3 the legal rights of the project participant is justified. However, supporting documents like Commissioning Certificate and Contract with EPC Contractor is missing. • In section A.5 the technical details are mentioned however the supporting documents for technical details of the WTGs are not submitted to the assessment team. • IN section A.7, it is mentioned that project has not used any ODA. However, the supporting of the same is also missing.			
Project Participant's response		Date:	15/09/2020
• Commissioning Certificate and approvals are submitted for proof of legal right of the project participants. • EPC Contractor technical specifications of the power plants are now submitted to the assessment team. • ODA declaration is submitted to assessment team.			
Documentation provided as evidence by Project Participant			
Commissioning certificate Approvals Technical specification ODA Declaration			
Auditor's assessment comment		Date:	25/09/2020
The supporting document is like Commissioning certificate, EPC Contract, Technical Specification of panels is now submitted to the assessment team. CAR is closed. ODA declaration is checked and found correct. CAR is thus closed			

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Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	02
Raised by:	Mr. Sukanta Das	Ref. to checklist in GS4GG PDD:	A.8
Description of the audit finding		Date:	24/09/2019
• In section A.8 Indonesia is party to "Indonesia is also party to Convention 100 (Equal remuneration) since 1958 and the project has aligned its **HR policies/CSR reports** which do not discriminate on gender. The supporting policies documents for the same is not submitted to the assessment team			
Project Participant's response		Date:	15/09/2020
The HR Policy & CSR manual of the developer has submitted. Article 43 of HR policy confirms the company acknowledges the rights of Employee to the working environment which is free from any form of discrimination. Section 8.7.10.3 of the manual confirms Equal Opportunities and Non-Discrimination.			
Documentation provided as evidence by Project Participant			
HR Policies CSR Reports			
Auditor's assessment comment		Date:	25/09/2020
The supporting documents like HR Policy/CSR reports are now submitted to the assessment team. CAR is thus closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Mr. Sukanta Das	Ref. to checklist in GS4GG PDD:	B.5
Description of the audit finding		Date:	24/09/2019
Following observation is noticed by DOE for the additionality assessment:			

1. The document is in Indonesia language and thus English version is required. 2. The prior consideration documents is missing 3. Common practice analysis is not detailed out with supporting documents. Corrective action is sought.		
Project Participant's response	Date:	15/09/2020
1. The English translation of respective pages are now submitted 2. Serious consideration of carbon revenue is justified in section B.5 of the PDD and the supporting documents are submitted. 3. Common practice analysis is not applicable as the project falls under auto additional.		
Documentation provided as evidence by Project Participant		
English translation of documents Board resolution copy Notice to proceed Contract with consultant for GS registration Screen short of registry for first submission Stakeholder consultation report		
Auditor's assessment comment	Date:	25/09/2020
The supporting documents for prior consideration are submitted to the assessment team. The solar PV technology installation is less than 2% in the host country and hence the project is automatic additional. CAR is closed.		

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Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	04
Raised by:	Mr. Sukanta Das	Ref. to checklist in GS4GG PDD:	B.6.1, B.6.2 and B.6.5
Description of the audit finding		Date:	24/09/2019

1. The supporting's to the indicator mentioned relevant to SDG is missing. Corrective action is sought for the same.
2. As per SDG 3: CSR policy is not submitted to the assessment team. Corrective action is sought for the same
3. As per **SDG 8: Decent Work and Economic Growth :** The project leads to Trainings & workshops which are conducted for the O&M staff of Manufacturar as well as for the O&M staff of the PP, by their respective companies. Moreover, PDD claims equal pay for equal work, Person with Disability also get Decent work. The statments is not backed by propoer evidences.
   - No. of trainings provided to the employees – **Supporting missing**
   - Employment generated due to project activity - **Supporting missing**
   - The employment records/Salary slips- **Supporting missing**
4. The basis for baseline estimate and project estimate in Section B.6.5 is missing.
5. The emission reduction sheet is not submitted
6. The PLF compliance as per Annex 11 EB 48 is not provided.

Project Participant's response	Date:	15/09/2020

1. The supporting' to the indicator mentioned relevant to the SDG is now provided

2. The CSR manual is now submitted to assessment team

3. The supporting documents for SDG 8: The salary is be determined by the Company based on education background, experience, skill/competency, responsibility, job values, and performance of an employee; Not based on the gender. Refer Article 17 (2) of the HR policy.
   - The training records are submitted
   - Employment records are submitted.

4. The basis for the baseline estimate and project emission is now included in the section B.6.4 of the PDD.

5. The emission reduction sheet is submitted

6. PLF report prepared by third party company is provided now.		
Documentation provided as evidence by Project Participant		
Revised PDD CSR Manual HR Policy ER sheet PLF Estimation report prepared by third party		
Auditor's assessment comment	Date:	25/09/2020
The supporting documents for SDG goals are now submitted to the assessment team. The basis for the baseline estimate and project emission is now included in the section B.6.5 of the PDD. The estimated emission reduction sheet is now submitted to the assessment team and the same is found correct. 3rd party PLF report is now submitted to the assessment team. CAR is thus closed.		

Type:	☒ CAR	☐ CL/CR ☐ FAR	Number:	05
Raised by:	Mr. Sukanta Das		Ref. to checklist in GS4GG PDD:	B.7.1
Description of the audit finding			Date:	24/09/2019
The monitoring parameters as mentioned in the section B.7.1 does not match with the SDG selected. For example SDG 3: Good health and well-being is not mentioned. Detail corrective action is sought.				
Project Participant's response			Date:	15/09/2020
The monitoring parameters as mentioned in the section B.7.1 are modified now to match with the SDG selected.				
Documentation provided as evidence by Project Participant				
Revised PDD				
Auditor's assessment comment			Date:	25/09/2020

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All the SDG parameters are now correctly mentioned in the monitoring section of the GS4GG PDD. Based on the revision of the section CAR is thus closed.

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	06
Raised by:	Mr. Sukanta Das	Ref. to checklist in GS4GG PDD:	D.1
Description of the audit finding		Date:	24/09/2019

- As per section 3.3, it is mentioned that the Safety requirement of the workers and community is taken care by the project. Supporting evidences along with site photo is not submitted to the assessment team.
- As per section 3.4.2 it is mentioned that the proponent obtained necessary clearances from nodal agencies and NOC from all the Gram Panchayets for establishing the plant. Moreover, the project has all the legal, customary rights on the land. No such evidences submitted to assessment team.
- As per section 3.4.3, please discuss further the property ownership for the project area, any held expropriations.
- Under PDD D.1, PP shall revisit the assessment of relevance to the project for the indicators such as land tenure, economic impacts, energy supply, etc.
- PP shall clarify out of estimated people working for the project activity, how many of them being local
- As per section 3.2 the project proponent has a stipulated HR policy that takes into account participation by both men and women. Further, the CSR projects designed are implemented for equal participation of both men and women. No such evidences submitted to assessment team.
- As per section 4.3.1, the project activity has developed EHS and social guideline. Supporting documents are missing.
- As per section 4.3.4, the project has received environmental clearance from the State Pollution control Board. Further the EHSS Guidelines takes into account the same. Supporting are missing.
- As per section 4.3.5 , the project during operational phase uses various type of oil/lubricants, grease which are classified as hazardous. These waste are handled in line with hazardous waste management rules and are disposed of accordingly. Supporting evidences

missing. • Section 4.3.10 and 4.3.11 is not backed by supportings.		
Project Participant's response	Date:	15/09/2020
• The latest Sustainability report is submitted. Section 3.1.3 of the report provides the safety requirements followed by PP. Also EHS policy submitted. • Clearances & NOCs from all relevant authorities are obtained. All the clearances & NOCs are now submitted to assessment team. • The ownership of the project area is discussed in the PDD. • The assessment relevant to land tenure, economic impacts, energy supply, etc are now revised in the PDD. • The percentage of local people employed among the total employees is now provided in the PDD • The HR Policy and CSR manual is provided as supporting evidence for equal participation of both men and women. • ESHS Manual and CSR manual are submitted. • All the clearances are submitted to DOE. Also the ESIA report is submitted in support of that. The justification in the PDD is modified accordingly • The hazardous wastes will be managed as per the rules of the Host country. ESIA report is submitted in supporting that. The justification in the PDD is modified accordingly • The ESIA report is provided in support of justification provided in Section 4.3.10 and 4.3.11.		
Documentation provided as evidence by Project Participant		
Revised PDD CSR manual HR Policy ESIA report ESHS manual Clearances		
Auditor's assessment comment	Date:	25/09/2020
All the supporting documents related to individual points mentioned in the CAR is now submitted to the assessment team. CAR is thus closed.		

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Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	07
Raised by:	Mr. Sukanta Das	Ref. to checklist in GS4GG PDD:	E
Description of the audit finding		Date:	14/06/2019

Section E is reserved till the submission of Local stakeholder consultation documents (attendance sheet, Minutes of meeting, site picture etc). Section is thus reserved.

1. Did the stakeholder consultation report has been prepared and provided to GS following the meeting.
2. What is the médium to inform the people for the stakeholders meetings and how the people to be atended are selected.
3. PP to clarify were all stakeholders invited to the first stakeholder consultation invited for further comments during the stakeholder feedback round
4. PP to provide document to support if any outstanding legal contest or disputes regarding the project activity is pending.

Project Participant's response	Date:	15/09/2020

The stakeholder consultation report which includes are the above details are provided. The section E is also updated based on the stakeholder consultation report.

1. Yes, the stakeholder consultation report is now submitted.

2. Stakeholders are invited though public notices, individual invitations & email invitations. The details of the stakeholder invitation process is included in the stakeholder consultation report.

3. Yes, all the stakeholders invited to the first stakeholder consultation were invited for LSC feedback round also which is now ongoing.

4. There is no outstanding legal contest or disputes regarding the project activity.

Documentation provided as evidence by Project Participant

Stakeholder consultation report

Vena energy framework assessment by JCR agency

Auditor's assessment comment	Date:	25/09/2020

The minutes of meeting for the physical stakeholder round is checked and found correct by the assessment team. Stakeholders are invited though public notices, individual

invitations & email invitations. The details of the stakeholder invitation process are included in the stakeholder consultation report and in revised GS4GG PDD. There is no outstanding legal contest or disputes regarding the project activity. Assessment team checked Vena Energy framework evaluation report by a JAPAN credit rating agency that confirms no disputes or other serious problems have occurred in any of the Vena Energy projects. This is acceptable to the DOE and thus CAR is closed.

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	0808
Raised by:	Mr. Sukanta Das	Ref. to checklist in GS4GG PDD:	B.5
Description of the audit finding		Date:	30/12/2020
PP has considered the Project start date as 10/08/2018. The project being retroactive project, PP shall submit the project documents to Sustain Cert within 1 year from the start date of the project activity as per the GS4GG prior consideration requirements. Refer para 4.1.49 (b) of PAR v1.2. PP shall justify the same and submit proof that PP had submitted the project documents within 1 year from start date of the project (ie, before 10/09/20219).			
Project Participant's response		Date:	31/12/2020
The start date of the project is 10/08/2018 which is the date of Notice to proceed to EPC Contractor. PP has submitted the project documents on 31/07/2019 which is within 1 year from the start date of the project. The screenshot of the registry is submitted.			
Documentation provided as evidence by Project Participant			
Notice to proceed Screenshot of the registry			
Auditor's assessment comment		Date:	05/01/2021
The screenshot of the Sustain Cert registry is checked and found that the first submission of the PDD is on 31/07/2019 which is within 1 year from the start date of the project. Since the project is a retroactive project, the minimum requirement for submission of Project Documentation is only PDD. Hence, the project complies with the GS4GG prior consideration requirements. The CAR is thus closed			

~~**Preliminary review comments by GS:**~~

~~Comment raised by GS~~	~~DOE assessment~~
~~CAR # 1: Project start date of 10/08/2018 shall be validated by the VVB at the stage of Design Certification. The project becomes ineligible if the project documents were not submitted to Sustain Cert within one year of the start date.~~	~~Please refer CAR #3. The project start date is 10/08/2018- Date of notice to proceed to EPC contractor and the first submission to GS is on 31/07/2019 which is within 1 year from start date. The first submission of project activity to GS is within one year of start date, thus project activity qualifies as retroactive GS VER project activity. Thus prior consideration of carbon revenue for current project activity is checked by the assessment team and found correct.~~
~~CAR # 2: The VVB shall validate if the GS4GG requirements of Stakeholder Consultation was followed by the PD.~~	~~The stakeholder consultation requirement laid down by GS is followed. Please refer Principle 3: Stakeholder Inclusivity of this report for detail assessment.~~

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Appendix 2: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Mr. Sukanta Das	Mr. Sukanta DAS, has done M. SC in (Electronics and Photonics) and M. Tech in (Energy technology) from Tezpur Central University/ Indian Institute of technology Bombay in India. He is a certified lead auditor for ISO 14001 EMS LA and ISO 9001 QMS LA from International registry for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than Nine (9) years of working experience at TUV NoRD/ Re-consult/CRA/APPLUS certifications under various categories of projects stating from Renewable to waste to supercritical projects. He was JI/ CDM Lead Assessor in TUV NoRD and was involved in more than 100 CDM validation and verifications activities in Gold Standard, VCS, CDM projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1, 13 technical areas 1.2/1.1/13.1. Currently he is associated with True Quality Certifications Private Limited and is empanelled with APPLUS certification to carry out GHG audit.
Mr. Denny Xue	Mr. Denny Xue (Master Degree in Environmental Engineering, Bachelor Degree in Thermal Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based on Shanghai. He has 1.5 years of work experiences in CDM project development. Before he joined Applus+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.