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

Project Title:	72 MW Wind power project in the South Sulawesi Province of Indonesia
GS project ID:	GS 7164
Internal ID:	5319
Customer:	PT Energi Bayu Jeneponto
Date:	22/07/2020
Revision:	01

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SUMMARY			
Reference No.	**Date** *(first version)*	**Version No.**	**Date** *(last version)*
A+SH_SYST_TQC_005319	21/07/2020	01	22/07/2020

Client	PT Energi Bayu Jeneponto
Project Title	72 MW Wind power project in the South Sulawesi Province of Indonesia
Project Participants	PT Energi Bayu Jeneponto
Project Location	The project is located in South Sulawesi, Jeneponto Regency, 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: 10/09/2019	Final PDD Version: 02 Date: 26/06/2020

Estimated Annual Emission Reductions: 172,659 tCO_2e per year

Selected Sustainable Development Goals (SDGs):
1 – SDG3 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 local development Activities/year

SDG 7 Affordable and Clean Energy
- 236,520 MWh electricity generated/year

SDG 8 Decent Work and Economic Growth
- 10 Trainings provided to O&M staff/year
- 4.3 Million USD spent on O&M./year
- 75 jobs during operation

SDG 13 Climate Action
- 172,659 tCO_2 emission Reduction./year

Design Certification Summary

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by PT Energi Bayu Jeneponto to perform the GS VER validation of "72 MW Wind power project in the South Sulawesi Province of Indonesia" applying the methodology ACM0002 version 20.0.

The management of PT Energi Bayu Jeneponto is 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 8 findings which include:

- 08 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 Energi Bayu Jeneponto has commissioned Applus+ Certification to perform a validation of "72 MW Wind power project in the South Sulawesi Province of 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.

PT Energi Bayu Jeneponto is setting up wind power project at Jeneponto Regency in the province of South Sulawesi with capacity of 72 MW. The purpose of the project activity is to generate electrical power through operation of Wind power plant. The project activity installation comprises of setting up 20 Wind Turbine Generator (WTGs) of 3.6 MW each.

The project activity is commissioned on 09/10/2018

The purpose of the project activity is to generate electrical power using wind energy through operation of WTGs.

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 PoA as a result of erroneous inclusion of CPAs.

The details of the project are mentioned in the table:

Project Investors' Name	**Capacity in MW**	**Province, Country**
PT Energi Bayu Jeneponto	72	South Sulawesi, Jeneponto Regency, Indonesia

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 and Gold Standard GS4GG requirement, version 1.2.

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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, 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
Hasdin Nasri - Male (Category B as per GS guideline)	Local Stakeholder	Lurah Empoang
Miftahul- Female	Local Stakeholder	Genpi Jeneponto

(Category A as per GS guideline)		

Duration of on-site inspection: 17/09/2019				
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 South Sulawesi , Jeneponto Regency, Indonesia	17/09/2019	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 02 submitted on 26/06/2020 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 GS Registry.

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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 Energi Bayu Jeneponto 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.

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. The total capacity of the power project is 72 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 Wind 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 Wind 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	CO_2	Yes	Main emission source
		CH_4	No	No emission source

	generation.	N_2O	No	No emission source
Project scenario	Greenfield Wind 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.

3.6 Project Boundary

As per Para 20 of applied baseline and monitoring methodology ACM0002, Version-20 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 wind plant installation, pooling and sub-stations.

The proposed project activity evacuates the power to the Indonesia Power Grid. Therefore, all the power plants contributing electricity to the Sulselbar regional Grid 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 injected to the grid via 3.5 km long 150kV transmission line from the wind farm's pooling substation to PLN Jeneponto substation. The transmission line will consist of ten (10) towers with 20 m x 20 m or 15 m x 15 m footprint. The grid connection is subject of separate environmental permitting process (UKL/UPL); the grid connection count as associated facility

3.7 Baseline Identification

Being a grid connected Wind 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 involves setting up of Wind projects to harness the power of wind to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the Indonesian grid, which is fed mainly by fossil fuel fired plants. In the absence of the project activity, the equivalent amount of power would have been drawn from the Indonesian grid. Hence, the baseline for the project activity is the equivalent amount of power from the Indonesian grid. As the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline and pre-project scenario is same.

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 or DNA Indonesia) for the South & West Sulawesi - Sulselbar Grid[2]at the time of PDD submission to DOE for validation, hence same is considered for emission factor calculations.

The combined margin of the Indonesian grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source
$EF_{grid,CM,y}$	0.73 tCO_2/MWh	Combined margin CO_2 emission factor for the project electricity system in year y	Based on the most recent data available now, i.e. data published in 2017 by Directorate General of Electricity (Ministry of Energy and Mineral Resources or DNA Indonesia) for the South & West Sulawesi - Sulselbar Grid.[3]
$EF_{grid,OM,y}$	0.59 tCO_2/MWh	Operating margin CO_2 emission factor for the project electricity system in year y	Based on the most recent data available at the moment, i.e. data from 2017 published By Directorate General of Electricity (Ministry of Energy and Mineral Resources or DNA Indonesia)
$EF_{grid,BM,y}$	1.15 tCO_2/MWh	Build margin CO_2 emission factor for the project electricity system in year y	Based on the most recent data available at the moment, i.e. data from year 2017 published By Directorate General of Electricity (Ministry of Energy and Mineral Resources or DNA Indonesia)

[2] http://gatrik.esdm.go.id/assets/uploads/download_index/files/8beca-emisi-grk-tahun-2017.pdf
[3] http://gatrik.esdm.go.id/assets/uploads/download_index/files/8beca-emisi-grk-tahun-2017.pdf

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 version07.

  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 Wind 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 wind 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.

  Applicability 3: Assessment team checked that the proposed project activity is an installation of a new grid connected wind 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 wind 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 wind 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 wind 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 wind 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 Wind 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.

  DOE also confirms that the project activity complies with the requirement of baseline determination in ACM0002 version 20.0, which is the latest applicable methodology available to the project participant. The project activity applies grid emission factor as per data from 2017 published By Directorate General of Electricity (Ministry of Energy and Mineral Resources or DNA Indonesia) and the emission factor applied is 0.73 tCO_2/MWh. This calculated emission factor is conservative as per tool.

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

TECHNICAL SPECIFICATION	
Nominal power	3600 kW
Number of WTG	20
Installed Capacity	72 MW
Average total height	200 m
Wind class	IIA
Concept	3-bladed; horizontal axis direct drive; pitch regulation with variable speed upwind clockwise rotation
Control System	Built-in computer control system coupled with remote access system (Supervisory Control and Data Acquisition or SCADA in short).
TOWER	
Tubular	135 m
Material	Tubular Steel
Color	White (non-glossy) to light grey

Crane Hardstand	44m x 144 m
OPERATIONAL DATA	
Cut-in wind speed	3-5 m/s
Cut-out wind speed	25 m/s
Nominal power at approximate	11-12 m/s
ROTOR	
Diameter	130 m
Blade length	63.5 m
Swept area	13,300 M^2
Material	Glass reinforced epoxy fibre (GRE)
Speed	6.5 – 12.8 rpm
GENERATOR	
Type	Synchronous, Permanent Magnet Generator
INDICATIVE WEIGHT	
Blade	17 metric tons
Rotor	96 metric tons
Nacelle	103 metric tons
Tower	80 metric tons
FOUNDATION	
Shape	Octagonal
Horizontal dimension	About 20 m diameter
Thickness	Up to 4 m
Material	Up to 650 m^3 of reinforced concrete

Foundation type	Floating foundation
SUB STATION COMPLEX	
Area	approximately 2 ha
Comprises	Distribution substation and switchgear with 33 kV ratings; 45 MVA Power transformers; Control/management facility and service; Parking,; Traffic acces; Landscape area; Internal infrastructure supply; Sewage
	Low voltage power supply 33/0.4 kV internal transformer
TRANSMISSION LINE	
Voltage	150 kV
Length	3.5 km

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:

Turbine	Latitude	Longitude	Village	Sub-district
TO01	05°36’15.542"S	119°46’31.670"E	Bontomatene	Turatea
TO02	05°36’26.181"S	119°46’24.479"E	Bontomatene	Turatea
TO03	05°36’38.271"S	119°46’19.893"E	Bontomatene	Turatea
TO04	05°37’23.507"S	119°45’50.071"E	Parasangan Beru	Turatea
TO05	05°37’34.111"S	119°45’41.550"E	Kayuloe Barat	Turatea
TO06	05°37’43.468"S	119°45’30.230"E	Kayuloe Barat	Turatea
TO07	05°37’52.789"S	119°45’19.753"E	Kayuloe Barat	Turatea
TO08	05°38’20.780"S	119°45’23.360"E	Kayuloe Timur	Turatea
TO09	05°38’31.709"S	119°45’16.722"E	Empoang Utara	Binamu

TO10	05°38′42.961"S	119°45′9.8604"E	Empoang Utara	Binamu
TO11	05°38′56.268"S	119°45′13.397"E	Empoang Utara	Binamu
TO12	05°39′3.9134"S	119°45′3.1389"E	Empoang Utara	Binamu
TO13	05°37′37.076"S	119°46′35.270"E	Kayuloe Timur	Turatea
TO14	05°37′49.064"S	119°46′31.658"E	Kayuloe Timur	Turatea
TO15	05°38′1.7234"S	119°46′30.647"E	Kayuloe Timur	Turatea
TO16	05°38′16.473"S	119°46′27.600"E	Kayuloe Timur	Turatea
TO17	05°38′32.523"S	119°46′24.883"E	Kayuloe Timur	Turatea
TO18	05°38′46.094"S	119°46′23.714"E	Kayuloe Timur	Turatea
TO19	05°38′58.612"S	119°46′24.780"E	Empoang Utara	Binamu
TO20	05°39′11.627"S	119°46′24.193"E	Empoang Utara	Binamu

- **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 (Yes/potentially/ no)	Justification	Mitigation measure (if 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	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	Not Required.

	in the Universal Declaration of Human Rights. b. The Project shall not discriminate with regards to participation and inclusion.		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 111 on Discrimination (Employment	

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

			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	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	Not Required

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

	communities (e.g., potential increased burden on women or 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 projecttman 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 ProjectProject into account gender roproject criteria ensure that it includes minority groups		marginalised or vulnerable communities. Both men and women are employed as per 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 work load however on contrary generated employement opportunity for them. The project has Women cell in case of any Sexual harrasment case is noticed	

	or landless peoples)? e. Does the Project design contribute to an increase in womenandless peoples)?r men tothe abilities of women or men to participate in the decisions/desig ns of the projec 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 womening their full partdevelop and protect natural resources, taking into account different roles and priorities of		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 community on basis of gender or caste or religion and therefore equally serve to all. Assessment team referred the EHS report 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	

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

	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 adverse impacts on gender equalityand/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,		ILO Convention 111 on Discrimination (Employment and Occupation)[7].	

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

	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, and equal pay for equal work, specifically: a. Where appropriate for the implementation of a Project,			

	paid, volunteer work or community contributionswil l 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/pater nity 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 as the case may be, to Project participatnation al 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	Not Required.

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

			the Community. Assessment team checked ESHS manual for detailed assessment. (ESIA Report-Appendix 1) and confirm the same.	
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?	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	Not required.

	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 of the Project and/or is the Project located on land/territory claimed by indigenous peoples?		and clearances from all the relevant authorities for establishing the plant. Moreover, since the Turbines 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 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	No	Indonesia is a party to United	Not

	involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects.		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	required
Economic Impact	a. The project does not employ and is not complicit in any form of child labor. b. The project provides workers with a safe and healthy work environment and is not	NO	Assessment team checked that PP and their subcontractors complying with all relevant national laws regarding child labor. Working agreements with all individual workers are	Not required

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

	complicit in exposing workers to unsafe or unhealthy work environments. c. The project does not involve and is not complicit in any form of forced or compulsory labor.		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. 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	

			Chapter 6 of 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 PLN for 30 years. 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	NO	The project being a renewable energy project decreases greenhouse gas emission over the baseline. The baseline of	Not required.

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

	energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?		the project would be National grid which is predominately connected by 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 Wind 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 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.	Not required
	b. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the	Potentially	During the construction the disturbance in the landscape may lead to soil	Required and Please refer SD monitoring section for

	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?		erosion. The project area is not susceptible to excessive erosion or water body instability.	assessment
Environment, Ecology and Land Use	a. Does the Project involve the use of land and soil for production of crops or other products? 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? c. Could the	Potentially NO NO	The project uses land for installation of WTGs. It involves modification of landscape during construction and operation of project activity. The project is Wind power project and is not susceptible to or leads to increased vulnerability to wind, earthquakes, subsidence, landslides,	Required and Please refer SD monitoring section for assessment Not required

	Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?	NO	erosion, flooding, and drought. Point c is not applicable for the project	Not required Not required
	d. Could the Project potentially result in the release of pollutants to the environment?	Potentially	The project is wind power project and hence there is no question of release of pollutants to the environment	Required and Please refer SD monitoring section for assessment
	Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	NO NO	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	Not required

			management rules and are disposed off accordingly.	
	f. Will the Project involve the application of pesticides and/or fertilisers?	NO	The project is wind power project and project does not involve the use of Fertilizer.	Not required
	g. Will the Project involve the harvesting of forests?			Not required
	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. The project do not involve animal Husbandry	Not required
	i. Will the Project involve animal husbandry?	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	
	j. Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity	Potentially		

	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?		There are no endangered species identified as potentially being present within the Project boundary. However being wind energy project, the rotation of wind turbine may results in strikes/deaths of birds and bat	Required and Please refer SD monitoring section for assessment

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. The energy meters are installed at 150 kV side of Tolo substation. One main meter and one check meters are installed in each line (ie, TRAFO 1 and TRAFO 2). The accuracy of energy meters installed are 0.2. 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. **Relevant SDG Target:** By 2030, increase substantially the share of renewable energy (236,250 MWh per annum) in the global energy mix. **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: • Construction of Toilets at schools • Establishment of water purifier with cooler • Organization of Health camps • Training on agricultural, irrigation and fertilizers techniques by agricultural professionals 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. - 10 Trainings provided to O&M staff/year - 4.3 Million USD spent on O&M./year - 75 jobs during operation **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 the Directorate General of Electricity (Ministry of Energy and Mineral Resources or DNA Indonesia. For the ex-ante calculation, the 2017 data published by Directorate General of Electricity (Ministry of Energy and Mineral Resources or DNA Indonesia has been used. This is in line with "Tool to calculate the emission factor for an electricity system, version 7". 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 (172,659 tCO_2 per annum) 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 on 19/09/2019 at O Café Meeting Area - Jalan Masjid H Syamsudin, Kalumpang Lompoa, Desa Kalumpang Loe, Kecamatan Arungkeke, Kabupaten Jeneponto. Sulawesi Selatan – Indonesia. 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 wind power project operations. The same is thus acceptable to the assessment team. The physical stakeholder feedback round took place on 19/09/2019.

Assessment team also checked that the stakeholder feedback round was open from 06/02/2020 to 05/04/2020 at site. PP had kept the hard copy of the project documents (PDD, Non-technical summary & Stakeholder consultation report) at site office for comments from local stakeholders. However, no comments received from any local stakeholder during the period.

Online stakeholder feedback round was open from 17/04/2020 to 16/06/2020. 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), Wind 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 opinión regarding the project activity. The idea and effort put forward by the PP is comendable and hence the same is aceptable 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	Hasdin Nasri - Male (Category B as per GS guideline)
DOE QUESTION: Did this Wind 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	Miftahul- Female (Category A 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 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 transmission loss, 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 75 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
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
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: • Maintain a uniform size and design of turbines (e.g., type of turbine and tower, as well as height). • Locals will be consulted wherever a WTG location or access road was in vicinity to a settlement. • The WTGs are painted with non-reflect paints and are not glary.

		• 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 WTGs 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
Bird & Bat Deaths	Safeguarding Principle 9.11: Endangered Species	As per ESIA report, the following management measure shall be followed: • During the siting activity, it was ensured that there are no water bodies beside WTGs. • Water pits are not allowed around the WTGs.

		• Maintains a Bird strike register The above measures are acceptable at this stage of validation since maintaining a bird register is acceptable way for monitoring this parameter. Assessment team during this validation stage had a conversation with the villagers and they informed that on day to day basis they inform the project concerned whether there is a bird death due to turbine operation or movement. This is win-win situation for both parties and hence the source of data for the parameter is acceptable to the assessment team. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity. Data / Parameter : Bird & Bat Deaths Unit: Bird Carcass Count Source of data: Bird Strike 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

dated 04/06/2017 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 Wind turbine.

The project start date is 12/12/2017 and the first submission to GS is on 04/12/2018 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:

Project Timelines	**Date**	**Documents checked by the DOE**
Completion of DPR	May 2017	The DPR is checked and found correct by the assessment team.
Board decision for investing in Project and securing carbon credits	04/06/2017	The Board decision notification is checked and found correct by the assessment team.
Placement of the Purchase Orders	12/12/2017	Assessment team checked the EPC contract and found the date to be appropriate.
Commissioning of project	09/12/2018	The COD certificate is checked and found correct by the assessment team.
Notices and Publication about consultation meeting	12/09/2019	The notices for the local stakeholder consultation is checked by the assessment team and found correct.
Stakeholder' consultation meeting	19/09/2019	The minutes of meeting for the local stakeholder consultation is checked by the assessment

		team and found correct.
Online Stakeholder Feedback Round	06/02/2020 – 05/04/2020 & 17/04/2020 to 16/06/2020	The email send to stakeholders for 60 days period is checked and assessment team found no negative comments were obtained.

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.

PDD mentioned that the project would not be economically or financially feasible without the revenue from the sale of carbon revenue. The claim of the project developer has been assessed by the Validation Team through the following steps as per the requirement of "Tool for the demonstration and assessment of additionality", Version 07.0.0:

Step 0: Demonstration whether the proposed project activity is the first-of-its-kind

The start date of the project is 12/12/2017. As on December 2017, there is no large scale wind project started commercial operation in Indonesia. This can be confirmed from "2018 Handbook of Energy & Economic statistics of Indonesia[11]". As per Table 6.4.1 (page 89) of the report, the total wind power capacity installed as on December 2017 is only 1.12 MW. The 1.12 MW also consist of kW scale wind turbine. As on December 2017, there is no MW scale WTG installed in Indonesia. Hence, the project is the first in the applicable geographical area that applies a technology that is different from technologies that are implemented by any other project, which are able to deliver the same output and have started commercial operation in the applicable geographical area before the start date of the proposed project activity.

However, project also faces financial additionality and thus requires carbon finance. To make the additionality case stronger, the financial constraint is thus considered as a tool to prove that project is not business as usual scenario and require carbon credit to sustain. The detail is described below:

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a: Define alternatives to the project activity:

Identify realistic and credible alternative(s) available to the project participants or similar project developers that provide outputs or services comparable with the proposed VCS project activity.

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

The purpose of the project activity is to generate electrical power using Wind energy and feed the electricity generated to the grid. Hence, the following alternatives are considered:

Alternative 1: The proposed project activity without GS benefit;

Alternative 2: Continuation of the current situation, i.e., electricity will continue to be generated by the existing generation mix operating in the grid

Having regard to the fact that the project activity under consideration is a Wind power project validation team is convinced that there are no other realistic and credible alternatives. Both the alternatives are in compliance with all applicable legal and regulatory requirements as;

- the implementation of project activity is a voluntary initiative and is not mandatory or a legal requirement;
- the applicable environmental regulations do not restrict the use of Wind energy; and
- There is no legal requirement on the choice of a particular technology.

However, of the two alternatives identified, alternative (i) cannot be considered realistic as further analysis in the following paragraph reveals that it is not economically feasible option. Hence, alternative (ii) alone could be justified as realistic, credible and plausible alternative to the PP.

Validation team is, therefore, convinced that the project developer has taken into consideration all realistic and credible alternatives (having regard to the governing methodologies) including the project being undertaken as a non-GS activity and continuation of current scenario. The identification of alternatives is in conformity with the guidance given by the tool.

Outcome of Sub-step 1a: All the realistic alternatives for the project activity have been enlisted above.

Sub-step 1b: Consistency with mandatory laws and regulations:

The alternative(s) shall be in compliance with all applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution. (This sub-step does not consider national and local policies that do not have legally-binding status.)

Both the alternatives are in compliance with all applicable legal and regulatory requirements as;

- the implementation of project activity is a voluntary initiative and is not mandatory or a legal requirement;
- the applicable environmental regulations do not restrict the use of solar energy; and
- There is no legal requirement on the choice of a particular technology.

Moreover, Outcome of Sub-step 1b: Hence, both the alternatives enlisted above are found to comply with the mandatory laws and regulations taking into account the enforcement of the legislations in the region or country and EB decisions on national and/or sectoral policies and regulations. However, Alternative 2 has been selected as the appropriate baseline alternative for this project activity.

Step 2: Investment analysis

Determine whether the proposed project activity is economically or financially less attractive than at least one other alternative, identified in step 1, without the revenue from the sale of emission reductions credits. To conduct the investment analysis, use the following sub-steps:

Sub-step 2a: Determine appropriate analysis method and Sub-step 2b (Option III): Apply benchmark analysis

a) Suitability of investment analysis, financial indicator and benchmark:

Project developer had demonstrated that the financial returns of the proposed VCS project activity would be insufficient to justify the required capital investment as per UN guideline i.e. CDM Validation and verification standard for project activities, version 02. In the Initial PD version 01 PP has adopted a conservative approach to identify the benchmark for the project activity. The project is earning revenue from the installation of the project activity. Thus simple cost analysis (Option I) is not appropriate. Also in the absence of the project activity grid electricity would have been the obvious choice for the Project which requires no investment. Hence investment comparison analysis (Option II) is also not appropriate for the project activity. Therefore, benchmark analysis (Option III) is used for the project activity as per project type and decision-making context. Therefore, the Expected return on equity is considered appropriate benchmark. Accordingly, the post-tax Equity IRR has been considered as the relevant financial indicator for the project activity which is acceptable to the assessment team. Moreover, the financial indicator selected by the PP is correct based on the fact that tool do not restrict the PP to either use project IRR or Equity IRR. This is under the prerogative of the PP to select appropriate indicator based on his preferences to know the IRR based on his equity investment or debt investment. The same is this acceptable to the assessment team. Assessment team however checked the Equity IRR calculation and thus found that input assumptions used for the calculation of Equity IRR is applicable at the time of investment decision of the project and thus is in accordance with the relevant guideline of the tool.

Default Value Benchmark

The cost of equity is determined by selecting the values provided in the Appendix, i.e. Default values for cost of equity (expected return on equity) in the 'Methodological tool: Investment analyses

The Required return on equity (benchmark) was computed in the following manner:

Nominal Benchmark[12] = {(1+Real Benchmark)*(1+Inflation rate)}-1

Where:

- Default value for Real Benchmark = 10.73% (as per Appendix of EB97, Annex 8)
- Inflation Rate forecast for by International Monetary Fund (IMF).

Benchmark estimation

Methodology deployed for arriving at a suitable value of Benchmark using Default Value has been described below:

12 As per Pg. 320 of Corporate Finance, Second Edition of Aswath Damodaran

- As the proposed project activity generates power utilizing wind energy, Group 1 as per para 5a of Investment Analysis, v10 has been identified as a suitable category. Though the current applicable version of investment analysis is version 10, this was not available at the time of investment decision. The available version at the time of investment decision was version 7. The conservative default value of Cost of equity as provided in the Table 1 of the respective version has been considered.
- The investment analysis has been carried out in Nominal terms. Accordingly, Default value as given in Para 6, Appendix, Annex 05, EB 92 has been adjusted by adding suitable forecasted inflation rate.
- Since "Bank of Indonesia" (Central Bank of Indonesia), publish only one year inflation forecast and one year inflation target, the 5 year inflation forecast published by the IMF (International Monetary Fund World Economic Outlook) for Indonesia has been used to calculate the benchmark in nominal terms as per para 17 of EB 92, Annex 5.

The benchmark has been computed in the following manner:

Default Value Benchmark:

The cost of equity is determined by selecting the values provided in the Appendix, i.e. Default values for cost of equity (expected return on equity) in the 'Methodological tool: Investment analysis'.

The Required return on equity (benchmark) was computed in the following manner:

Nominal Benchmark[13] = {(1+Real Benchmark)*(1+Inflation rate)}-1

Where,

Default value for Real Benchmark applicable as per the latest investment Analysis Tool (ie, Investment Analysis, v10)	11.06%
Default value for Real Benchmark applicable at the time of investment decision (ie, Investment Analysis, v7)	10.73%
Real Benchmark selected (conservative of above)	10.73%

5 year average Inflation Rate forecast for Indonesia published by IMF.

Benchmark calculation:

The Cost of Equity has been considered using the "Methodological tool: Investment analysis" available at the time of decision making as well as the latest available value. As a conservative approach, the minimum value of benchmark has been considered as calculated using these 2 approaches.

[13] As per Pg. 320 of Corporate Finance, Second Edition of Aswath Damodaran

As per the above table default value of expected return on equity in real terms for Energy Industries (Group 1) in Indonesia = 10.73%[14]

Thus, minimum cost of equity considered for calculation of Benchmark = 10.73%%

Inflation Rate:

The IMF (World Economic Outlook Database) provides 'for the inflation. Bank Indonesia forecasted values for the next ten years have been used to adjust the default value of ROE, which is given in real terms.

The 5 year Inflation forecast of Indonesia published by IMF (World Economic Outlook Database, April 2017)[15] is considered in project activity as the same was available to PP at that time of investment decision date i.e. 04/06/2017. The 5 year average (2018- 2022) inflation is calculated as below:

Year	2018	2019	2020	2021	2022	5 year average
Inflation	4.52%	4.28%	4.06%	3.96%	3.98%	4.16%

Therefore the benchmark is calculated as below,

Return on equity$_{Nominal}$ = (1+ 10.73%)*(1+4.16%) – 1= 15.34%

b) Parameters and assumptions used:

The project activity is a renewable source of electricity generation and supplies the electricity to the INDONESIAN Electricity grid. The key parameters which determine the Equity IRR of the project activity are project cost, PLF and profitability estimates.

In the revised PDD version 02, the project cost is based on the DPR (=Detailed project report) dated May 2017. DPR report has been submitted to validation team. The cost of turbine as considered from the DPR is 161.0 Million USD which is the normal price in the region and is acceptable to the assessment team. The DPR was available during decision making and financial profitability of the project was decided based on this DPR. Validation team checked the DPR of the project activity and found that consideration of the project cost in revised PDD version 02 is correct and it is in line with Additionality guideline as well as in compliance to CDM EB guideline. Hence, the project cost consideration is justified. Moreover, the project cost as mentioned in the website of 'MINISTRY OF ENERGY AND MINERAL RESOURCES" which is considered as actual cost in the region by the assessment team for comparision purpose with

[14] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v7.0.pdf

[15] https://www.imf.org/external/pubs/ft/weo/2017/01/weodata/weorept.aspx?pr.x=79&pr.y=9&sy=2015&ey=2022&scsm=1&ssd=1&sort=country&ds=.&br=1&c=536&s=PCPI%2CPCPIPCH%2CPCPIE%2CPCPIEPCH&grp=0&a=

the DPR. As per the ministry website[16], the actual project cost of the project is 160.7 million USD which approx is in line with the estimation provided in DPR. Thus project cost is considered correct.

In Indonesia, infrastructure projects are generally entitled to a debt equity ratio of 70:30. However, depending on the relationship of the client with the bank, its credit rating and collaterals offered, banks consider higher debt equity ratio also. The debt equity ratio for the project is 70:30. Assessment team checked the DPR (available at the time of investment decision) and found that the ratio of Debt to equity was considered correctly for the present validation condition and IRR estimate. The profitability of the project, which forms the basis for IRR calculation is based on installed capacity, PLF, electricity tariff, O&M cost, depreciation and taxation. The installed capacity is based on the capacity of Wind turbine, which is evidenced by the purchase order subsequently.

c) Assessment of Plant Load Factor (PLF):

PP considered the Plant load factor from a third-party engineering company, for expected electricity generation estimation. They are contracted by the PPs for this project. PP has submitted the copies of the PLFs estimation report to the assessment team.

Validation team assessed the PLF assessment report submitted by 3rd party report from Redaya ENERGI dated September 2016 and the actual electricity generation and found correct. Same 3rd party PLF report has been used in the financials and the emission reduction calculation. PLF estimation by 3rd party engineering company is in line with Para 3 (b) Annex 11, EB 48 and acceptable to the assessment team.

D) Assessment of Electricity Tariff:

The Tariff rate has been considered from DPR which was available at the time decision made for the project activity

Validation team assessed the tariff and found that same value was available during decision making and in conformity with additionality guidance. Furthermore, assessment team has also checked the tariff rate provided by 'MINISTRY OF ENERGY AND MINERAL RESOURCES' website and found the actual tariff is less than the tariff mentioned in the DPR. Thus since IRR is below the benchmark considering the actual tariff value by 3rd part govt agency, the assumed tariff is thus considered correct.

e) Assessment of O& M cost:

The O&M cost and its escalation has been considered from DPR and was available at the time decision made for the project activity According to additionality guideline the cost should be based on the input parameters available at the time of decision making and the PP has submitted DPR supporting this consideration. Therefore, considering the above assessment,

[16] https://www.esdm.go.id/en/media-center/news-archives/tolo-i-jeneponto-pembangkit-listrik-tenaga-angin-terbesar-kedua-progress-capai-65

validation team concluded that the O&M cost considered from respective DPR in the computation of financial indicator is in conformity with additionality guideline.

F) Assessment of Tax computation:

Assessment team noted that the project developer has adopted book depreciation rates based on the project life time which is found to be correct as per the accounting principles. Tax liability has been calculated as per the income tax rules and the rulings given. The tax rates assumed corresponds to the tax rate prevailing at the time of taking decision as per the Law No. 36 of 2008 (Income Tax Law)

Hence, these assumptions are appropriate during decision making context and thus acceptable to the assessment team.

g)Cross checking parameters:

<table>
<tr><th>Name of the parameter</th><th>DOE assessment</th></tr>
<tr><td>Project Cost</td><td>The Project cost has been considered from DPR and was available at the time decision made for the project activity.

IRR value as per the assumptions from the Detailed Project Report is as below:

<table>
<tr><th>Name of the Investor/Owner/SPV</th><th>Project Capacity (MW)</th><th>Project Cost (In Million USD)</th><th>IRR</th><th>Benchmark</th><th>Breaching Value</th><th>DPR Date</th></tr>
<tr><td>PT Energi Bayu Jeneponto</td><td>72 MW</td><td>161.0</td><td>8.41%</td><td>15.34%</td><td>-13.05%</td><td>May 2017</td></tr>
</table>
The project is the 2nd commissioned project in Indonesia and no wind power projects were commissioned at the start date of the project activity. Hence, no reference cost is available.

However, the project cost is mentioned the website of ‘MINISTRY OF ENERGY AND MINERAL RESOURCES” As per the ministry website[17], the actual project cost of the project is 160.7 million USD which is in line with the estimation provided in the DPR. The DOE has also checked impact on the IRR with the project cost mentioned in the Ministry of Energy & Mineral resources and found that the equity IRR with actual project cost is still below the benchmark. .

<table>
<tr><th>Name of the Investor/Owner/SPV</th><th>Project Capacity</th><th>Actual Project</th><th>IRR</th><th>Benchmark</th><th>Source</th></tr>
</table>
</td></tr>
</table>

[17] https://www.esdm.go.id/en/media-center/news-archives/tolo-i-jeneponto-pembangkit-listrik-tenaga-angin-terbesar-kedua-progress-capai-65

		(MW)	**Cost (In Million USD)**			
	PT Energi Bayu Jeneponto	72 MW	160.7	8.50%	15.34%	Ministry of Energy & Mineral Resource

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O&M cost and Escalation in the operational expense =7(%)- Standard practice in Indonesia

The O&M cost and its escalation has been considered from DPR and was available at the time decision made for the project activity.

IRR value as per the assumptions from the Detailed Project Report is as below:

Name of the Investor/Owner/SPVs	**Project Capacity (MW)**	**O&M (In Million USD)**	**IRR**	**Benchmark**	**Breaching Value**	**DPR Date**
PT Energi Bayu Jeneponto	72 MW	4.3	8.41%	15.34%	-47.80%	May 2017

The project is the 2nd commissioned project in Indonesia and no wind power projects were commissioned at the start date of the project activity. Hence, no reference cost is available.

However, as per the unaudited financials of year 2019, the O&M expenses for the 1 year (2019) is 3.46 million USD. The DOE has also checked impact on the IRR with the O&M expenses as per unaudited financials of year 2019 and found that the equity IRR with actual project cost is still below the benchmark.

Name of the Investor/Owner/SPV	**Project Capacity (MW)**	**Actual O&M Cost (In Million USD)**	**IRR**	**Benchmark**	**Source**
PT Energi Bayu Jeneponto	72 MW	3.46	11.71%	15.34%	Company Financials of year 2019

Also based on regional market benchmarks in Indonesia, the escalation in O&M cost varies from 5% to 7%. PP has considered higher side of the escalation for the project (ie,7%) considering it is a new technology in the country. However even with the consideration 5% escalation, the IRR is still well below the benchmark.

Tariff

The Tariff rate has been considered from DPR which was available at the time decision made for the project activity

IRR value as per the assumptions from the DPR is as below:

Name of the Investor/Owner/SPVs	Project Capacity (MW)	Tariff Rate as per DPR (USD/kWh)	IRR	Benchmark	Breaching Value	DPR Date
PT Energi Bayu Jeneponto	72 MW	0.117	8.41%	15.34%	12.37%	May 2017

The DOE has cross checked the 'MINISTRY OF ENERGY AND MINERAL RESOURCES' website and found the actual tariff is less than the tariff mentioned in the DPR. Thus, the project activity is additional with actual Tariff rate.

Name of the Investor/Owner/SPVs	Project Capacity (MW)	Tariff Rate as per PPA (USD/kWh)	IRR	Benchmark	Source
PT Energi Bayu Jeneponto	72 MW	0.1089	4.84%	15.34%	Ministry of Energy & Mineral Resource

Since the Actual Tariff rate is available to DOE and IRR is still within benchmark thus the same is acceptable

PLF

The PLF has been taken from the Detailed Project Report which included PLF estimation by 3rd party engineering company which is in line with Para 3 (b) Annex 11, EB 48 and acceptable to the assessment team.

Validation team assessed the Detailed Project Report and third party PLF assessment report and found that PLF estimation value as per report has been used in the financials and the emission reduction calculation. PLF estimation value has been checked and found that PLF considered for the project activity in within the range of sensitivity analysis and found to be appropriate.

IRR for PLF value as per the DPR = 3rd party report, Annex 11 EB 48

Name of the Investor/Owner/SPVs	Project Capacity (MW)	PLF (%)	IRR	Benchmark	Breaching Value	DPR Date
PT Energi Bayu Jeneponto	72 MW	37.5%	8.41%	15.34%	12.37%	May 2017

Since plant is commissioned and completed one year of generation, DOE crosschecked the actual PLF achieved in the project during the year 2019 is 37.7%. The DOE has cross checked the actual PLF value as per actual generation found that the PLF is within threshold limit. Thus, the project activity is additional with this PLF value.

IRR against PLF value as per Actual Generation are as follows:

Name of the Investor/Owner/SPVs	Project Capacity (MW)	PLF (%)	IRR	Benchmark	Source
PT Energi Bayu Jeneponto	72 MW	37.7%	8.73%	15.34%	Actual Generation

Tax Rates

Income tax rate (%)	25.00%

The above table shows the tax rate considered for individual project Owner and the same is found suitable.

Assessment team noted that the project developer has adopted book depreciation rates based on the project life time which is found to be correct as per the accounting principles. Tax liability has been calculated as per the income tax rules and the rulings given. The tax rates assumed corresponds to the tax rate prevailing at the time of taking decision as per the Law No. 36 of 2008 (Income Tax Law)

Hence, these assumptions are appropriate during decision making context and thus acceptable to the assessment team.

Sensitivity analysis:

The Guidance on Additionality requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation. The project developer has identified Plant Load Factor (PLF), Project cost, Electricity tariff and O&M cost as critical assumptions. These critical parameters constitute more than 20% of either total project costs or total project revenues. The sensitivity analysis reveals that even under more favourable conditions, the IRR without CDM revenue would not cross the benchmark return as given in the following table:

Variation %	**-10%**	**Normal**	**10%**	**Variation required to reach benchmark**
Tariff	1.17%	8.41%	14.08%	12.37%
PLF	1.71%	8.41%	14.08%	12.37%
Project Cost	13.56%	8.41%	4.12%	-13.05%
O&M Cost	10.19%	8.41%	6.23%	-47.80%

The results of sensitivity analysis show that even with a variation of +10% & -10% in project cost, O&M cost, PLF and Tariff Rate Equity IRR is significantly lower than the benchmark. And it is evident from the results given above; the project remains additional even under the most favourable conditions.

Probability to breach the benchmark:
Sensitivity Parameter 1: PLF
PLF considered in financials for is as per Third Party DPR in line with **"Guidelines for the reporting and validation of Plant load factors" stated in EB48 Annex11 option 3(b)**. The PLF value considered is based on Third Party PLF report & DPR and the IRR will breach the benchmark value at a PLF variation of 12.37%. The increase in PLF value to breach the benchmark is unlikely as the PLF considered is based on a detailed study. The actual PLF achieved during the year 2019 (37.7%) is also in line with the estimated PLF. Equity IRR at normative PLF values are less than the benchmark value and given the analysis above its highly unlikely that PLF will increase above breaching value.
Sensitivity Parameter 2: O&M
The sensitivity analysis reveals that O&M will breach the benchmark at negative values and is hypothetical case. Since the O&M cost is subject to escalation (as evidence by the DPR and normal trend in any power project) and also subject to inflationary pressure, any reduction in the O&M costs is highly unlikely. Hence, the reduction in the O&M cost is highly unlikely.

Sensitivity Parameter 3: Project Cost
A variation of -13.05% is required for IRR to breach benchmark which is highly unlikely as the project is already spent over 100% of the project cost; which is lesser than the estimated project cost however is within the sensitivity. The key reason behind the price revision is the contract values form the estimates offered by the in DPR.
Sensitivity Parameter 4: Tariff Rate
The Tariff rate of electricity used for investment analysis is sourced from the offered tariff applicable at the time of investment decision. Furthermore, the project will breach the benchmark value at a tariff variation of 12.37%. Moreover, the actual tariff of the project less than the tariff mentioned in the DPR. Hence, the increase in the tariff is not possible.

Assessment team also confirmed the breaching values for individual parameters (=Individual project owners) and thus confirms that the project is still additional

Name of the Investor/Owner/SPV	Project Capacity (MW)	Project Cost as per DPR	Project Cost as per Ministry of Energy & Mineral Resource website	Variation in Project Cost	Breaching Value
PT Energi Bayu Jeneponto	72 MW	161.0	160.7	-0.19%	-13.05%

Name of the Investor/Owner/SPV	Project Capacity (MW)	Tariff Rate as per DPR	Project Tariff as per Ministry of Energy & Mineral Resource website	Variation in Tariff Rate	Breaching Value
PT Energi Bayu Jeneponto	72 MW	0.117	0.1089	-6.92%	12.37%

Name of the Investor/Owner/SPV	Project Capacity (MW)	PLF as per DPR	Actual PLF as per 1 year JMR (BA I)	Variation in PLF	Breaching Value
PT Energi Bayu Jeneponto	72 MW	37.5%	37.7%	0.53%	12.37%

Common Practice analysis:

The common practice analysis is proved by following points as per the requirement of Methodological tool "Common Practice", version 03.1 EB84, Annex 7[18]:

1. Applicable Geographical Area (Para 9): Indonesia has been considered as the applicable geographical area for this project.
2. Measure (Para 10): The project activity reduces greenhouse gas emissions by generating electricity using renewable energy source-Wind. Therefore, the project activity falls under the following measure:

(b) Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies.

3. Output (Para 11): The project activity produces electricity. Therefore, electricity is considered as output of the project activity.
4. Different Technologies (Para 12): The project activity uses Wind energy for producing electricity and hence as per Para 12(a), the technologies which use energy source/ fuel other than Wind will be considered as the different technologies for the project activity.

The step wise approach to provide common practice analysis as per the guideline is as follows:

Step (1): Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity.

Range	Capacity	Unit
+50%	108	MW
Capacity of the proposed project activity	72	MW
-50%	36	MW

Since the project activity is 72 MW, the output range of +/- 50% has been considered as 108 MW (Higher range for comparison) to 36 MW (Lower range for Comparison) which is assessed to be correct

Step (2): Identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:

(a) The projects are located in the applicable geographical area;

(b) The projects apply the same measure as the proposed project activity;

(c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;

(d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;

[18] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf

(e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;

(f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

Identification of the similar projects (CDM and non-CDM) is carried out as per sub-steps of Step (2) as follows:

Identification of the similar projects (CDM and non-CDM) is carried out as per sub-steps of Step (2) as follows:

a) As the project is located in Indonesia, therefore, the applicable geographical area is Indonesia and projects in the host country Indonesia have been chosen for analysis.

b) The project activity is a green-field wind power project and uses measure (b) "*Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies*". Therefore, all projects applying same measure (b) as the proposed project activity are candidates for similar projects.

c) The energy source used by the project activity is wind. Hence, only wind energy projects have been considered for analysis.

d) The project activity produces electricity; therefore, all power plants that produce electricity are candidates for similar projects.

e) The capacity range of the projects is within the applicable capacity range from 100 MW to 300 MW.

f) The start date of the project activity is 12/12/2017. As Kyoto Protocol was ratified by Indonesia on 03/12/2004[19], therefore projects which had started commercial operation from 03/12/2004 to project's start date, have been identified Numbers of Similar projects identified, which fulfil above-mentioned conditioned are

However, the first wind project in Indonesia itself was commissioned on July 2018[20]. No wind project was operational at the time of start date of the project activity. Hence,

$N_{wind} = 0$

Step (3): within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number N_{all}.

CDM project activities, which have got registered or are under validation, have been excluded in this step. The list of the power plants identified is provided to the DOE. After excluding the registered and under validation projects the total number of projects,

[19] http://unfccc.int/tools_xml/country_ID.html

[20] http://iesr.or.id/wp-content/uploads/2018/12/Indonesia-Clean-Energy-Outlook-2019-new.pdf

N_{all} = 0. Assessment team checked the UN web site and excluded the project which are CDM registered or under Validation. Since no wind project was operational in Indonesia at the time of start date of the project, the value is therefore considered correct.

Step (4): within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_{diff}.

The different technologies are defined based on the scale of the project activity. Since the project is a large scale wind project, the wind project other than large scale wind project (ie, small scale) is defined as "different technology" projects. However, as mentioned above, there is no wind project was commissioned before the start date of the project. Hence,

N_{diff} = 0

Step (5): calculate factor $F=1-N_{diff}/N_{all}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.

Calculate $F = 1-N_{diff}/N_{all} = 1-(0/0) = 1$

$N_{all} - N_{diff} = 0 - 0 = 0$

Outcome of Step 5:

As,

i. F = 1; is greater than 0.2, and

ii. $N_{all}-N_{diff}$ = 0; is less than 3, thus:

The proposed project activity is not a "common practice" within a sector in the applicable geographical area.

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, 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)

$EG_{facility, y}$ is determined based on the DPR Energy Assessment report. As per the report, the expected PLF of the project is 37.5%. Based on the PLF, the net generation of the project is estimated to be 236,520 MWh.

BE_y= 172,659 tCO_{2e}

Project Emission

As per the ACM0002 ver 20, 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 wind turbines. Hence, as per ACM0002, Version 20.0, there is no project emission for windmill projects. Therefore, project emissions are zero.

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

Hence,

ERy=BEy= 172,659 tCO_2 per annum

SDG 13 Climate Actions- Estimate

Year	Baseline estimate	Project estimate	Net benefit
Year 1	172,659	0	172,659
Year 2	172,659	0	172,659
Year 3	172,659	0	172,659
Year 4	172,659	0	172,659
Year 5	172,659	0	172,659
Total	863,259	0	863,259
Total number of crediting years	5		
Annual average over the crediting period	172,659	0	172,659

SDG 7: Affordable and Clean Energy- Estimate

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0 MWh	236,520 MWh	236,520 MWh
Year 2	0 MWh	236,520 MWh	236,520 MWh
Year 3	0 MWh	236,520 MWh	236,520 MWh
Year 4	0 MWh	236,520 MWh	236,520 MWh
Year 5	0 MWh	236,520 MWh	236,520 MWh
Total	0 MWh	236,520 MWh	236,520 MWh
Total number of crediting years= 5 years			

Annual average over the crediting period	0 MWh	236,520 MWh	236,520 MWh

SDG 8: Decent Work and Economic Growth- Estimate

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0 Training, 0 Jobs	10 Trainings provided to O&M staff/year And 75 jobs during operation	10 Trainings provided to O&M staff/year And 75 jobs during operation
Year 2	0 Training, 0 Jobs	10 Trainings provided to O&M staff/year And 75 jobs during operation	10 Trainings provided to O&M staff/year And 75 jobs during operation
Year 3	0 Training, 0 Jobs	10 Trainings provided to O&M staff/year And 75 jobs during operation	10 Trainings provided to O&M staff/year And 75 jobs during operation
Year 4	0 Training, 0 Jobs	10 Trainings provided to O&M staff/year And 75 jobs during operation	10 Trainings provided to O&M staff/year And 75 jobs during operation

Year 5	0 Training, 0 Jobs	10 Trainings provided to O&M staff/year And 75 jobs during operation	10 Trainings provided to O&M staff/year And 75 jobs during operation
Total	0 Training, 0 Jobs	10 Trainings provided to O&M staff/year And 75 jobs during operation	
Total number of crediting years= 5 years			
Annual average over the crediting period	0 Training, 0 Jobs	10 Trainings provided to O&M staff/year And 75 jobs during operation	10 Trainings provided to O&M staff/year and75 jobs during operation

SDG 3: Good health and well-being- Estimate

Year	Baseline estimate	Project estimate	Net benefit
Year 1	No activity before project implementation	3 local Community development Activities /year	3 local Community development Activities /year

Year 2	No activity before project implementation	3 local Community development Activities /year	3 local Community development Activities /year
Year 3	No activity before project implementation	3 local Community development Activities /year	3 local Community development Activities /year
Year 4	No activity before project implementation	3 local Community development Activities /year	3 local Community development Activities /year
Year 5	No activity before project implementation	3 local Community development Activities /year	3 local Community development Activities /year
Total	No activity before project implementation	3 local Community development Activities /year	3 local Community development Activities /year
Total number of crediting years= 5 years			
Annual average over the crediting period	No activity before project implementation	3 local Community development Activities /year	3 local Community development Activities /year

4. REFERENCE

S. No.	Document/Evidence/Reference/Web-link, Version, Date
1.	Initial GS4GG PDD, version 01 dated 10/09/2019 Final GS4GG PDD, version 02 dated 26/06/2020
2.	Minutes of Meeting for Local Stakeholders' Consultation dated 19/09/2019
3.	Emission Reduction Sheet for the project activity version 01 dated 10/09/2019 Revised Emission reduction sheet version 02 dated 26/06/2020 IRR sheet for financial analysis dated 26/06/2020
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 dated 11/11/2019 Declaration of not participating in any other GHG mechanism dated 26/06/2020
12.	Universal Declaration of Human Rights[21] and also ratified ILO Convention 111 on Discrimination (Employment and Occupation)[22].
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[23]
14	Indonesia is a party to United Nation Convention against Corruption since 18 Dec 2003[24]:
15	Ministry of Environment and Forest http://moef.nic.in/division/environment-protection

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

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

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

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

16	Emails sent to NGO, Stakeholders, villagers for stakeholder feedback round (= 60 days' time period for comments)dated 06/02/2020 – 05/04/2020 & 17/04/2020 to 16/06/2020
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 and securing carbon credits dated 04/06/2017
20	Placement of the Purchase Orders (= start date of the project) dated 12/12/2017
21	DPR for the project activity dated May 2017
22	Commissioning certificate of project dated 09/12/2018
23	Notices and Publication about consultation meeting for physical Stakeholder meeting dated 12/09/2019

5. FINAL PROJECT DESIGN CERTIFICATION STATEMENT

Applus+Certification have performed a validation of the "72 MW Wind power project in the South Sulawesi Province of Indonesia". The validation was performed on the basis of UNFCCC criteria CDM Validation and Verification Standard for the project activities version 02, 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 172,659 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, 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: 22/07/2020

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	
Signature: 	

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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:	04/02/2020
1. The commissioning certificate and EPC contract have been submitted in support of the legal rights. 2. The technical specification of the WTG is submitted to assessment team 3. The ODA declaration letter from the project developer has been submitted now.			
Documentation provided as evidence by Project Participant			
1. Commissioning certificate 2. EPC Contract 3. Technical Specification of WTG 4. ODA Declaration			
Auditor's assessment comment		Date:	21/07/2020
The supporting document is like Commissioning certificate, EPC Contract, Technical Specification of WTG is now submitted to the assessment team. CAR is closed. ODA declaration dated 11/11/2019 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:	04/02/2020
The HR Policy & SR 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 Policy (ESIA Report - Appendix 6) CSR Manual			
Auditor's assessment comment		Date:	21/07/2020
The supporting documents like HR Policy/CSR reports are now submitted to the assessment team. CAR is thus closed.			

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Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Mr. Sukanta Das	Ref. to checklist in GS4GG PDD:	B.1, B.2
Description of the audit finding		Date:	24/09/2019
The latest methodology as in when PD is submitted to DOE for validation is ACM 0002 version 19. Applicability creteria is therefore not correct. Corrective action is sought for the same.			
Project Participant's response		Date:	04/02/2020
PP now changed the methodology to ACM0002, version 20 which is the latest methodology available in the UNFCCC website. The applicability criteria also modified as per the ACM0002, version 20.			
Documentation provided as evidence by Project Participant			
Revised PDD			
Auditor's assessment comment		Date:	21/07/2020
Latest version of the methodology is now used for the project activity. All the applicability creteria of the methodology is now fulfilled by the project activity. CAR is thus closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	04
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 supportings for investment decision/ Board decision. 2. The chronology as provided in the PD needs to be backed by supporting.			

3. The input parameters are not provided to the DOE for assessment. IRR sheet is not submitted. Hence, the IRR is reserved. 4. The prior consideration documents is missing 5. Common practice analysis is not detailed out with supporting documents. Corrective action is sought.		
Project Participant's response	Date:	04/02/2020
1. The board resolution on investment decision is provided now. 2. Supporting documents for the chronology is provided to DOE. 3. Now the additionality of the project has been changed based on IRR. 4. The project is a GS project. No prior consideration is applicable. As per the GS requirement, the first PDD is submitted within 1 year from the starting date of the project. Confirmation email on submission of PDD within 1 year from the start date is submitted.		
Documentation provided as evidence by Project Participant		
1. Board resolution copy 2. Supporting documents on chronology of events 3. Email confirmation on submission of PDD 4. Revised PDD		
Auditor's assessment comment	Date:	21/07/2020
All the input assumptions supporting is now submitted to the assessment team. The IRR estimate is found correct by the assessment team. The project is a GS project. No prior consideration is applicable. As per the GS requirement, the first PDD is submitted within 1 year from the starting date of the project and hence prior consideration requirement for GS VER project is meet. CAR is thus closed.		

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Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	05
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:	04/02/2020

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 values of Number of training provided, employment generated & employment records are tentative. The actual records will be submitted during verification.

4. The basis for the baseline estimate and project emission is now included in the section B.6.5 of the PDD.

5. The emission reduction sheet is submitted

6. The DPR prepared by third party engineering company is provided now as support of PLF.		
Documentation provided as evidence by Project Participant		
1. Revised PDD 2.CSR manual 3. HR Policy 4. Emission Reduction Sheet		
Auditor's assessment comment	Date:	21/07/2020
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. The DPR prepared by third party engineering company is provided now as support of PLF. The same is in line with Annex 11 EB 48 Para 3 (b). CAR is thus closed.		

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	06
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:	04/02/2020
The monitoring parameters are modified to be consistent with the SDG selected.			
Documentation provided as evidence by Project Participant			
Revised PDD			
Auditor's assessment comment		Date:	21/07/2020
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.			

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Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	07
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:	04/02/2020
• The ESHS manual provides the safety requirements followed by the project activity. The ESHS manual is 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		
1. ESHS Manual (ESIA Report- Appendix 1) 2. Clearances & NOCs 3. ESIA Report 4. CSR Manual		
Auditor's assessment comment	Date:	21/07/2020
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:	08
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:	04/02/2020

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 are 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 on-going.

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

Documentation provided as evidence by Project Participant

Stakeholder consultation report

Revised PDD

Auditor's assessment comment	Date:	21/07/2020

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.

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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.

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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.