

GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG) REPORT

Final Validation Report

300 MW Wind Power Project in Gujarat by Alfamar Power



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Summary

GS ID of Project	Report ID	Version and Date of FVR
GS 7745	2122-GS-VAL	03.1 : 18/04/2022
Title of Project	300 MW Wind Power Project in Gujarat by Alfamar Power	
Time of First Submission Date	24/01/2020	
Version number of the PDD	07.1	
Date of the PDD	18/04/2022	
Project Developer	Alfamar Energy Private Limited.	
Project Representative	Kosher Climate India Private Limited	
Host Country (ies)	India	
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A	
Scale of the project activity	☐ Micro Scale ☐ Small Scale ☒ Large Scale	
Methodology (ies) applied and version number	ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources, Version 20	
Sectoral Scope	GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1	
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A	
Project Cycle:	☐ Regular ☒ Retroactive	
Sustainable Development Goals: a) SDG 7 b) SDG 8 c) SDG 13	- MWh of renewable energy generated - 1,046,865 - No. of Jobs created – 100, Training – 02 - 978,399 VERs / tCO ₂ e (estimated)	
Name, position, and signature of the approver of the validation report	S. Jagajothi  Director	

Validation Opinion:

4K Earth Science Private Limited (hereafter referred to as 4KES) has been contracted by Kosher Climate India Private Limited to perform the GS validation of “300 MW Wind Power Project in Gujarat by Alfamar Power” applying the ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources, Version 20.

The management of Alfamar Energy Private Limited is responsible for the preparation of the GHG emissions data and the reporting of GHG emission reductions.

A desk review and a remote site visit have been conducted to verify the data submitted in the GS4GG PDD. 4KES 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. The Gold Standard for Global Goals “Principles and Requirements” Version 1.2 and related Annex.
- e. All information and references were 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. remote site visit, telephone, or e-mail interviews), and also the review of the applicable approved methodology and underlying formulae and calculations.

The findings are presented in validation checklist of this validation report, the no. of findings are presented below:

- 04 Corrective Action Requests (CARs);
- 11 Clarification Requests (CLs/CRs);
- 01 Forward Action Request (FAR).

The PP has responded to these findings by modifying the Gold Standard PDD and providing adequate additional explanations and evidences. 4KES confirms that all the findings have been “closed out” before submitting the request for registration to the GS board.

As a summary of the validation, the review of the Gold Standard GS4GG PDD and the subsequent follow-up interviews have provided 4KES 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 requirements set forth by Gold Standard. Therefore, 4KES recommends the project for registration as GS VERs project.

ABBREVIATIONS	
ACM	Approved Consolidated Methodology
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CH₄	Methane
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CO₂	Carbon di Oxide
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
ISTS	Interstate Transmission System
KP	Kyoto Protocol
LoA	Letter of Award
MP	Monitoring Plan
MW	Megawatt
NCDMA	National CDM Authority
N₂O	Nitrous Oxide
OM	Operational Margin
SECI	Solar Energy Corporation of India Limited
SDG	Sustainable Development Goal
TAC	Gold Standard Technical Advisory Committee
PGCIL	Power Grid Corporation of India Ltd
PLF	Plant Load Factor
PPA	Power Purchase Agreement
PP	Project Participant
PS	Project Standard
UNFCCC	United Nations Framework Convention on Climate Change
VER	Verified Emission Reduction
VVB	Validation and Verification Body
VVS	Validation and Verification Standard
WTG	Wind Turbine Generator
4KES	4K Earth Science Private Limited

1 Introduction

Kosher Climate India Private Limited', the Project Representative for this project activity has commissioned 4KES to perform a validation of "300 MW Wind Power Project in Gujarat by Alfano Power" (hereafter referred as the project activity) situated in Kutch District of Gujarat State, India. 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 along with the requirements of Gold Standard GS4GG guideline /1/.

The project activity was allotted by Solar Energy Corporation of India (SECI) under interstate transmission system (ISTS) connected wind energy projects scheme, the Letter of Award (LoA) /2/ dt., 23/02/2018 for the 300 MW was awarded to 'Alfano Power'(parent company), whose registered office is located in Riyadh, Kingdom of Saudi Arabia (KSA). For the ease of construction, procurement, operation, and maintenance, the mother company 'Alfano Power' registered the following subsidiary companies (legal entities) with the Registrar of Companies (ROC) Delhi, India:

- i) Alfano Power Services Private Limited,
- ii) Alfano Power Private Limited and,
- iii) Alfano Energy Private Limited (Project Developer).

'Alfano Energy Private Limited' the Project Developer has setup up wind power project with a total installed capacity of 301.4 MW in Kutch District, Gujarat. The project activity generates electricity and sells it to a designated consumer. The project activity installation comprises 114 Wind Turbine Generator (WTGs) of 2.20 MW each and 22 Nos. of WTGs of 2.30 MW each, the total consolidated capacity is 301.40 MW, and the total no. of WTGs is 136.

The commissioning of WTGs was done in a phased manner, the first set of installations 40 WTGs of 2.20 MW each were commissioned on 28/07/2020 and the last set of 6 WTGs (4 nos. x 2.2 MW and 2 nos. x 2.3 MW) were commissioned on 31/03/2021. The complete location details, coordinates and No. of WTGs are provided separately in Appendix 3 of this validation report. The project activity transmits power through a dedicated 33 kV and 220 kV transmission lines which is connected to the 220kV side of the 765/400/220 kV pooling station owned by Power Grid Corporation of India Ltd (PGCIL) located at Bhuj, Kutch District, Gujarat.

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 4KES 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 /3/. The validation was based on the requirements in the Validation and Verification Standard for project activities version 03.0 /4/ and Gold Standard GS4GG Principles & requirement, Version 1.2.

The purpose of this validation to assess the project activity and its compliance to the applicable Guidelines, Methodologies, Sustainable Development Goals and Tools. The clarifications & corrective actions were raised to ensure the compliance of PDD and ER Sheet

2 Methodology

The project assessment is based on the Principles & Requirements Gold Standard requirement for GS4GG and CDM project standard for project activities, version 03.0. The assessment is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Prior to the assessment, 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 4KES, the members of the Validation Team perform:

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.

Following is replica of format used to present the findings to the PP (Appendix 1 of the FVR)

The elaborate list of CAR/CL/FAR is included as Appendix 1 of this report

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

2.1 Appointment of the Validation Team

The validation members of the team are selected based on

- Technical scope(s),
- Sectoral scope(s),
- Relevant host country experience for evaluating the project activity are appointed, and
- No Conflict of Interest with Project Proponent / Project Activity.

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

Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Validation findings
1.	Team Leader, Technical expert (TA 1.2) & Local Expert	IR	Ma Paa	Puratchikkana I	Central Office	✓		✓	✓

Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Chetan	Sharma	Central office
2	Approver	IR	S	Jagajothi	Central Office

2.2 Document Review

The Gold Standard PDD version 5.0 /5/ 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

As a result of the COVID-19 pandemic, taking into account the rules of relevant national and local authorities (local to the DOE offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the DOE and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return from specific countries), A DOE may postpone site visits for onsite inspections required by the “CDM validation and verification standard for project activities (version 03.0) (VVS-PA)”.

If the site visits cannot be postponed, a proper justification should be provided by the DOE why the site visits cannot be postponed, including the demonstration of a significant impact of delaying the site visits on the DOE, or project participants or coordinating/ managing entity (e.g. commitment/ timeline as per the validation contract).

For this project activity, Site visit is expected to happen in near future. However as per the CDM EB, the DOE may use other standard auditing techniques for validation as referred to in sections 7.1.3.1 of the VVS for PA Version 03.0. Validation team conducted remote audit with the Client on 20/08/2021. Validation team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of verification. Along with desk review, audit team has conducted remote audit interview (Google meet interview) as follows:

- A complete desk review of the MR, as well as all applicable country legal requirement and supportive evidences have been checked by the verification team.
- Validation team has performed Google meet interview with PP representative in order to check implementation, project boundary, current situation, evaluation of data management, QA/QC system, monitoring and metering equipment, monitoring procedures, calibration etc.
- Cross checks between information provided by interviewed personnel (i.e. by checking sources) to ensure that no relevant information has been omitted.
- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in MR and supporting documents.

This is also in line with Gold Standard rule update COVID 19: INTERIM MEASURES publication date 17/05/2021¹

Interviewed Personnel	Functions	Organization
Mr. Honey Tiwari	Head Business Development	Alfanar Energy
Mr. Sachin Jindal	Project Control Manager	Alfanar Energy
Mr. Nagaraju Bellapu	Consultant	Kosher Climate
Mr. Ganesh Chaudhari	Local Stakeholders	-
Mr. Vikram Singh	Local Stakeholders	-

The summary of interviews with local stakeholders are given below:

Name: Mr. Ganesh Chaudhari
Question: Is there any impact on agriculture due to the project?
Answer: No, there is no impact on agriculture as all the wind turbines are installed in dry & degraded land, not on the productive farm land.
Question: Did the land owners receive adequate compensation?
Answer: Yes, all land owners received adequate compensation as per the agreement
Question: Is there any issue of noise or shadow flickering due to the operation of wind turbine?
Answer: No, all the wind turbines are located far away from the settlements. So, there no such issues

Name: Mr. Vikram Singh
Question: Is there employment provided to local people?
Answer: Yes, local people got jobs due to the project.
Question: Is there any issue of soil erosion or impact on water bodies due to the project?
Answer: The project is located in dry land. So, there is no issue of soil erosion or water body pollution.
Question: Do you have any other issue with the project?
Answer: No

Duration of on-site inspection: NA				
No.	Activity performed on-site	Site location	Date	Team member
	NA			

¹ <https://globalgoals.goldstandard.org/ru-2020-covid-19-interim-measures-update/>

2.4 Resolution of Clarification and Corrective Action request

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 4KES positive conclusion on the PDD. The Corrective Action Requests and Clarification Requests raised by 4KES were resolved during communications between the Client and 4KES to guarantee the transparency of the validation process, the concerns raised and responses provided are summarized in Appendix 1 below.

The Gold Standard GS4GG PDD version 06 submitted on 12/02/2022 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

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 Alfamar Energy Private Limited and is located in the host party India. The host country involved is a party to the Kyoto Protocol and meets the 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.4 applying a large-scale methodology ACM0002 version 20. The total capacity of the power project is 301.40 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. Validation 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 CO₂ emission by replacing equivalent amount of electricity from the Indian Grid. The project type is identified as renewable energy project in section A.4 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		GHG	Included?	Justification/Explanation
Baseline	Grid connected electricity generation.	CO ₂	Yes	Major source of emissions
		CH ₄	No	Minor source of emission
		N ₂ O	No	Minor source of emission
Project activity	Greenfield Wind Power Project Activity.	CO ₂	Yes	No CO ₂ emissions are emitted from the project
		CH ₄	No	Project activity does not emit CH ₄
		N ₂ O	No	Project activity does not emit N ₂ O

3.5 Project timeframe

The project activity allotment was obtained on 23/02/2018 from SECI, subsequently the PP placed supply contract for 92 WTGs with Siemens Gamesa Renewable Power Private Limited (SGRPPL) on 28/06/2019 /6/ which is the project start date. The supply contract was made available to the Validation Team, the same checked and affirmed as the start date of project, thereby meeting criteria specified in paragraph 4.1.39 of GSGG, Principle Requirements, Version 1.2.

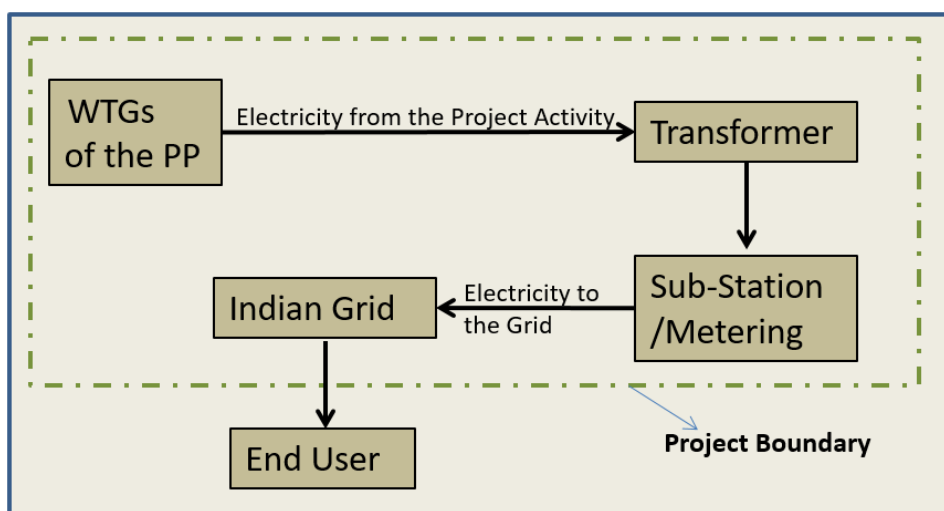
The documentation submission to GS for preliminary review was submitted on 24/01/2020 which is within the renewable energy deadline of 24/01/2020 and within one year from the project start date. The Project Activity meets the requirements defined in paragraph 4.1.42, 4.1.49. b of GSGG Principle Requirements, Version 1.2 and Paragraph 2.1.3 of Renewable Energy Activity Requirements, Version 1.4.

The validation team has assessed and affirmed the eligibility of this project activity based on the guidance & requirements of GSGG Principle Requirements, Version 1.2 & Renewable Energy Activity Requirements, Version 1.4.

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 station and sub-stations.

The proposed project activity evacuates the power to the Indian Grid. Therefore, all the power plants contributing electricity to the Indian Grid have been considered in the project boundary for the purpose of baseline estimation. The project activity targets reduction of CO₂e as main GHG greenhouse gas in the baseline, there are no GHG emission associated with project activity



Validation Team based on the documentary evidence checked that generated electricity will be injected through a dedicated transmission lines which is connected to the 220kV side of the 765/400/220 kV pooling station owned by Power Grid Corporation of India Ltd (PGCIL) located at Bhuj, Kutch District, Gujarat

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 power project 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 drawn from the Indian Grid which major sources of power is predominantly fossil fired power plants². The profile of Indian grid is given below:

Sector	Thermal					Nuclear	Hydro	RES	Total
	Coal	Lignite	Gas	Diesel	Total				
State	65571.50	1290.00	7118.71	236.01	74216.21	0.00	26958.50	2357.03	103531.74
Central	58990.00	3490.00	7237.91	0.00	69717.91	6780.00	15346.72	1632.30	93476.93
Private	74173.00	1830.00	10598.74	273.70	86875.45	0.00	3394.00	82769.86	173039.30
All India	198734.50	6610.00	24955.36	509.71	230809.57	6780.00	45699.22	86759.19	370047.97

This is verified from the CEA database, v16. From the verification the above table, it is confirmed that the about 62% of the installed capacity is fossil fuel based Thermal energy projects. Hence, the baseline for the project activity is the equivalent amount of power from the Indian 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

² https://cea.nic.in/wp-content/uploads/baseline/2021/06/2019_20_CO2_database.zip

this combined margin must be based on data from an official source (where available) and made publicly available.

The validation team raised a clarification request (CL09) to confirm the applicability of database used for deriving data and calculations, since the earlier version of PDD had used Version 15 of database. The validation team based on the data validation in the ER sheet is able to conclude that data derived from latest version of CO₂ BASELINE DATABASE³, published by Central Electricity Authority (CEA) Version 16 for computing Combined Margin (CM) is conservative when compared to the earlier database (Version 15). The data sourced from the previous database (Ver 15) would have yielded a higher CM value and resulted in higher Emission Reductions. The approach adopted by PP is agreeable to the Validation Team and it is confirmed that CEA CO₂ Baseline database version 16 was the latest available at the time of PDD submission to DOE for validation, hence same is considered for emission factor calculations.

The combined margin of the Indian Grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source
EF _{grid,CM,y}	0.9346 tCO ₂ /MWh	Combined margin CO ₂ emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from CO ₂ Baseline Database, Version 16.0, Dt., 19/03/2021, published by Central Electricity Authority (CEA), Government of India
EF _{grid,OM,y}	0.9568 tCO ₂ /MWh	Operating margin CO ₂ emission factor for the project electricity system in year y	Calculated as the last 3-year (2016- 17, 2017-18 & 2018-19) generation-weighted average, sourced from CO ₂ Baseline Database, Version 16.0, Dt., 19/03/2021 published by Central Electricity Authority (CEA), GoI
EF _{grid,BM,y}	0.8682 tCO ₂ /MWh	Build margin CO ₂ emission factor for the project electricity system in year y	CO ₂ Baseline Database, Version 16.0, Dt., 19/03/2021 published by Central Electricity Authority (CEA), Government of India.

3.8 Eligibility Principles Assessment

Principle 1. Contribution to Climate Security & Sustainable Development

The Eligibility requirement as per the approved Gold Standard Activity Requirements are assessed below

Project Type: As discussed in the below table, the project type is eligible.

Project Location: The project is located in India. As there is no restriction on the location of the project, it is appropriate.

Project scale: The project activity is 40.8 MW Wind Energy project and thus qualifies under large scale projects.

Eligibility Criteria	Justification
2.1.2a. Projects shall generate and deliver energy services (e.g., mechanical work/electricity/heat) from non-fossil fuel and renewable energy sources.	This is a generate renewable and delivery electricity from renewable energy sources (ie, wind). Hence the criterion is satisfied.
2.1.2 b Projects shall comprise of renewable energy generation units, such as solar photovoltaic, tidal/wave, wind, hydro,	This is a Wind energy based renewable energy project, supplying electricity to the National Grid. Hence the criterion is satisfied

³ https://cea.nic.in/wp-content/uploads/baseline/2020/07/database_15.zip

geothermal, waste to energy and renewable biomass, that are: • Supplying energy to a national or a regional grid; OR • Supplying energy to an identified consumer facility via national/regional grid through a contractual agreement such as wheeling	
2.1.2 c Any Project supplying electricity to a mini-grid ¹ shall refer to Community Services Activity Requirements.	This is a wind energy based renewable energy project, supplying electricity to the National Grid. Hence this condition is not Applicable
2.1.2 d. Projects generating on-site energy for captive consumption at an industrial facility shall refer to the requirements in this document.	This is a wind energy based renewable energy project, supplying electricity to the National Grid. Hence this condition is not Applicable
2.1.3 New Gold Standard Verified Emission Reductions (GS VER) or Gold Standard labels for Certified Emission Reductions (GS CER), Renewable Energy projects connected to national or a regional electricity grid ² must be located in either a. Least Developed Country (LDC), Small Island Developing State (SIDS) or a Land Locked Developing Country (LLDC) ³ or b. Low Income and Low Middle-income country where the penetration level of the proposed Renewable Energy Technology type is less than 5% ⁴ of the total grid installed capacity, at the time of the first submission to preliminary review	As the project first submission is on or before 24 th January 2020, this condition is not applicable.
2.1.5 The eligibility requirement outlined in paragraph 2.1.3 [above] is effective from 24 Jan 2020. This requirement is applicable in case of projects and PoAs as follows; a. Projects submitted for preliminary review after 24 Jan 2020 shall demonstrate compliance with the requirements of paragraph 2.1.3	As the project first submission is on or before 24 th January 2020, this condition is not applicable.

The eligibility of project Type are assessed as below:

GS eligibility	Justification
4.1.3 A Project type is automatically eligible for Gold Standard Certification if there are Gold Standard published Activity Requirements and/or Gold Standard	The project is a wind power generation activity which is automatically eligible under the project type category (b) of Renewable energy activity requirement ⁴ :

⁴ <https://globalgoals.goldstandard.org/202-ar-renewable-energy-activity-requirements/>

Approved Methodologies associated with it or as referenced in Gold Standard Product Requirements. These are published to the Gold Standard website and shall be followed where provided for a given Project type.	<i>“b. Project shall comprise of renewable energy generation units, such as photovoltaic, tidal/wave, wind, hydro, geothermal, waste to energy and renewable biomass:</i> <i>• Supplying energy to a national or a regional grid; or</i> <i>• Supplying energy to an identified consumer facility via national/regional grid through a contractual agreement such as wheeling”</i> The CDM approved methodology ACM0002, Version 20, is applied to the project activity. Hence, the project fulfils the eligibility criteria.
4.1.4 For Project types that are not automatically eligible a Project Developer may submit to Gold Standard for approval. This shall be done at a minimum, as part of the Preliminary Review, though it is recommended to engage with Gold Standard earlier to establish the criteria and requirements for approval.	The project type is approved and published on the GS website. Hence, the project fulfils the eligibility criteria.
4.1.5 Project types applying for Gold Standard approval are referred to the Gold Standard Vision and Mission. The Project Developer shall demonstrate how the Project would contribute to these and how the Gold Standard for the Global Goals Requirements would be met in their application for approval.	The project avoids CO₂ emissions that would have occurred in the absence of the project at the grid connected fossil fuel power plants. Hence the project avoids the GHG emission that is responsible for climate change. The monitoring process required to achieve the Global Goals, are also explained in the project document. Therefore, the project activity is in line with the GS vision of “Climate security and sustainable development for all” and GS mission, “To catalyse more ambitious climate action to achieve the Global Goals through robust standards and verified impacts”. Hence, the project fulfil the criteria.
4.1.6 In reviewing a new Project type for approval, Gold Standard may establish new Requirements to be met by the Project in order to achieve Gold Standard Design Certification and ongoing Project Certification. Where required, Gold Standard shall engage expert peer reviewers to establish these Requirements, at the Project Developer's expense.	<i>Non-Applicable</i>
4.1.7 Gold Standard does not support Project types associated with geo-engineering or energy generated from fossil fuel or nuclear, fossil fuel switch, or any project that supports, enhances or prolongs such energy generation. In certain cases, concerning energy efficiency involving fossil fuels (for example, LPG stoves), an exception is made. This is captured in the relevant Activity Requirements, Gold Standard Approved Methodologies and/or Product Requirements.	<i>Non-Applicable</i>

The baseline scenario and the emission reduction calculations have been performed as per the requirement of the methodology. The emission factor of grid, in the GS4GG PDD, has been calculated in-line with the provisions of applied methodology ACM0002 version 20.0. The latest applicable version of “Tool to calculate the emission factor for an electricity system” is version 07 /7/. The applicability criteria are now detailed out in the report as below:

Applicability 1: Validation 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: Validation 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: Validation 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: Validation 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: Validation 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: Validation 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.4 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.4 of the PDD for calculating baseline emissions.
- The project activity is located in India, 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.

4KES 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.

The project activity applies grid emission factor as per the latest available CEA CO₂ Baseline database version 16 and the emission factor applied is 0.9346 tCO₂/MWh. This calculated emission factor is conservative as per tool.

The National CDM Authority (NCDMA), which is the Designated National Authority (DNA) for the Government of India (GOI) under the Ministry of Environment, Forests & Climate Change (MoEF&CC), has mentioned four indicators for the sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India. Thus the project's contribution towards sustainable development has been addressed based on the following sustainable development aspects:

I. Social well-being:

The project activity provided / provides job opportunity to local people during erection, commissioning and maintenance of the WTGs. This directly and indirectly positively effects the economy of villages and nearby area.

Business opportunities will be enhanced as a result of the project activity for manufacturers, contractors, suppliers etc. The project activity will also improve local infrastructure like connectivity of the area through the construction of roads to the site which will benefit the villagers located on and nearby these roads.

II. Economic well-being:

The Project activity generates permanent and temporary employment opportunity within the vicinity of the project. The electricity supply in the nearby area improves which directly and indirectly improves the economy and lifestyle of the area.

III. Environmental well-being:

The wind power is one of the cleanest renewable energy powers and does not involve any fossil fuel. There are no GHG emissions. The impact on land, water, air and soil is negligible. Thus, the project activity contributes to environmental well-being without causing any negative impact on the environment.

IV. Technological well-being:

The successful implementation of the project activity will result in encouraging the use of cleaner technology. This will lead to replacement of the non eco-friendly sources of power generation like thermal energy which are the major sources of power in the country. This will also give rise to increased interest in mega scale wind energy in the country. This in turn would push the investment into research into creating better technology hence, the project activity leads to technological well-being.

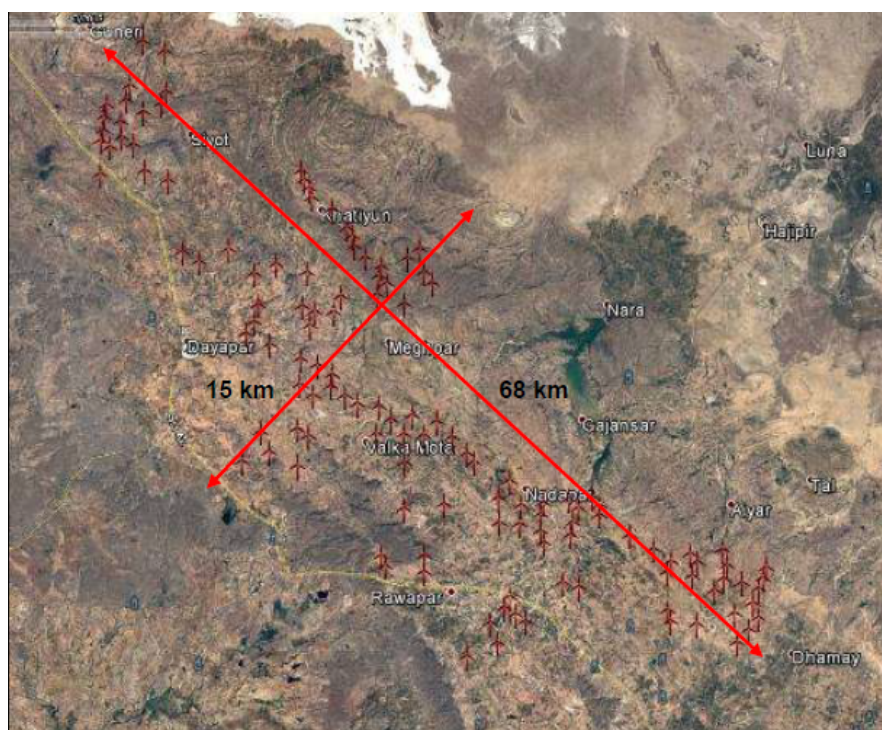
Validation Team checked the technical details /8/ & /9/ of the WTGs supplied by two different suppliers from the manufacturer's technical specifications and found the details to be matching. Siemens Gamesa make WTGs of SG122- 2.20 MW and Senvion make: M120- 2.3 MW model.

SG122- 2.2 MW	
General Data	
Rated power:	2.2 MW
Wind Class	IEC III/S
Control	Pitch and variable speed
Rotor	
Diameter:	122.0 mts
Swept area:	11690 m ²
Number of blades:	3
Power Density	188.19 W/m ²
Blades	
Length	50/60 Hz
Airfoils	Siemens Gamesa
Material	Fiberglass reinforced with epoxy or polyester resin
Gear box	
Type:	3 stages
Tower	
Hub Height	127 mts
Generator	
Type	Doubly-fed induction machine
Voltage	690 V AC
Frequency	50Hz/60 Hz
Protection class	IP 54

Senvion make: M120- 2.3 MW	
Design Data	
Rated power:	2.3 MW
Cut-in wind speed	3 m/s

Cut-out wind speed	20 m/s
Operating temperature range	0 – 45 °C
Rotor	
Diameter:	120.0 mts
Swept area:	13,273 m ²
Number of blades:	3
Pitch system	AC-motors with multi-stage gearbox,
Power Control	Electrical pitch
Blades	
Length	63.7 mts
Type	Glass fiber-reinforced plastic (GFRP)
Max. chord width	4 m
Generator	
Type	Electrically excited synchronous generator with IGBT converter
Frequency	50Hz
Voltage	600V
Protection class	IP 54
Gearbox	
Gearbox type	multi-stage planetary / spur gearbox
Yaw system type	Active alignment with yaw drives and active hydraulic brake systems
Number of yaw brakes	06

Site Location Details:



Satellite Image of Site Location (68 x 15 kms)

Validation Team checked the GPS and location details based on Commissioning Certificate and also verified the details on google earth and affirmed the location & GPS details. The complete location details are provided as appendix 3 to this report

Principle 2: Safeguarding Principles

The Safeguarding principles assessment is as below:

Safeguarding Principle	Assessment Question	Assessment of relevance to the project (Yes / Potentially / No)	Justification	Mitigation measure (if required)
Social				
1 Human Rights	i. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights ii. The Project shall not discriminate with regards to participation and inclusion	No No	The Project is not in conflict with the economic livelihood of the local community. The Project does not cause any human rights abuse and respects internationally proclaimed human rights issue. The PP confirmed that the project do not employ any personnel based on gender, race, religion, sexual orientation or any other basis which is also verified form the Company Employee Handbook. Further, the Project meets the local labour law requirements thus does not cause any human rights abuse. The India has ratified the Convention 100 (equal remuneration) and convention 111 (discrimination in employment /occupation) under the ILO Declaration on Fundamental Principles and rights6 The project adheres to the host country's commitment to the above mentioned conventions. Hence, assessment team confirms the project will not have any negative impact over the human rights.	Not Required
2. Gender Equality and Women's Rights	i. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women. li. Projects shall apply the principles of non discrimination,	No No	Validation team checked during the remote audit and confirmed the following: The employment contract for both Men and women is checked. The project ensures participation of both men and women, the benefits based on pregnancy, maternity/paternity leave, or marital status.	

	equal treatment, and equal pay for equal work. iii. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks.	No	Projects do not affect men and women in marginalised or vulnerable communities. Both men and women are employed as per the Skill level and requirement of the Organization. The Project does not potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services The Project design do not increase women work load however on contrary generated employment opportunity for them. Moreover, since the project generated employment 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 India has ratified the International Convention on the Elimination of All Forms of Racial Discrimination [2] on 03/12/1968 with certain reservation. The project activity is in line with strategy of elimination of discrimination.	Not required
3. Community Health, Safety and Working Conditions	i. Ensures that projects anticipate and avoid adverse impacts on the health and safety of affected communities during the Project's life cycle from both routine and non-routine circumstances. li. Ensures that projects to provide workers with safe and healthy working	No No	The project is renewable energy technology (wind Technology) and does not have exposure to increased health risks and shall not adversely affect the health of the workers and the community. The Validation Team checked the company's EHS Policy and confirmed that PP is committed to provide appropriate and comprehensive information, safe work procedures, instructions and training to ensure all personnel are fully aware of the organisation's safe work practices and enable them to meet their performance objectives.	Not Required

	conditions and to prevent accidents, injuries, and disease.		The HSE (Health and Safety Executive) states that best practice when installing and operation of wind turbines requires trained, dedicated working at height maintenance teams to access risks and select appropriate equipment before any work is carried out. All the safety and hygiene measures are being ensured in order maintain a safe and healthy environment for the workers at site. In case of any emergency, the site in-charge will ensure to take adequate action and preventive measures to avoid any mishaps. The project is in compliance with all relevant local and national laws pertaining to health safety and working conditions.	Not Required
4. Cultural Heritage, Indigenous Peoples, Displacement and Resettlement	4.1 - Sites of Cultural and Historical Heritage. 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)?	No	The Validation Team is able to confirm from the UNESCO website no cultural heritage exists or existed at the project site prior to this project activity, thus no harm observed⁵.	Not Required
	4.2 - Forced Eviction and Displacement. Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The validation team's prior experience with respect to wind power projects and regulations is able to affirm that PP has obtained necessary approvals from the local authorities (Village Sarpanch office / Village Administrative Office) which is the first in the hierarchy of governing bodies and does not lead to any resettlement. The information has also cross checked with prevailing Act for India (the Ministry of Rural development have the "The	Not Required

⁵ https://whc.unesco.org/en/interactive-map/?search=&id_states=in&id_search_region=2

			National Rehabilitation and Resettlement Act 2013	
	4.3 - Land Tenure and Other Rights. 1. The Project Developer shall identify all such sites/matters potentially affected by the Project. For all such sites/matters identified the Project shall respect and safeguard. (a) Legal rights, or (b) Customary rights, or (c) Special cultural, ecological, economic, religious or spiritual significance of people shall be demonstrably promoted/protected 2. Changes in legal arrangements must be in line with relevant law and regulation and must be carried out in strict adherence with such laws. All legal disputes must be resolved prior to Project being carried out in such areas. All such changes must be demonstrated as having been agreed with free, prior and informed consent. 3. The Project Developer must hold uncontested land title for the entire Project Boundary to complete Project Design Certification.	No No No	The PP had appointed 'Tata Consulting Engineers Limited' to assess the Environmental & Social Impacts of project activity, the assessing is one of the leading consulting firms in India /10/. The validation team has assessed and confirmed that proper due diligence was carried out on the selected site and the all legal process and procedures have been followed. Legal or any other form of disputes (if any) have to be resolved prior to the construction of this wind power plant. The entire land required for project has been procured by PP which is confirmed though verification of sale deeds of all land parcels. As confirmed by PP no Legal or any other form of disputes are pending now. The proponent has obtained necessary clearances from relevant government agencies for establishing the wind power plant. The project has obtained the necessary legal, customary rights on the land and does not require any change to land tenure arrangements	
5. Corruption	The Project shall not involve, be complicit in or inadvertently	No	Validation Team reviewed the Employee Handbook and Company's policy and was able to confirm that:	

	contribute to or reinforce corruption or corrupt Projects.		The project is renewable energy technology (wind Technology) and does not contribute to or reinforce corruption of any kind. Indulgence in corruption is an illegal activity in the host country and the local labour compliance takes into account of the same. There is no corruption involved in the project activity. The host country has strict laws and robust arrangements to prevent such activities.	Not Required
Economic Impacts				
6.1 Labour Rights	1. No forced labour. All employment is in compliance with national labour and occupational health and safety laws, consistent with principles of the International Labour Organization (ILO) fundamental conventions	No	1. The host country laws prohibits forced or compulsory labour. The Validation Team checked and ascertained from the supply contracts, and company's policy which clearly prohibits compulsory or forced labour is and health & safety measures are applied & followed at the company level and the contractors associated with this project activity.	Not Required
	2. Workers shall be able to establish and join labour organisations	No	Validation team confirmed that the workers / labours are free establish or join labour organisations and company abides to 'The Trade Unions Act, 1926'.	Not Required
	3. Working agreements with all individual workers shall be documented and implemented and include:	No	The Validation Team during the desk review checked and confirmed that PP documents working agreements of all individual workers, which includes working hours, duties, remuneration, Health Insurance, voluntary resignation and annual leave allotment.	Not Required
	a) Working hours (must not exceed 48 hours per week on a regular basis), AND			
	b) Duties and tasks, AND			
	c) Remuneration (must include provision for payment of overtime), AND			
	d) Modalities on health insurance, AND			
	e) Modalities on termination of the			

	contract with provision for voluntary resignation by employee, AND			
	f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave.			
	4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion)	No	The construction activities have been entrusted to Engineering Procurement Contractors (EPC) and the contract agreements checked by the validation team clearly states that Child Labour is strictly prohibited and abides with local and national laws. The project proponent has a set mechanism to ascertain the age of all the temporary/ permanent employees during the life time of the project.	Not Required
	5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures	No	The validation team assessed and confirmed that the company has an active HSE team and this team ensures that all employees are given appropriate equipment and training. The training and supply of equipment's are documented and appropriate measures taken in case of emergencies.	Not Required
6.2 Negative Economic Consequences	1. The Project Developer shall demonstrate the financial sustainability of the Projects implemented, also including those that will occur beyond the Project Certification period.	No	The Project Proponent has discussed about the financial sustainability of the project in section B.5 of the PDD and also that will occur beyond the Project Certification period. The validation team assessed the information and data used.	Not Required
	2. The Projects shall consider economic impacts and demonstrate a consideration of potential risks to the local	No	No potential risks to the local economy. The project does not involve any negative impacts and no any potential risk to local economy. The project leads to economic development in the local area by means of generating employment both direct and indirect and also positively affect socio economic	

	economy and how these have been taken into account in project design, implementation, operation and after the Project. Particular focus shall be given to vulnerable and marginalised social groups in targeted communities and that benefits are socially-inclusive and sustainable.		development of the local community.	
Environmental & Ecological				
7. Climate Change & Energy	7.1 Projects shall not increase greenhouse gas emissions over the Baseline Scenario	No	Validation Team confirms that the project activity is wind power project and will not lead to any increase in greenhouse gas/es over the baseline scenario.	Not Required
	7.2 The Project shall not affect the availability and reliability of energy supply to other users	No	The project is connected to the grid, and will not affect the energy supply other users rather it will lead to improving renewable energy mix in the local / national grid and also improve the quality voltage levels in local region.	Not Required
8. Water	8.1 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	The validation team checked and based on prior experience on wind power projects is able to conclude that the project activity will not affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s).	Not Required
	8.2 - Erosion and/or Water Body Instability: a. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt	Yes	Validation team based on the Tata Consulting Engineers Ltd. (TCE) Environmental and Social Impact Assessment (ESIA) report is able to conclude that the project activity location is relatively hilly and undulating interspersed ravines, open scrublands and land with barren patches.	

	the natural pattern of erosion? b. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	Yes	As the project location is a dry area, large perennial surface water bodies were not observed adjacent to wind turbine site locations during site reconnaissance survey. Hence, impact from soil erosion or sedimentation of surface water is minimal. Proper environmental management plan will minimize the residual impacts during the construction phase. Hence, impact on water quality is expected to be insignificant. However, PP proposed to monitor the soil erosion control measures proposed during the first verification.	Refer table below
9 - Environment, ecology and land use	9.1 Landscape Modification and Soil: Does the Project involve the use of land and soil for production of crops or other products?	No	The project activity involves barren land and does not involve use of land and soil for production of crops or other products. The project does not involve any landscape modification or soil. Hence there is no any impact.	Not Required
	9.2 Vulnerability to Natural Disaster: Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	The project is renewable energy technology (wind Technology). The Project will not be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions. Validation Team concludes this principle is not applicable.	Not Required
	9.3 Genetic Resources: Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?	No	The project activity is a wind power project and validation team is of the opinion that this principle is applicable.	Not Required

	9.4 - Release of pollutants	No	The operation of this project activity does not lead any release of pollutants.	Not Required
	9.5 - Hazardous and Non-hazardous Waste Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	Yes	The validation team noted that during operational phase uses various type of oil/lubricants, grease which would be used as part of Operation & Maintenance and these oil / lubricants /grease are classified as hazardous. The PP has measures to handle generated waste as per Hazardous Waste Management Rules and proper disposal of the same through waste management authority. Hence, PP proposed to monitor the hazardous waste management procedure annually to avoid any potential impact.	Refer table below
	9.6 - Pesticides & Fertilisers Will the Project involve the application of pesticides and/or fertilisers?	No	This principle is not applicable, since this is wind power project.	Not Required
	9.7 - Harvesting of Forest Will the Project involve the harvesting of forests?	No	This principle is not applicable, since this is wind power project.	Not Required
	9.8 – Food 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 renewable energy technology (wind Technology) power generation. The Project does not have any impact on the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives.	Not Required
	9.9 – Animal Husbandry Will the Project involve animal husbandry?	No	This principle is not applicable. The project is renewable energy technology (wind Technology) power generation. The Project does not involve animal husbandry.	Not Required
	9.10 - High Conservation Value Areas and Critical Habitats	No	Validation team based on the Tata Consulting Engineers Ltd. (TCE)	Not Required

	Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?		Environmental and Social Impact Assessment (ESIA) report is able to conclude that the project activity location is relatively hilly and undulating interspersed ravines, open scrublands and land with barren patches and does not affect or alter largely intact or HCV ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified.	
	9.11 - Endangered Species 1. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? 2. Does the Project potentially impact other areas where endangered species may be present through trans-boundary affects?	Yes	Validation team based on the Tata Consulting Engineers Ltd. (TCE) Environmental and Social Impact Assessment (ESIA) report is able to conclude that there are no endangered species identified at project site and also no species have the route through area and does not impact other endangered species through trans boundary affects. However, the birds & bats may get hit by wind turbine or in the transmission line. PP followed adequate mitigation measures during the site selection. Also, PP proposed to monitor the parameter 'Bird carcass rate' to check the impact during the operation stage.	Refer Table below

As per the above assessment, PP proposed the following mitigation measure to be monitored during the verification::

Safeguarding principle	Indicator	Monitoring
Principle 8.2 Erosion and/or Water Body Instability	Soil Erosion Control	To avoid soil erosion during construction time, PP proposed the following mitigation measure to be followed during construction: - Keep open areas of excavation to a minimum and construction activities restricted to dry months to avoid heavy rainfalls; - Using existing roads and lanes used by land owner. - Stockpiles of materials placed away from drainage lines and formed with sediment control structures placed immediately down slope; - Construction debris and excavated material were cleared up at regular intervals - Excavated material stockpiled and used for backfilling of foundations, platforms etc.

		- Minimization of traffic in construction zones and use of a dedicated parking area, i.e. site compound; - Re-vegetation taken up as necessary after construction, in order to reduce the risk of soil erosion. Source of data: Project O&M HSE logbook, or interview with maintenance staff. Frequency: Once at the time first monitoring period The mitigation measure and monitoring procedure provided for the parameter is found to be appropriate and feasible.
Principle 9.5 Hazardous and Non-hazardous Waste	Hazardous Waste Management	To avoid impact due to Hazardous Waste generated from the project, PP proposed the following mitigation measures that will be monitored during the verification: - A hazardous waste inventory is maintained as per the provisions of appropriate rules. - The hazardous waste will be disposed through MOEFCC authorized vendor. Source of data: Project O&M HSE logbook, or interview with maintenance staff. Frequency: Annual The mitigation measure and monitoring procedure provided for the parameter is found to be appropriate and feasible.
Principle 9.11 : Endangered Species	Bird and Bat Deaths	Bird & Bat carcass rate will be recorded as and when any bird or bat death is observed or reported. Source of data: Bird Strike register or interview with O&M team Frequency: Continuously monitored The monitoring parameter is appropriate for the mitigation measures.

The SDG goals are also described below:

SDG Goal	Assessment of Methodological choice 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: - Quantity of net electricity generation supplied by the project plant/unit in the year y in MWh will be sourced from share certificate issued by GETCO on monthly basis. The export and Import energy will be measured continuously using main and check meters and monitored through online systems. Hence, the net electricity reading will be directly sourced from the monthly joint meter readings report.

	QA/QC Process: Net electricity supplied to the grid by the project activity will be cross checked with invoices. Tri-vector Bidirectional 0.2s class energy meters are installed on HT side of PGCIL substation. The accuracy of energy meters installed are 0.2s. 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 (1,046,865MWh per annum) in the global energy mix. Corresponding indicator: Renewable energy share in the total final energy consumption
SDG 8 – Decent 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	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. - 02 Trainings provided/year - 100 jobs during operation - INR. 155 million spent on O&M 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 ex-ante parameter and determined based on data obtained from “CO₂ Baseline Database for Indian Power Sector” version 15, published by the Central Electricity Authority, Ministry of Power, and Government of India. 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 (978, 399 tCO₂ 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)
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Principle 3: Stakeholder Inclusivity

As per the CDM/GS requirements, it is necessary to invite the relevant stakeholders, before the validation process starts. The physical stakeholder consultation meeting was not conducted. Due to the ongoing COVID pandemic situation the PP could not perform the Local Stakeholder Consultation due to restrictions on public gatherings, travel restrictions, the validation team has raised FAR 01 to be addressed by PP during the first verification of this project activity.

PP also have grievance mechanism in place to address any complaints/grievances from stakeholders. The same is confirmed from the interview with the PP.

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. Electricity export and import is monitored through main and check meter. The net electricity generation is obtained from the Monthly Share Certificate issued by GETCO. The net electricity will be calculated by GETCO 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 State Electricity Board (SEB) to avoid malfunctioning / tampering. 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 / company representatives and GETCO officials to ensure the working of meter within permissible limits. The calculation of net electricity supplied to grid is under purview of GETCO and PP do not have control on it. The onsite practice is thus acceptable to the Validation Team as the same is as per the requirement of the approved methodology. Data / Parameter : $EG_{PJ,y}$ Unit: MWh/year Source of data: Monthly energy generation statement issued by GETCO. These are called JMR (Joint Meter Reading) Measurement methods and procedures: Net Electricity exported by the project is mentioned in the share certificate issued by GETCO on monthly basis. Monitoring frequency: measured continuously and recorded monthly
SDG 8 : Decent Work and Economic Growth	Number of Employment Generation	Project participant have Documentation pertaining to employment, attendance register and documentary details of training/capacity building. Validation Team checked the roles and responsibility of employee, the salary will be higher than the average salary of the region and hence the parameter monitoring is acceptable to the Validation Team. Data / Parameter: Number of employment generation Unit: Number Source of data: Plant records or training records for the employees/Letter from O & M Contractor for employment generation/ DOE interview with employees, local stakeholders 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. Validation Team remote audit that at least more than 100 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 Validation 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.

		It will be ensured that safe working condition and safety equipment's has been provided for all skilled and unskilled Labour. Safety equipment to be provided to workers both skilled and unskilled of the project activity. Validation Team checked the same as part of companies (HSE) policy. Data / Parameter: Quality of employment Unit: Number of Trainings provided per year 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. Data/Parameter: Emission Reductions Unit: tCO₂ e Source of data: Plant records and ER calculation sheet Measurement methods and procedures: NA Monitoring frequency: Annual

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. In continuation to the board decision, PP issued the respective purchase order for the supply of Wind turbine.

The project start date is 28/06/2019 and the first submission to GS is on 24/01/2020 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 Validation 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 Validation Team.

Validation Team checked the Continuous and real action considered for the project activity and the same is described below:

Project Timelines	Date	Documents checked by the DOE
Letter of Approval from SECI	23/02/2018	Letter of Approval with Ref no: SECI / C7P / WPD / T3 / LOA /AC/P1/19186 checked and found correct by the Validation Team.

Board decision for investing in Project and securing carbon credits & Start date	28/06/2019	Supply Contract signed between PP & Siemens Gamesa Renewable Energy Projects Private Limited checked and found correct by the Validation Team.
First submission to Gold Standard	24/01/2020	Confirmed screenshots of Sustaincert application.
Commissioning of WTGs	28/07/2020 -	First set of WTGs (40 nos. x 2.2 MW) – Dt., 28/07/2020 – 88 MW Last set of WTGs (4 nos. x 2.2 MW & 2 nos. x 2.3 MW) Dt., 31/03/2021 – 13.40 MW

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:

The start date of the project activity is 28/06/2019 (earliest date when the EPC contracts signed with technology supplier for erection and commissioning of project) and the listing date is 24/01/2020, within 1 year of start date. The first submission of project activity to GS is within one year of start date, thus project activity qualifies as retroactive GSVER project activity. Thus prior consideration of carbon revenue for current project activity is checked by the Validation Team and found correct.

Step 0: Demonstration whether the proposed project activity is the first-of-its-kind The proposed project activity is not the first-of-its-kind. Hence not applicable.

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 project activity.

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 renewable 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 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 03.0. In the PDD version 05 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. In the absence of the project activity grid electricity would have been the obvious choice 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, hence 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 Validation Team. Moreover, the financial indicator selected by the PP is correct based on the fact that tool does 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 Validation Team. Validation 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 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 Benchmark⁶ = $\{(1 + \text{Real Benchmark}) * (1 + \text{Inflation rate})\} - 1$

Where:

- Default value for Real Benchmark = 10.24% (as per Appendix of EB105, Annex 6)
- Inflation Rate forecast for by Reserve Bank of India (RBI) (i.e. Central Bank of India) for India.

Benchmark estimation

Appendix A in EB 105, Annex 6 specifies default value of expected return on equity in real terms for Energy Industries (Group 1) in India = 10.24%

Inflation Forecast for India as per RBI website⁷ :

Since RBI publishes the inflation forecast for 5 years and 10 years, PP has considered the maximum 10 year inflation considering the renewable crediting period of project activity.

Benchmark	Values	Source
Return on Equity	10.24%	Guidelines on the assessment of investment analysis, Investment Analysis tool, v10
Inflation forecast (Median) 5 year	4.50%	https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=18113
Inflation forecast (Median) 10 year	4.50%	https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=18113
Value with 5 Year Inflation Forecast	15.20%	calculated
Value with 10 Year Inflation Forecast	15.20%	calculated

Chosen Benchmark	15.20%	Conservative of the above two values
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The validation team accessed URL and was able to affirm the values used above and accepts the chosen benchmark of **15.20%** for this project activity.

The assumptions made in the financial analysis and as well validation team justification is summarised in the table below:

Parameter	Value	Source and Justification
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⁶ As per Pg. 320 of Corporate Finance, Second Edition of Aswath Damodaran

⁷ <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=18113>

Capacity of each WTG in MW	2.20 MW & 2.30 MW	DPR dated 01/05/2018 /12/ was the basis on which the capacity of WTGs were selected. The capacity of each WTG has also been cross checked by the validation team from the 1st supply contract signed between PP and SCREPL on 28/06/2019 and 2nd supply contract signed between PP and SWTPL Dt., 04/10/2019./6/ Also the commissioning certificates (12 Nos.)/13/ issued by Solar Energy Corporation of India Limited (SECI) between 28/07/2020 to 31/03/2021 were checked by the Validation Team to confirm the actual capacity of installed WTGs whilst projected WTGs in the IRR sheet.
Number of WTGs	136	1st supply contract signed between PP and SCREPL on 28/06/2019 for supply of 92 WTGs each of 2.20 MW Capacity , 2nd supply contract signed between PP and SWTPL Dt., 04/10/2019 for supply of 22 WTGs each of 2.30 MW Capacity. The commissioning certificates (12 Nos.) issued by Solar Energy Corporation of India Limited (SECI) between 28/07/2020 to 31/03/2021 were checked by the Validation Team to confirm the total no. of WTGs of this project activity.
Project capacity in MW	301.40 MW	Detailed Project Report dt., 01/05/2018
Plant Load Factor in %	39.65%	Detailed Project Report, dt., 01/05/2018
Tariff in Rs / kWh	2.45	Request for Selection – Bid Document issued by the SECI dt. 23/02/2018 The Power Purchase agreement dt., 31/05/2018 was checked by the validation team to ascertain the tariff.
Corporate Tax rate	34.61%	Income Tax Act ⁸ (calculated after considering the cess & surcharges)
Minimum Alternate Tax	21.34%	Income Tax Act ⁹ (calculated)
Debt Amount %	75	INR. 1394.42 Million , DPR dt., 01-05-2018 is the basis for the debt equity ratio.
Equity Amount %	25	INR. 464.70 Million The investment made by the PP in the form of equity. DPR dt., 01-05-2018 is the basis for the debt equity ratio. The same has been accepted by the validation team.
Interest Rate	12%	Detailed Project Report dt., 01/05/2018

⁸<https://www.indiafilings.com/learn/income-tax-rate-for-companies-ay-2019-20/>

Total Project Cost in INR. Million	18589.89	Detailed Project Report dt., 01/05/2018
Insurance Charges in INR. Million	184.94	Detailed Project Report dt., 01/05/2018
O&M expenses in INR. Million / Yr	211.00	Was derived from the Detailed project report /12/. The value used in the IRR computation was matching with the values mentioned in the offer letter. The signed Operation & Maintenance agreement /14/ was cross checked by the validation team and it was noted that actual values in the agreement and of those in IRR analysis sheet were the same.
Escalation on O & M Expenses	5%	The PP has assumed 5% year on year escalation on the expenses which is based on the DPR /12/ and initial offer /11/ received from the equipment supplier who is also the operation & maintenance contractor for the project activity. The financial analysis sheet and offer letter were checked and it was confirmed by the validation team that 5% has been used in assumptions and calculation of equity IRR. 1st Operation & Maintenance Contracts/14/ dated., 04/10/2010 between PP and SWTPL and 2nd O&M contract between PP and SGRPPL Dt., 22/11/2019 was made available by the PP to the validation team. From the signed contract it is noted that the actual year on year escalation of operation & maintenance charges agreed between the PP and Operation & Contractor is 5%.

The approach adopted by the validation team for verifying the assumptions and their references are as follows:

1. Appropriateness of the sources of reference & assumptions and their relevance to the period in which the decision was made;
2. Whether access to the references and information is provided;
3. Whether the references and information are publicly available;
4. Authenticity & credibility of the sources of information.

The assumptions made for the investment analysis were validated on the basis of the above approach. The method of calculation of the financial indicator used in the investment analysis, viz., the Equity IRR, was validated.

Assessment of the suitability of assumptions in the IRR calculations:

Basic Assumptions:

1. Size of the project activity: Checked against DPR. The DPR refers to the capacity of the project activity and confirms that the order was placed for Wind Turbine Generators of the same capacity as stated in the PDD.

2. No. of Wind Turbine Generators: Checked against supply contracts /6/. The supply contract placed on equipment supplier states the number of wind turbine generators for which order had been placed.
3. Cost of Wind Turbine Generators: Checked against the cost estimate in the detailed project report /12/ which was available to the PP prior to the decision making. The project cost considered in the financial analysis is 18589.89 Mn INR. The values have been checked by the validation team and are found to be matching with the values used in the basic assumptions of investment analysis /18/. As verified from the EPC contract, the EPC cost alone is found to be 16564.63 Mn INR. Considering other cost involved (Consulting, pre-operative, IDC, finance cost etc) the project cost considered is found to be appropriate.
4. The EB guidance on the reporting and validation of PLF [EB 48 Annex 11] accepts PLF provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval; The Plant Load Factor (PLF) is a function of annual gross electricity generation by the project activity. The PLF value has been derived from DPR Dt., 01/05/2018, /12/ PLF has been determined based on the PP's resource analysis. Hence validation team accepts the PLF derived from the DPR meets the requirements stated in the paragraph 3 (a) of Annex 11 of EB 48 Guidelines for the reporting and validation of PLF.
5. Power Tariff: Deduced from the LoA issued by SECI Dt., 23/02/2018. The LOA prescribes Rs. 2.45/ kWh as the tariff for wind power projects, the LOA was available before the decision date (28/06/2019) and hence same was considered in the DPR/12/. Hence, the validation team agrees with the assumption of tariff made by the project participant.
6. Operation & Maintenance charges: Based on the detailed project report/12/ which is also in line with initial offer received from Senvion Wind Technology Pvt Ltd (SWTPL) was received on 01/12/2018 /11/ for supply of 2.30 MW WTGs. The DPR & copy of the initial was made available to the validation team, the same was checked and confirmed that the same values have been used in the IRR computation. PP already signed O&M contract (50 MW with Senvion and 250 MW with Gamesa). The copy of the signed operation & maintenance agreement between PP & O&M contractor /14/ was made available to the validation team. As per the DPR the O&M cost is 0.7 Mn INR/MW. The actual O&M cost as per O&M cost also works out 0.7 Mn INR/MWh. Hence, the O&M cost considered for financial analysis was found to be acceptable by the validation team.
7. Escalation Operation & Maintenance charges: The PP has assumed 5% year on year escalation on the expenses which is based on the DPR/12/ which was available at the time of investment decision. The DPR was made available to the validation team and from the DPR it is noted that the year on year escalation is mentioned as 5%. The financial analysis sheet and offer letter were checked and it was confirmed by the validation team that 5% has been used in assumptions and calculation of pre tax IRR. The signed Operation & Maintenance Contracts dt., 04/10/2019 and 22/11/2019 /14/were made available by the PP to the validation team. From the signed contracts it is noted that the actual year on year escalation of operation & maintenance charges agreed between the PP and Operation & Contractor is 5%. The validation team based on this assessment is able to conclude that there is consistency in the escalation % assumed and actual escalation %.
8. Insurance Charges: The insurance charges were derived based on the DPR/12/ which is based on the quotation received from Insurance companies for this project activity. The insurance charges per WTG works out to be 184.94 Million Rupees for the 136 WTGs. It was also noted that the PP has fixed the insurance cost constant for the entire technical life time of the project activity and there was no escalation considered.

Conclusion:

The validation team has confirmed that the DPR, initial offers received from the equipment suppliers and LOA issued by SECI were available to the PP at the time of the investment decision for the project activity. The crosschecking of values revealed that there were no mismatches between the values in

the assumption sheet of the IRR calculations and the values that were available from public references or sources.

Tax related assumptions:

Sections 205 & 350 in the Schedule XIV of the Companies Act 1956 specify the rates of book depreciation and salvage value that should be considered for various categories of assets. The validation team, confirmed that the rates considered in the IRR calculations are in accordance with this schedule. The same are as follows:

- i. Book Depreciation on the equipment by the straight -line method (SLM): @ 13%;
- ii. Depreciation for machinery by Written Down Value (WDV) method @ 15%;
- iii. Salvage value: @10% (the Companies Act allows up to 90% depreciation on plant and machinery. The salvage value considered is 10%, which is conservative);
- iv. The income tax applicable at the time of decision making is taken @ 34.61%, which is calculated as per the income tax act;
- v. Minimum Alternate Tax @ 21.34%, calculated as per the Income Tax Act.

The validation team confirms that the project participant has applied all the statutory levies and taxes as per the rules which were applicable at the time of decision making.

The arithmetical accuracy of the IRR calculations and found the same to be correct. The IRR calculations have been provided in an MS-Excel spreadsheet. The formulae used in the spreadsheet are readable. All the cells of the spreadsheet can be accessed and the data in the cells can be viewed, as the cells are unprotected. The assessment period for IRR value computation is taken as 25 years.

The validation team hereby confirms that the principle adopted in making assumptions, projections and the computations for IRR value in the investment analysis, conforms to the accepted and standard accounting and taxation principles of the host country and is also in conformity with the requirements specified under CDM Tool27: Investment analysis, Version 11.0. The validation team has verified the IRR calculations and observed them to be in order

Sensitivity analysis:

The robustness of the conclusion drawn above, namely that the project is not financially attractive, has been tested by subjecting critical assumptions to reasonable variation. As required by Investment Analysis Tool, v10, only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation. PP has identified the total revenue from the project activity is dependent on the Tariff, Plant Load Factor, Project Cost and O&M Costs constitute more than 20% of the project costs. These factors have been subjected to a 10% variation on either side and the results of the sensitivity analysis indicate that even after applying such variation the EIRR does not cross the benchmark.

Variation %	-10%	Normal	10%	Variation required to reach benchmark	Value required to reach benchmark
Tariff	3.17%	6.17%	9.60%	24.30%	3.045
PLF	3.17%	6.17%	9.60%	24.30%	49.28%
Project Cost	9.30%	6.17%	3.94%	-22.50%	14407.16

O&M Cost	6.54%	6.17%	5.71%	NA	NA
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An analysis has been done to identify the percentage variation at which the financial indicators will equal/breach the benchmark and the probability of its occurrence. Based on sensitivity analysis it can be concluded that the proposed project activity is additional with reasonable variation in values and is not likely to reach the benchmark value. The occurrence of these events is unlikely for the following reasons:

- a) **Tariff:** The Tariff rate of electricity used for investment analysis i.e. 2.45 INR/kWh is sourced from the PPA price available at the time of investment decision. Furthermore, the project will breach the benchmark value at a tariff variation of 24.3%. Since, the tariff based on the PPAs is fixed for 25 years without any escalation 24.3% increase in tariff is unlikely to happen.

Validation team affirms that the probability of reduction or increase of the power tariff by 10% is not possible in current context of the project activity since the Power Purchase Agreement (PPA) has been signed at the fixed rate (Rs.2.45 per kWh) for the entire tenure of 25 years.

- b) **PLF:** The PLF value considered from the third party energy yield assessment report i.e. 39.65% and the IRR breach the benchmark value at a PLF variation of more than 24.3%. The increase in PLF value to breach the benchmark is highly unlikely as the value has been taken from the detailed energy yield estimation report for 25 years which is accurate and also the value considered is P75 which is conservative. Moreover normative PLF for the state of Gujarat and equity IRR at normative PLF values are less than the benchmark value and given the analysis above its unlikely that PLF will increase above breaching value.

The validation team notes at P-50 levels the PLF achieved is at the highest level when compared to P75 and P90 Therefore, it would be unlikely that the PLF could be up to 10% in excess of the estimated values on sustained basis throughout the lifetime of the project.

- c) **Project Cost:** The project cost considered for investment analysis is 18589.89 million INR. The cost is sourced from DPR which is based on the negotiations with Supplier. A variation of -22% is required for IRR to breach benchmark is not possible since the actual project cost as per the EPC contract price is INR. 16564.63 million which is much higher than benchmark breaching value. Since the project is already commissioned at the above said EPC price it is unlikely that the project cost will be decreased below the breaching value.

At the time of validation, the supply contract and erection & commissioning agreement with the equipment supplier was placed for the project activity. The validation team reviewed the supply contract and erection & commissioning agreement and found that the Project Cost is unlikely to reduce since the contract (supply) has already been placed and the PP is obligated to the pay the fees or expenses stipulated in the contract and agreement. The possibilities of the project cost 10% lower than the assumed value is unlikely since the supply contract has already been signed. The PP has to adhere to contractual terms and is obliged to pay the obligated cost to the equipment supplier. Even with possibilities of increase or decrease in the project cost the IRR still remains below the benchmark.

- d) **O&M Costs:** 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 O&M agreement) and also subject to inflationary pressure, any reduction in the O&M costs is highly unlikely. The O&M contract has already been signed at a annual average cost of INR 0.5 million per MW for the next 5 years and 0.9 million per MW from the 6th year.

The carbon revenue from the project activity would provide significant amount of returns from the sale of the Emission Reductions accrued from the project activity and in turn increase the financial attractiveness of the project activity and hence make the project activity more financially viable.

The validation team agrees with the approach followed in the selection of parameters for the sensitivity analysis, as the criteria employed in the same meets the EB 62 Annex 05 guidelines for Investment analysis. The results of the sensitivity analysis carried out have been tabulated by the project participant in the PDD.

The results of the sensitivity analysis indicate that even in situations favouring higher PLF, decrease in project cost and increase in power tariff, the project IRR for the investment would not cross the benchmark of 15.20%.

The sensitivity analysis is included by the project participant as a part of the spreadsheet for investment analysis. The results of the sensitivity analysis can be checked by inserting the range of variation (i.e. +/- 10%) in the worksheet named "sensitivity" in the investment analysis spreadsheet (two in numbers for two sites). The validation team validated the accuracy of computations of the sensitivity analysis and confirmed that the same are correct.

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 718:

1. Applicable Geographical Area (Para 9): The Gujarat state has been considered as the applicable geographical area for this project. PP has considered the Gujarat state as geographical area due to regulatory regime since applicable power tariff structure for renewable energy projects is unique for all the states across national boundary of India; which is based on Electricity Act 2003 (EA 2003), section 82 which clearly mentions "Every State Government shall, within six months from the appointed date, by notification, constitute for the purposes of this Act, a Commission for the State to be known as the (name of the State) Electricity Regulatory Commission" Appropriateness of the same has been checked and confirmed from EA 2003 (<http://www.cercind.gov.in/08022007/Act-with-amendment.pdf/40/>). Hence, Gujarat state is considered as geographical region for common practice analysis.

2. Measure (Para 10): The project activity reduces greenhouse gas emissions by generating electricity using renewable energy source-all renewable energy source. 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%	452.10	MW
Capacity of the proposed project activity	301.40	MW
-50%	150.70	MW

Since the project activity is 301.40 MW, the output range of +/- 50% has been considered as

452.10 MW (Higher range for comparison) to 150.70 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:

- The projects are located in the applicable geographical area;
- The projects apply the same measure as the proposed project activity;
- 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;
- 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;
- The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;
- 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:

- As the project is located in Gujarat state of India, therefore, project in the geographical area of Gujarat have been chosen for analysis. Each state has different policies regarding renewable energy; hence Gujarat state is considered as geographical region for common practice analysis. The distinction from choosing the state to entire geographical boundary is already explained above in the report and thus the applied geographical area is acceptable to the Validation Team.
- 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.
- The energy source used by the project activity is wind which is a renewable energy. Hence, all renewable energy projects have been considered for analysis.
- The project activity produces electricity; therefore, all power plants that produce renewable electricity are candidates for similar projects.
- The capacity range of the projects is within the applicable capacity range from 150.7 MW to 452.1 MW
- The start date of the project activity is 28/06/2019. Therefore projects which had started commercial operation before 28/06/2019 to project's start date, have been identified. Numbers of Similar projects identified, which fulfil above-mentioned conditioned are:

Sr.No	Name of Project	Capacity (MW)	Technology	Date of Commissioning
1	Ostro Kutch Wind Private Limited	250	Solar	29-03-2019
2	ReNew Power Limited	250	Solar	17-05-2019
3	Mytrah Vayu Sabarmati Private Limited	250	Solar	10-05-2019
4	Green Infra Wind Energy Ltd	250	Solar	23-06-2019
5	Green Infra Wind Energy Ltd	300	Solar	07-05-2019
6	Torrent Power Limited	216	Wind	Mar-17

The above details are verified from SECI website and Wind power directory, 2020.

Numbers of Similar projects identified, which fulfil above-mentioned conditions have been identified from the wind power directory

$N_{wind} = 1$

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.

Sr.No	Name of Project	Capacity (MW)	Technology	Date of Commissioning	Registered Under	Project ID
1	Ostro Kutch Wind Private Limited	250	Solar	29-03-2019	VCS	<u>2031</u>
2	ReNew Power Limited	250	Solar	17-05-2019		
3	Mytrah Vayu Sabarmati Private Limited	250	Solar	10-05-2019	VCS	<u>2020</u>
4	Green Infra Wind Energy Ltd	250	Solar	23-06-2019	GS	7468
5	Green Infra Wind Energy Ltd	300	Solar	07-05-2019	GS	7152
6	Torrent Power Limited	216	Wind	Mar-17	VCS	2044

After excluding the registered and under validation projects the total number of projects,

$N_{all} = 0$. Validation Team checked the UN web site and excluded the project which are CDM registered or under Validation.

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 energy source of project activity. Since the project is a wind project, the project other than wind project is defined as “different technology” projects. However, as mentioned above, there is no renewable energy project was commissioned before the start date of the project but not registered under any carbon mechanism. 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

$$F = 1 - N_{diff}/N_{all}$$

$$F = 1 - (0/0) = 1$$

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

Outcome of Step 5:

As, $N_{all} - N_{diff} = 0$;

Since $N_{all} - N_{diff}$ is not greater than 3, the project is not a “common practice” within a sector in the applicable geographical area.

The validation team based on the assessment is able to confirm that the proposed CDM project activity is not a common practice in the Gujarat region

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

The GS4GG PDD of the project activity is checked by the Validation 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.

Validation 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 tCO₂/year

BE_y = Baseline emission in tCO₂/year

PE_y = Project emissions in tCO₂/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 CO₂/yr)

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

$EF_{grid,CM,y}$ = Combined margin CO₂ 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 CO₂/MWh)

$EG_{PJ,y}$ is determined based on the DPR Energy Assessment report. As per the report, the expected PLF of the project is 40.0. Based on the PLF, the net generation of the project is estimated to be 1,046,865 MWh.

$$BE_y = 978,399 \text{ tCO}_2\text{e}$$

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 (tCO₂e/yr)

$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y (tCO₂/yr)

$PE_{GP,y}$ = Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year y (tCO₂e/yr)

$PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year y (tCO₂e/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,

$ER_y = BE_y = 978,399$ tCO₂ per annum

SDG 13 Climate Actions- Estimate

Year	Baseline estimate (tCO ₂)	Project estimate (tCO ₂)	Net benefit (tCO ₂)
Year 1	0	978399	978399
Year 2	0	978399	978399
Year 3	0	978399	978399
Year 4	0	978399	978399
Year 5	0	978399	978399
Total	0	4891995	4891995
Total number of crediting years	5		
Annual average over the crediting period	0	978399	978399

SDG 7: Affordable and Clean Energy- Estimate

Year	Baseline estimate (MWh)	Project estimate (MWh)	Net benefit (MWh)
Year 1	0	1046865	1046865
Year 2	0	1046865	1046865
Year 3	0	1046865	1046865
Year 4	0	1046865	1046865
Year 5	0	1046865	1046865
Total	0	5234323	5234323
Total number of crediting years	5		
Annual average over the crediting period	0	1046865	1046865

SDG 8: Decent Work and Economic Growth- Estimate

Year	Baseline estimate	Project estimate	Net benefit
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Year 1	0 Training, 0 Jobs	2 Trainings provided to O&M staff/year & 100 jobs during operation	2 Trainings provided to O&M staff/year & 100 jobs during operation
Year 2	0 Training, 0 Jobs	2 Trainings provided to O&M staff/year & 100 jobs during operation	2 Trainings provided to O&M staff/year & 100 jobs during operation
Year 3	0 Training, 0 Jobs	2 Trainings provided to O&M staff/year & 100 jobs during operation	2 Trainings provided to O&M staff/year & 100 jobs during operation
Year 4	0 Training, 0 Jobs	2 Trainings provided to O&M staff/year & 100 jobs during operation	2 Trainings provided to O&M staff/year & 100 jobs during operation
Year 5	0 Training, 0 Jobs	2 Trainings provided to O&M staff/year & 100 jobs during operation	2 Trainings provided to O&M staff/year & 100 jobs during operation
Total	0 Training, 0 Jobs	10 Trainings provided to O&M staff/year & 100 jobs during operation	10 Trainings provided to O&M staff/year & 100 jobs during operation
Total number of crediting years	5 Years		
Annual average over the crediting period	0 Training, 0 Jobs	2 Trainings provided to O&M staff/year & 100 jobs during operation	2 Trainings provided to O&M staff/year & 100 jobs during operation

4 Open issues from Preliminary Review

No	Open issues	Assessment
1	<u>Likely CAR #1:</u> PD shall mention the specific geo coordinates of all the WTGs.	PD has mentioned the specific geo coordinates of all the WTGs in the section A.2 of PDD
2	<u>Likely CAR #2:</u> VVB shall check the evidence for start date of the project activity	PD has provided the Supply Contract & service contract signed between Alfanar Power Services Private limited & Siemens Gamesa Renewable Power Private Limited (SGRPPL) Dt., 28/06/2019 which is the first real action in the project activity. The start date mentioned in the PDD is matching the contract date. Hence, okay.

3	<u>Likely CAR #3:</u> 1. Please add reference to the values of OM,BM and CM from Central Electricity Authority, India in the PDD. 2. For the common practice analysis, PD is requested to list all the wind energy projects in Gujarat (GS, CDM and other Standards) and how it is not necessary to be considered as 'similar project'. We would like to refer the CDM project (https://cdm.unfccc.int/Projects/DB/BVQI1229917560.71/view), which is in close quarters and may be qualified to be considered as 'similar project' as per common practice.	1) PD added the reference to the values of OM,BM and CM from Central Electricity Authority, India in the PDD 2) As the project capacity is 301.4 MW PD has considered all the wind projects in Gujarat with the capacity ranging from 150.7 MW to 452.1 MW. However only one project identified within this range which is listed in the PDD. This is confirmed from verification of Indian Wind Power Directory. Moreover the capacity of the CDM project (https://cdm.unfccc.int/Projects/DB/BVQI1229917560.71/view) is 150 MW which does not fall under the capacity range of 150.7 MW to 452.1 MW. Hence this project is not considered by PD. This is found to be appropriate.
4	<u>Likely CAR #4:</u> PD shall choose and mention the SDG indicators from the UN link available in the PDD template.	PD considered SDG indicators from the UN link available in the PDD template.
5	<u>FAR # 1:</u> PP shall conduct the physical meetings and stakeholder feedback round as soon as the COVID situation eases. VVB shall confirm the physical meeting is in line with Gold Standard Stakeholder Consultation and Engagement Requirements (version 1.2 dated October 2019)	Due to COVID the stakeholder consultation is not conducted. As per the COVID interim measures, PD will conduct the stakeholder consultation when the COVID situation eases. Hence FAR-01 is raised.
6	<u>FAR # 2:</u> Stakeholders Consultation Report: - The project developer shall invite stakeholders from all categories A to G mentioned in paragraph 3.1.1 in the "Stakeholder Consultation and Engagement Requirements" guidelines. - The invitation for the consultation meeting shall be given at least 30 days before the meeting takes place. - PP shall provide the original versions of evaluation forms and 4-5 representative samples of the evaluation forms in English. - PP shall ensure that the blind sustainable development assessment is conducted in the consultation meeting.	Due to COVID the stakeholder consultation is not conducted. As per the COVID interim measures, PD will conduct the stakeholder consultation when the COVID situation eases. Hence FAR-01 is raised.
7	<u>FAR # 3:</u> Design of the Stakeholder Feedback Round: - The PP shall conduct Stakeholder Feedback Round lasting minimum of 2 months and the requested documents shall be public available for global consultation. - All the attendees of LSC meeting shall be invited for further feedback/comment during SFR.	Due to COVID the stakeholder consultation is not conducted. As per the COVID interim measures, PD will conduct the stakeholder consultation when the COVID situation eases. Hence FAR-01 is raised.

8	FAR # 4: All the safeguarding principles assessment shall be supported with evidence/references/expert's opinion. The PP shall provide them for GS VVB validation.	PD provided ESIA report, company HR policy, Land sale deeds, Approvals and additional references in support of safeguarding principle assessment.
9	FAR # 5: VVB is required to check for double counting at both validation and verification stages by reviewing all relevant registries that could hold RECs/VERs/CERs from the considered geography of the project activity.	The validation team checked the following registries for double counting: • CDM registry¹⁰ • VCS registry¹¹ • GCC registry¹² • I-REC registry¹³ • Domestic REC registry¹⁴ From the verification of the above registry, validation team confirms that the project is not registered or applying under any of the above mechanism. Hence, there is no double counting expected from this project.

5 Project Design Certification Statement

4KES have performed a validation of the GS VER project “300 MW Wind Power Project in Gujarat by Alfancar Power”. The validation was performed on the basis of UNFCCC criteria CDM Validation and Verification Standard for the project activities version 03.0, Gold Standard GS4GG guideline version 1.2 and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the GS4GG PDD version 05 and the subsequent follow-up interviews has provided 4KES 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 4KES 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 CO₂ 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 978,399 tCO₂e 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 03.0, Gold Standard GS4GG guideline and on the basis of the contractual agreement.

In detail the conclusions can be summarized as follows:

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

¹⁰ <https://cdm.unfccc.int/Projects/projsearch.html>

¹¹ <https://registry.verra.org/app/search/VCS>

¹² https://projects.globalcarboncouncil.com/pages/approved_projects

¹³ <https://evident.services/device-register>

¹⁴ https://www.recregistryindia.nic.in/index.php/publics/accredited_regens

- 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.

6 Reference

S. No.	Document/Evidence/Reference/Web-link, Version, Date
1	GS4GG PRINCIPLES & REQUIREMENTS, Version 1.2
2	Letter of Award, issued by SECI with Ref No: SECI/C&P / WPD /T3/LOA/AC/P1/19186
3	Approved baseline and monitoring methodology ACM0002 version 20.0
4	Validation and Verification Standard for project activities version 03.0
5	GS PDD, Version 7.0
6	Supply Contract & service contract between Alfanar Power Services Private limited & Siemens Gamesa Renewable Power Private Limited (SGRPPL) Dt., 28/06/2019 Land development contract, Supply Contract, BOP contract, erection & commissioning contract and coordination contract signed between Alfanar Power Services Private limited and Senvion Wind Technology Pvt Ltd (SWTPL) Dt., 04/10/2019.
7	Tool to calculate the emission factor for an electricity system” is version 07
8	Technical Specifications of Siemens Gamesa make, model: SG122- 2.2 MW
9	Technical Specifications of Technical Specifications of Sevion make, model:M120-2.3 MW
10	Tata Consulting Engineers Limited’ to assess the Environmental & Social Impacts Report, Dt 06/03/2019
11	Initial Offer of Senvion Wind Technology Pvt Ltd (SWTPL) was received on 01/12/2018
12	Detailed Project Report, Dt., 01-05-2018
13	Commissioning certificates of the project
14	O&M Contract signed with Senvion Wind Technology Pvt Ltd, dt 07/02/2020 O&M Contract signed with Gamesa, dt 22/09/2019
15	Copy of grievance register
16	HR Policy of Alfanar Group
17	ER Estimation sheet, version 2
18	Financial calculation sheet, version 2
19	Land sale deeds
20	All Approvals & Clearances

Appendix 1. Clarification requests, corrective action requests and forward action requests

Table 1 CLs from this Validation

CL ID	01	Section no.		Date:	20/08/2021
Description of CL					
Letter of Award from SECI (Dated 23/02/2018) to be made available to the Validation Team					
Project participant response				Date:	15/09/2021
Letter of Award copy from SECI dated 23/02/2018 has been submitted					
Documentation provided by project participant					
1. LOA Copy from SECI.					
DOE assessment				Date:	24/09/2021
The PP has submitted Letter of Award received from SECI dated 23/02/2018 with Ref No: SECI/C&P/WPD/T3/LOA/AC/P1/19186. The Validation Team from the LOA was able to confirm the allotted capacity and tariff for this project. The document and response provided is acceptable to the validation team hence CL 01 is closed.					

CL ID	02	Section no.		Date:	20/08/2021
Description of CL					
Full Detailed Project Report to be submitted to the Validation Team.					
Project participant response				Date:	15/09/2021
Full techno-commercial DPR for 300 MW has been submitted.					
Documentation provided by project participant					
DPR					
DOE assessment				Date:	24/09/2021
Detail Project Report has been submitted CL 03 is closed.					

CL ID	03	Section no.		Date:	20/08/2021
Description of CL					
The Validation Team upon performing the document review has the following clarification: - Role of Alfanar Power Services Pvt Ltd and Alfanar Power Private Limited in this project activity. - Relation between Alfanar Energy Pvt Ltd and above mentioned companies.					
Project participant response				Date:	15/09/2021
Project owner is hereby conforms that all the three companies Alfanar Power Services Pvt Ltd , Alfanar Power Private Limited and Alfanar Energy Pvt Ltd are the Subsidiaries of Foreign parent company Alfanar Power KSA.					
It is further clarified that 1. Subsequent to allotment of LOA from SECI to M/s Alfanar Company, it has signed the Power Purchase agreement with the local Indian subsidiary Alfanar Energy Pvt Ltd. 2. Other subsidiaries, Alfanar Power Services Pvt Ltd , Alfanar Power Private Limited and Alfanar Energy Pvt Ltd are the companies registered as different legal entities to supply the material and execute the projects allotted to the alfanar Power under the same umbrella. 3. From the EPC contracts it can be clarified that Alfanar Power Private limited has been appointed for sourcing the WTGs and companies Alfanar Power Services Pvt Ltd has been appointed for the sourcing of BoP and erection and commissioning.					
Documentation provided by project participant					
NA					
DOE assessment				Date:	24/09/2021
The justification provided by PP is acceptable to the Validation Team, hence CL 03 is closed.					

CL ID	04	Section no.		Date:	20/08/2021
Description of CL					

The Supply Contract signed on 28/06/2019 between Alfanar Power Service Pvt Ltd and Siemens Gamesa Renewable Energy Project Pvt Ltd., is only for 92 WTGs (each of 2.20 MW Capacity) or 202.40 MW. The PP is requested to submit the Supply Contract for the remaining 22 WTGs or 48.40 MW.	
Project participant response	Date: 15/09/2021
An amendment contract for balance 22 Nos of 2.2 MW WTGs signed with Siemens Gamesa Renewable Energy Project Pvt Ltd has been submitted. With this submission EPC contract for total 301.4 MW has been completed. (22 Nos of 2.3 MW and 114 Nos of 2.2 MW).	
Documentation provided by project participant	
EPC amendment contract for balance capacity.	
DOE assessment	Date: 24/09/2021
The PP has submitted two Addendums, the 2 nd Agreement dated 05/11/2019. Hence CL 04 is closed.	

CL ID	05	Section no.		Date: 20/08/2021
Description of CL				
The Operation & Maintenance (O&M) Agreement executed post commissioning of project activity to be made available to Validation Team.				
Project participant response				Date: 15/09/2021
PP has signed the O&M contract for 10 years period with the WTG suppliers cum EPC contractors (Senvion and Seimens-Gamesa) during the commissioning of the WTGs. Contract is valid for 10 years with the scope of further extension with mutual understanding.				
Hence no O&M contract has been signed later after commissioning of the WTGs. O&M contracts have been provided to DOE for verification.				
Documentation provided by project participant				
NA				
DOE assessment				Date: 24/09/2021
The two O & M agreements dated (22/11/2019 and 07/02/2020) are submitted by PP Hence CL 05 is closed.				

CL ID	06	Section no.		Date: 20/08/2021
Description of CL				
PP to submit the Human Right's policy to the validation team.				
Project participant response				Date: 15/09/2021
HR Policy manual has been submitted.				
Documentation provided by project participant				
NA				
DOE assessment				Date: 24/09/2021
The Human Rights Policy has been submitted to the validation team, hence CL 06 is closed.				

CL ID	07	Section no.	A.1	Date: 20/08/2021
Description of CL				
Commissioning Certificate dated 04/03/2021 (Ref No: SECI/Wind Tranche -3/COD-X/AEPL-P1) issued by Solar Energy Corporation of India Limited (SECI) mentions installation of only 4 Nos. of WTGs, whereas in the table presented in section A.1 of the PDD the no. of WTGs mentioned as 5 Nos. of WTGs (SI No. 10 of Table). PP is requested to clarify the same.				
Project participant response				Date: 15/09/2021
This is a typographic error happened from the SECI while issuing the certificate. Please refer to the page no-02 (Annexure 01) of the commissioning certificate mentions the 05 WTG details commissioned on 04/03/2021. Hence project proponent has accepted the commissioning certificate as rest of the details are matching and the total capacity of the project including these 5 WTGs are within the limit of total 300 MW of allotted capacity.				
Hence in line with the annexure 1 of the commissioning certificate project proponent has considered the 5 Nos of WTGs as commissioned on 04/03/2021.				
Documentation provided by project participant				
NA				
DOE assessment				Date: 24/09/2021

Based on the PP's reply and document verification the validation team is of the opinion that the actual no. of WTG's is 5, the entity (SECI) had erroneously mentioned 4 WTGs instead of 5 Nos. of WTGS. Hence CL 07 is closed.

CL ID	08	Section no.	A.1, A.3 and A.4	Date:	20/08/2021
Description of CL					
The allotted Capacity as per the PPA and Commissioning Certificate is 300 MW, as per the PDD the installed capacity stands at 301.4 MW, PP is requested to clarify the difference between allotted and installed capacity.					
Project participant response					Date: 15/09/2021
Though the allotted capacity is upto 300 MW most of the wind power project cases it is not possible to match the allotted capacity depending on the rated capacity of the turbine chosen for the project. In the project case PP has proposed to install 22 Nos of 2.3 MW WTGs (301.40 MW) & 114 nos of 2.2 MW WTGs (250.8MW) based on the available capacities at the time of decision making. To comply with the LOA and PPA terms PP has to mandatorily install 300 MW, Hence PP has installed 136 WTGs equivalent to 301.4 MW rather installing less than 300MW Capacity. As per the last issued Commissioning certificate by SECI 31/03/2021, total 13.3 MW has been installed which confirms that the total commissioned capacity including 13. MW as on 31/03/2021 is 301.4 MW, whereas SECI in the commissioning certificate has confirmed that only 12 MW has been commissioned on 31/03/2021 which gives total of 300 MW. Additionally, it is to clarify that as per the PPA terms, irrespective of the commissioned capacity PP is obliged to supply the minimum and maximum generation to the grid during the any year of the total PPA tenure. Hence PP clarifies that due to the rated capacity of the WTG the installed capacity has been increased to 301.4 MW instead 300 MW which is happened in the knowledge of the SECI and been approved by SECI.					
Documentation provided by project participant					
NA					
DOE assessment					Date: 24/09/2021
The reply provided by the PP is found to be satisfactory and the validation team is able to conclude that SECI (the approving authority) has taken the cognizance of actual no. of WTGs whilst the actual capacity of project and have not raised any objection. Hence CL 08 is closed.					

CL ID	09	Section no.	B.4	Date:	20/08/2021
Description of CL					
PP to confirm that the set of values used in determining the baseline in the 1 st Version of PDD and Version 3.0 are the same.					
Project participant response					Date: 15/09/2021
The first submission date of the PPD version 01 is 24/01/2020 by which the DPR and energy yield assessment has been already available, which have been referred for the input parameters used while determining the baseline scenario and equity IRR for the assessment of additionality. Same have been referred in version 03 of the PDD while updating the PDD with the latest available GS PDD template version V1.2. Hence PP confirms that all the values used in the determining the baseline scenario in the version 01 and version 03 of the PDD are same except the following changes made to the PLF and CO₂ baseline emission factor. 1. Inversion of the PDD PP has used the PLF of 36% (corresponding to P90 generation) from the energy yield assessment report where as in version 03 of the PDD PP has used the PLF of 39.65% (corresponding to P75 generation) which is most plausible and also conservative while calculating the Equity IRR for additionality assessment) 2. PP has used the latest available version of the CO₂ baseline database as on date i.e version 16 dated 19-March 2021 in version 03 of the PDD where as version 15 has been used in the version 01 of the PDD to determine the grid emission factor as per the "Tool to calculate the emission factor for an electricity system version 7.0"					

Except the above two changes rest all the inputs used in the version 01 and version 03 of the PDD remains same.	
Documentation provided by project participant	
NA	
DOE assessment	Date: 24/09/2021
The clarification provided by the PP is acceptable. The Validation Team based on the data validation in the ER sheet is able to conclude that data derived from latest version of CO ₂ BASELINE DATABASE, published by Central Electricity Authority (CEA) Version 16 for computing Combined Margin (CM) is conservative when compared to the earlier database (Version 15). The data sourced from the previous database (Ver 15) would have yielded a higher CM value and resulted in higher Emission Reductions. The approach adopted by PP is agreeable to the Validation Team. Hence CL 09 is closed.	

CL ID	10	Section no.	B.5	Date: 20/08/2021
Description of CL				
The document provided for Common Practice Analysis contains extensive information, the PP is requested to provide reference / traceability in PDD for sourcing the information.				
Project participant response				Date: 15/09/2021
Specific information provided in the PDD to identify/trace the relevant information used form the wind power directory referred for the establishment of common practice analysis.				
Documentation provided by project participant				
Revised PDD.				
DOE assessment				Date: 24/09/2021
The PP has provided the specific section in document, the Validation Team verified the source and is able to conclude the authenticity of the data provided in the PDD. Hence CL 10 is closed.				

CL ID	11	Section no.	E.1	Date: 20/08/2021
Description of CL				
The project start date is 28/06/2019, PP to clarify whether Stakeholder Consultation and Engagement Requirements were adhered to.				
Project participant response				Date: 15/09/2021
This is a retroactive project hence Stakeholder consultation will is being conducted after the start date of the project activity. Due to the Covid-19 pandemic PP is unable to conduct the physical stakeholder meeting as per the GS guidelines. Same will be conducted once the covid-19 situation eases.				
For reference as per the latest rule update from the gold standard "Covid-19 Interim measures" dated 18.12.2020 Gold standard has relaxed conducting physical stakeholder consultation until the covid-19 situation eases.				
Documentation provided by project participant				
NA				
DOE assessment				Date: 24/09/2021
CL 11 is into FAR 01.				

Table 2. CARs from this validation

CAR ID	01	Section no.	A.1	Date: 20/08/2021
Description of CAR				
Section A.1 of PDD – The Project Participant has presented the commissioning dates details in the table. It is noted that 6 Nos. of WTGs were commissioned on 31/12/2021 (SI No. 12 in the table). The Validation Team seeks documentary support for the claim made in the PDD and description about the precision of the date mentioned (which is future dated).				
Project participant response				Date: 15/09/2021
It is a typographic error. Last phase of 06 Nos of WTGs are commissioned on 31/03/2021 which can be verified from the commissioning certificate provided to DOE. Same has been corrected in the revised PDD.				
Documentation provided by project participant				
Revised PDD.				

DOE assessment	Date: 24/09/2021
The PP has revised the actual date of commissioning whilst 31/03/2021 in section A.1 of the revised PDD, the same is checked and actual date is verified from the commissioning certificate dated 31/03/2021 with Ref No: SECI/Wind Tranche-3/COD-XII/AEPL-P1 issued by Solar Energy Corporation of India Ltd (SECI). Hence CAR 01 is closed.	

CAR ID	02	Section no.	E.2	Date: 20/08/2021
Description of CAR				
The validation team is not able to conclude from the descriptions provided in the PDD whether 'Continuous Input and Grievance Expression Process Book' is maintained at site or any agreed upon location / office.				
Project participant response				Date: 15/09/2021
Due to Covid-19 pandemic, Stakeholder consultation is not yet conducted will be conducted later. However, as per the GS4GG guidelines, PP is following the mandatory continuous input & Grievance methods at the project site. PP has placed a grievance register onsite in where the stakeholder can put down his/her complain and the same if found genuine will be addressed immediately.				
Same has been updated in the revised PDD.				
Documentation provided by project participant				
Revised PDD.				
DOE assessment				Date: 24/09/2021
The clarification provided and corrections appended in section E.2 the revised PDD is acceptable to the Validation Team, hence CAR 02 is closed.				

CAR ID	03	Section no.		Date: 20/08/2021
Description of CAR				
Source of few parameters used in Financial analysis while computing Equity IRR is not available.				
Project participant response				Date: 15/09/2021
Reference sources have been provided for all the parameters used for computing the Equity IRR in the revised IRR sheet.				
Documentation provided by project participant				
Revised IRR sheet				
DOE assessment				Date: 24/09/2021
References to IT rates and MAT in the IRR sheet have been made available and DPR of May 2018. Hence CAR 03 is closed.				

CAR ID	04	Section no.		Date: 20/08/2021
Description of CAR				
PP to provide details on provisions made to curtail Child Labour & ensuring Gender Equality.				
Project participant response				Date: 15/09/2021
Provisions has been made in the HR policy manual to follow the regulations on employing the child labour and ensuring the gender equality in the project operations. However since the project is located in the remote and hilly area no women employee has been employed at the project site.				
Documentation provided by project participant				
HR policy has been submitted.				
DOE assessment				Date: 24/09/2021
The clarification provided by the PP is acceptable to the Validation Team and Employee Handbook has put forth the guidelines ensuring Gender Equality which has been verified: "Alfanar does not discriminate based on race, color, national origin, sex, disability or age in its programs, activities, compensation, terms, conditions, or privileges of employment".				
Curtailing Child Labour has been described.				
Hence CAR 04 is closed.				

Table 3. FAR from this validation

FAR ID	01	Section no.	NA	Date: 24/09/2021
Description of FAR				
The PP due to prevailing pandemic Covid-19 and constraints caused to Nation Wide lockdown has not been able to perform the Stakeholder Consultation, “Covid-19 Interim measures” (Version 4, Dt.,17.05.2021) relaxation has been allowed on conducting physical stakeholder consultation until the covid-19 situation eases. As per paragraph 2.1.1 ‘Alternative Measures’ - The project developer may postpone physical stakeholder consultation meetings and the Stakeholder Feedback Round (SFR) for Gold Standard project/POA/VPAs until the COVID-19 situation eases.				
DOE assessment				Date:24/09/2021
The Validation Team would request the PP to submit the documentation of the physical stakeholder consultation and SFR to the VVB who performs the first verification.				

Appendix 2. Competence of team members and technical reviewers

Certificate of Competence						
Name	☒ Mr. ☐ Ms.	Ma Paa Puratchikkanal				
Qualification Procedure	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.					
Appointed to work as:						
	CDM Validator/Verifier	Team Leader	Team Member	Technical Expert	Technical Reviewer	Financial Expert
Appointed	Yes	Yes	Yes	Yes	Yes	No
Appointed Date	27-04-2021					
Authorized to work as Technical Expert for:						
Authorized Technical Area	Sectoral Scope		TA Code	Technical Area within the scope		
	Energy industries (renewable - / non-renewable sources)		1.1	Thermal energy generation		
	Energy industries (renewable - / non-renewable sources)		1.2	Renewables		
	Energy demand		3.1	Energy demand		
	Construction		6.1	Construction		
	Waste handling and disposal		13.1	Solid waste and wastewater		
	Waste handling and disposal		13.2	Manure		
Agriculture		15.1	Agriculture			
Authorized to work as Local Expert for:						
Country/Countries	India					
Compliance check by: Anand S. R.						

Certificate of Competence						
Name	☒ Mr. ☐ Ms.	Chetan Swaroop Sharma				
Qualification Procedure	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.					
Appointed to work as:						
	CDM Validator/Verifier	Team Leader	Team Member	Technical Expert	Technical Reviewer	Financial Expert
Appointed	Yes	Yes	Yes	Yes	Yes	No
Appointed Date	27-04-2021					
Authorized to work as Technical Expert for:						
Authorized Technical Area	Sectoral Scope		TA Code	Technical Area within the scope		
	Energy industries (renewable - / non-renewable sources)		1.1	Thermal energy generation		
	Energy industries (renewable - / non-renewable sources)		1.2	Renewables		
	Energy distribution		2.1	Energy distribution		
	Energy demand		3.1	Energy demand		
	Waste handling and disposal		13.1	Solid waste and wastewater		
	Waste handling and disposal		13.2	Manure		
Authorized to work as Local Expert for:						
Country/Countries	India					
Compliance check by: Anand S. R.						