



**Validation report for
GS4GG project activities
(Gold Standard for the Global Goals)**

BASIC INFORMATION

Title of the project activity	Sapphire 49.5 MW Wind Farm Project	
GS Reference Number	GS11307	
Version number of the validation report	3.0	
Completion date of the validation report	17/03/2022	
Version number of the PDD to which this report applies	3.2	
Project developer	Sapphire Wind Power Co. Ltd.	
Project Representative	UPM Umwelt-Projekt-Management GmbH	
Project Participants and any communities involved	Sapphire Wind Power Co. Ltd. UPM Umwelt-Projekt-Management GmbH	
Host Party	Islamic Republic of Pakistan	
Applied methodologies and version number	ACM0002 "Grid-connected electricity generation from renewable sources" (Version 20.0)	
Mandatory sectoral scopes linked to the applied methodologies	1	
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	
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A	
Project Cycle	☐ Regular ☒ Retroactive	
SDG Impacts	Affordable and Clean Energy (SDG 7)	Net amount of electricity supplied to grid: 137,500 MWh

	Decent Work and Economic Growth (SDG 8)	Number of jobs created: 20
	Climate Action (SDG 13)	61,998 tCO ₂ e/year
Name of the VVB	VVB Name: Shenzhen CTI International Certification Co., Ltd (CTI)	
Name, position and signature of the approver of the validation report	 Li Ziqi Technical Reviewer/Approver	

SECTION A. Executive summary

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The project activity is utilizing wind power for electricity generation, which is delivered to Water and Power Development Authority (WAPDA) Grid. The project activity involves installation of 33 sets wind turbines with unit capacity of 1.6MW and the total installation capacity is 52.8MW. The electricity generated by the project is exported to WAPDA grid after transmitted to the transformers.

The project activity uses renewable wind energy to generate electricity displacing fossil fuel dominated electricity generation in WAPDA grid and thus resulting in greenhouse gases emission reductions and provides the affordable and clean Energy in Pakistan.

The estimated emission reduction from the project is 61,998 tCO₂e per year during the first renewable 5-year crediting period.

Scope of Validation

The scope of the services provided by the Shenzhen CTI International Certification Co., Ltd for the project is to perform validation of the project. The scope of validation is to assess the claims and assumptions made in the project design document (PDD) against the GS4GG criteria, CDM applied methodology and other relevant rules and requirements established for GS4GG project activities.

The project applied under Gold Standard for the Global Goals and the Gold Standard Reference No. is 11307.

The objective of this validation is the review by an independent entity whether the project is compliant with the applicable sections of:

- the Gold Standard for the Global Goals Principles and Requirements/39/,
- the Gold Standard for the Global Goals Safeguarding Principles & Requirements/40/,
- the Gold Standard for the Global Goals Renewable Energy Activity Requirements/41/,
- GS4GG GHG Emissions Reduction & Sequestration Product Requirements/43/
- the Gold Standard for the Global Goals Stakeholder Consultation and Engagement Requirements/42/,
- the applied CDM Methodology ACM0002 "ACM0002 Grid-connected electricity generation from renewable sources " (Version 20.0)/34/,
- Any other decision taken by the Technical Advisory Committee of GS (GS-TAC);
- other relevant rules, including the host country legislation

As per the requirements of the Gold Standard for the Global Goals Principles and Requirements/39/, the validation is based on

- the GS4GG PDD/1/,
- the Emission Reduction Calculation Spreadsheet/2/,
- the Stakeholder Consultation Report (SCR)/3/,
- further supporting documents made available to the validator as well as
- information collected through performing on-site interviews.

Furthermore, publicly available information, such as the host country legislation, was considered as far as available and required.

Validation Process and Methodology

The validation has been performed as described in the Gold Standard for the Global Goals Principles and Requirements/39/ as below process,

- a) Desk review of GS PDD (version 1 dated 29/07/2021)/1/ and the relevant documents submitted by the project developer in context of GS4GG criteria
- b) Remote validation (27/09/2021) conducting video conference call, checking the photo and video of the project site and equipment, interview with the representatives of the project developer,
- c) Issuance of draft validation report, reporting audit findings with respect to clarifications (CLs) and non-conformities(CARs)
- d) Resolution of the raised CARs and CLs, close all findings

- e) Issuance of the final validation report
- f) Independent technical review of the final validation report and final/revised documentation (e.g., PDD, corresponding ER sheet and evidences)
- g) Reporting and closure of TR comments/findings and final approval for the decision made
- h) Issuance of final validation report to contracted PD (or authorized representatives) and submission of request for design certification, as appropriate.

Conclusion

CTI has performed the validation of the GS PA “Sapphire 49.5 MW Wind Farm Project” having GS Ref. Number GS11307. The actual project design are consistent with the PDD which will create estimated emission reduction from the project is 309,990 tCO₂e during the first renewable 5-year crediting period.

In CTI's opinion, PDD, supporting documentation and subsequent follow up actions have provided with sufficient evidence to determine the fulfilment of stated GS4GG criteria. CTI confirmed that each SDG Impacts were estimated correctly on the basis of the approved ACM0002 “Grid-connected electricity generation from renewable sources ” (Version 20.0) and the Global Goals Principles and Requirements. Therefore, this is being submitted for request for design certification, as per GS procedures as applicable.

SECTION B. Validation team, technical reviewer and approver**B.1. Validation team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	Remote validation	Interviews	Validation findings
1.	Team Leader & Validator	IR	Wang	Guolian	CTI	√	√	√	√
2.	Local Expert	EI	Arif ¹	Alam	Axis Environment Services		√	√	

B.2. Technical reviewer and approver of the validation report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer/Approver	IR	Li	Ziqi	CTI

¹ Mr. Arif Alam is CEO of Axis Environment Services since 2006, acts as a consulting and coordinating company with its office located in Karachi, Pakistan to develop carbon projects in Pakistan. He has rich experiences from initial identification of carbon project to feasibility studies, validation and registration support, assistance in execution and monitoring, negotiation and commercialization of carbon credits from projects. He has participated the validation and verification of GS3946 and GS3511 projects. Mr. Arif Alam holds a B.A. in Economics. He is good at English, Danish and Urdu language. Hence, he is competent as the local expert.

SECTION C. Means of validation

C.1. Desk review

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Desk review of all documents provided by PD and publicly available documents relevant for the validation including Key Project Information & project Design Document (PDD)/1/, Stakeholder Consultation Report (SCR)/3/, applied methodology and applicable tools in particular attention to the project design, baseline, project boundary, additionality and monitoring plan and other relevant supporting documents was conducted by CTI.

The main documents are listed below:

- (i) the GS4GG PDD Version 1 dated 29/07/2021/1/,
- (ii) the emission reduction calculation spreadsheet related to this monitoring period Version 01 dated 29/07/2021/2/,

Other supporting documents, such as publicly available information and background information were also reviewed.

The list of documents reviewed during the validation is provided under Appendix 3 of this report.

C.2. Remote validation

Duration of remote validation ² : 27/09/2021				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening meeting	N/A	27/09/2021	Guolian Wang Arif Alam
2	Interview with PP Representative and Operation Staff via conference call meeting APP and check project site via videos and photos	N/A	27/09/2021	Guolian Wang Arif Alam
3	Documents check as per doc's list in Appendix 3.	N/A	27/09/2021	Guolian Wang Arif Alam
4	Finding Summary	N/A	27/09/2021	Guolian Wang Arif Alam
5	Close Meeting ➤ Introduce following procedures after remote validation	N/A	27/09/2021	Guolian Wang Arif Alam

According to the section 4.1.1 b of COVID 19: INTERIM MEASURES/37/ issued by GS, if a site visit can't be postponed due to significant impact of delaying the site visit on project developer due to commitment as per GS-VERs delivery agreement, VVB can replace mandatory on-site visits with remote audits.

So CTI replace mandatory site visit validation with remote audits. The site visit was not conducted by the validation team, and the below alternatives have been conducted by the validation team as remote audit in line with the requirements from COVID 19: INTERIM MEASURES/37/.

1. CTI used video conference call conducting the opening meeting.
2. CTI used video conference call checking the project site, main equipment and project implementation, monitoring equipment, etc. via videos and photos/32/.
3. CTI interviewed representatives of project owner and staffs, project owner introduced the operation of the project and monitoring system.
4. CTI discussed the document evidence with project owner based on desk review results.
5. The team discussed findings and conducted close meeting via phone call with PD and project owner.

In conclusion, although the site visit was not conducted by CTI, through interview call and checking the related videos and photos/32/, the requested information for the validation is got by CTI successfully and can be assessed by CTI to finish the validation.

² CTI use remote validation method to replace on-site inspection which has been demonstrate in the table below.

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Shabbir	Aqsa	Sapphire Wind Power Co. Ltd. / Assistant Executive	27/09/2021	- General aspects of the project - Changes since validation / previous verifications in CDM scheme - Project Design - Project started construction time - Project started operation time - Project Equipment - Project Technical process - Equipment Technical parameters	Guolian Wang Arif Alam
2.	Naeem	Fahd	Sapphire Wind Power Co. Ltd. / Assistant Manager	27/09/2021	- Local Wind sources - Estimated electricity generation - National Grid composition	Guolian Wang Arif Alam
3.	Siddiqui	Jawad	Sapphire Wind Power Co. Ltd. / General Manager	27/09/2021	- Grid connection approach - Energy Purchase Agreement - Project implementation status - Quality management system - Involved personnel and responsibilities - Training and practice of the monitoring personnel - Monitoring plan - Procedural aspects of the validation - Environmental aspects	Guolian Wang Arif Alam
4.	Chaangh	Abdul Khaliq	Local stakeholders	06/10/2021	- General information - if know the project	Guolian Wang Arif Alam
5.	Chaangh	Muhammad Raheem		06/10/2021	- if support the project	
6.	Chaangh	Shahnawaz		06/10/2021	- project impacts to life	
7.	Jakhro	Lal Khan		06/10/2021	- input/grievance method	
8.	Jakhro	Jadio		06/10/2021	- comemnts to the project	
9.	Guo	Gaii	UPM Umwelt-Projekt-Management GmbH / Consultant	27/09/2021	- Monitoring data management - Monitoring data collection - Data uncertainty and residual risks - Monitoring report preparing - GHG emission reduction calculation	Guolian Wang Arif Alam

C.4. Sampling approach

N/A

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

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Key project information assessment	-	CAR 01	-
Description of project activity	CL 01 CL 02 CL 03	CAR 02	-

Application and selection of methodologies and standardized baselines	-	-	-
- Selected approved methodology(ies) and methodological tools	-	-	-
- Application of methodology(ies) and tools	CL 04		-
- Project boundary, sources and GHGs	-	CAR 03	-
- Baseline scenario	-	-	-
- Demonstration of additionality	-	-	-
- Estimation SDG impacts	-	CAR 04 CAR 05 CAR 06	-
- Monitoring plan	-	CAR 07 CAR 08 CAR 09	-
Start date, crediting period type and duration	-	-	-
Safeguarding principles assessment	CL 05 CL 06	-	-
Local stakeholder consultation assessment	CL 07		-
Others (please specify) (Evidences)	-	-	2
Total	7	9	2

SECTION D. Validation findings

D.1. Key Project Information assessment

Means of validation	The project is utilizing wind power for electricity generation, which is delivered to Water and Power Development Authority (WAPDA) Grid. The project activity involves installation of 33 sets wind turbines with unit capacity of 1.6MW and the total installation capacity is 52.8MW. The electricity generated by the project is exported to WAPDA grid after transmitted to the transformers, which has been verified as actual by remote validation and checking the latest approved CDM PDD/4/. The activity requirements applied is Renewable Energy Activities. The project has been registered under CDM on 14/11/2012 and the UNFCCC Reference No. is 8163. The project has the installed capacity changed from 49.5MW to 52.8MW and the post-registration change (PRC) has been approved on 10/04/2017. This has been confirmed by checking the dedicated UNFCCC website of the project/46/. The installed capacity of the project is 52.8MW, which is more than 15MW. As per section 5.1.2 and 5.1.4 of GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0)/43/, the project is a large-scale GS CER project. The proposed project is a retroactive project with the start date of 27/08/2011 and the stakeholder consultation physical meeting was conducted on 20/09/2021. The project applied CDM approved methodology ACM0002 "Grid-connected electricity generation from renewable sources" (Version 20.0). Product Requirements applied is GHG Emissions Reduction & Sequestration.
Findings	CAR 01 was raised and resolved. Refer to Appendix 4 in this report for detail assessment.
Conclusion	The validation team confirms that the process undertaken to describe the key information of the project is described above. The information of the project is justified from the terms mentioned in Key project information form in PDD which has been assessed by the validation team, and CTI confirms that the GS project activity qualifies the eligibility criteria for GS4GG project activities.

D.2. Description of project activity

Means of validation	A draft PDD was submitted to the validation team by the project developers prior to the start of the validation activities. It is checked that the appropriate form has been used for compiling the PDD as per the Gold Standard for Global Goals Key Project Information & Project Design Document (PDD) Template version 1.2 on 14/10/2020/38/. Further every section has been checked against the GS4GG Principles & Requirements/39/ as below, <i>i. Purpose and general description of project</i> Via remote validation, CTI confirmed that the project is a newly built grid connected wind power project with a total installed capacity of 52.8 MW which is confirmed as in line with the latest approved CDM PDD/4/. The project has been registered under CDM on 14/11/2012 and the UNFCCC Reference No. is 8163. The project has the installed capacity changed from 49.5MW to 52.8MW and the post-registration change (PRC) has been approved on 10/04/2017. This has been confirmed by checking the dedicated UNFCCC website of the project/46/. The project activity consists of 33 sets of 1,600 kW wind turbine with total capacity of the project is 52.8 MW and the annual net electricity generation is estimated to be 137,500 MWh, according to the nominal power of installed wind turbine generators which has been confirmed by checking the nameplate during remote validation/32/ and Equipment technical specification/17/. The operation of the project displaces equivalent power generated from WAPDA grid which is mainly dominated by fossil fuel fired power plants.
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The project started construction on 28/08/2014 which is confirmed as correct by checking the Letter of Notice to proceed/18/ and was commissioned on 22/11/2015, which has been confirmed by checking daily operational log/21/ against the Certificate of Commissioning of Complex to the project/19/.

The estimated emission reduction from the project is 61,998 tCO₂e/2/ per year during the first renewable 5-year crediting period.

ii. Eligibility of the project under GS

The project activity meets the eligibility criteria of the GS4GG as per section 3.1.1 of GS4GG Principles & Requirements/39/, section 3 of GS4GG Renewable Energy Activity Requirements (Version 1.4)/41/ and section 2 of GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0)/43/ as below demonstration,

Requirements as per GS4GG Principles & Requirements	Assessment for this project
- Types of Project Eligibility Criteria in GS4GG Principles & Requirements (Version 1.2) Section 3.1.1 (a) Eligible projects shall include physical action/implementation on the ground. Pre-identified eligible project types are identified in the Eligibility Principles and Requirements section.	Via remote validation and check the latest approved CDM PDD/4/, CTI confirmed that the project includes construction and operation of a wind power plant to generate renewable electricity to supply the national grid. Hence, the emission reduction credits will be created by the use of wind energy instead of the combustion of fossil fuel in the grid. Thus, the project is eligible under GS4GG. Hence, the project satisfied this eligibility requirement.
- Location of Project: Eligibility Criteria in GS4GG Principles & Requirements (Version 1.2) Section 3.1.1 (b) Projects may be located in any part of the world.	Via checking the latest approved CDM PDD/4/ and remote validation, CTI confirmed that the project is located in Jhimpir, Thatta District, Sindh Province, Pakistan which is an eligible country. Hence, the project satisfied this eligibility requirement.
- Project Area, Project Boundary and Scale: Eligibility Criteria in GS4GG Principles & Requirements (Version 1.2) Section 3.1.1 (c) The Project Area and Project Boundary shall be defined. Projects may be developed at any scale although certain rules, requirements and limitations may apply under specific Activity Requirements, Impact Quantification Methodologies and Products Requirements. In order to avoid double counting the Project shall not be included in any other voluntary or compliance standards programme unless approved by Gold Standard (for	Project boundary has been defined in the PDD according to the applied methodology ACM0002/34/ as the geographical extent of the project boundary includes the Sapphire wind power plant and all power plants connected physically to the WAPDA electricity grid which is verified by checking the latest approved CDM PDD/4/ and confirmed by remote validation. The project has been registered under CDM on 14/11/2012 and the UNFCCC Reference No. is 8163. Due to the project has unique identified GPS coordinates and unique identification code, hence, it can't be counted in any other voluntary market or emission reduction mechanism which has been checked by searching these schemes including VCS/49/, RECs, IREC/50/ etc.

	example through dual certification). Also, if the Project Area overlaps with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature, the project shall demonstrate that there is no double counting of impacts at design and performance certification (for example use of similar technology or practices through which the potential arises for double counting or misestimation of impacts amongst projects).	Finally, via checking the Declaration of No Double Counting Statement/25/ and Declaration of not involved in other GHG scheme/26/, CTI confirmed that the emission reductions will not be double counted. In conclusion, CTI verified that Project Developer has provided Gold Standard with satisfactory justification that no double counting of emission reductions occur. Hence, the project satisfied this eligibility requirement.
	- Host Country Requirements Eligibility Criteria in GS4GG Principles & Requirements (Version 1.2) Section 3.1.1 (d) Projects shall be in compliance with applicable Host Country's legal, environmental, ecological and social regulations.	Via checking the latest approved CDM PDD/4/ and remote validation, CTI confirmed that the project is located in Pakistan. Via checking the National regulation Policy for Development of Renewable Energy for Power Generation, 2006, which is issued by Alternative Energy Development Board (AEDB), Government of Pakistan/44/, CTI confirmed that the project utilize wind source for electricity power generation supplied to the grid is recommended to optimize the renewable energy structure, and the Initial Environment Examination (IEE) report/12/ of the project has been conducted in line with in compliance with Pakistan Environmental Protection Act (PEPA), 1997 and submitted to EPA (Environmental Protection Agency) on 20/06/2009 and approved on 06/08/2009/13/hence is in compliance with Pakistani legal, environmental, ecological and social regulations. Hence, the project satisfied this eligibility requirement.
	- Contact Details Eligibility Criteria in GS4GG Principles & Requirements (Version 1.2) Section 3.1.1 (e) As part of the Project Documentation the Project Developer shall provide (i) name and (ii) contact details of all Project Participants; AND in case of an organization (iii) the legal registration details and (iv) documentation by the governing jurisdiction that proves that the entity is in good standing (defined as being a legal or other appropriate entity registered in or allowed to operate within the required jurisdiction and with no evidence of insolvency or	The PD's name, contact details and legal registration details have been checked in the Appendix 2 of the PDD which verified as correct by comparing the business license of PP/8/. Furthermore, through checking business license of PP/8/, CTI confirmed that PPs are in good standing and legally operated and allowed to operate within the required jurisdiction, the financial health is verified. Hence, the project satisfied this eligibility requirement.

	legal/criminal notices placed against it or any of its Directors). Gold Standard retains the right (at its own discretion) to refuse use of the Standard where reputational concerns are highlighted.	
	- Legal Ownership Eligibility Criteria in GS4GG Principles & Requirements (Version 1.2) Section 3.1.1 (f) Full and uncontested legal ownership of any Products that are generated under Gold Standard Certification, (for example carbon credits) shall be demonstrated. Where such ownership is transferred from project beneficiaries this must be demonstrated transparently and with full, prior and informed consent (FPIC). Note that for certain Project types there is a requirement for full and uncontested legal land title/tenure to be demonstrated. These are contained within specific Activity or Product Requirements. All projects shall immediately report to Gold Standard any land title/tenure disputes arising.	Via checking the latest approved CDM PDD/4/ and the EPC contract/14/ and Letter of Approval of Technical Feasibility Study/11/, CTI confirmed that the project owner Sapphire Wind Power Co. Ltd has full legal right to control and operate the project activity. Hence, the project satisfied this eligibility requirement.
	- Other Rights Eligibility Criteria in GS4GG Principles & Requirements (Version 1.2) Section 3.1.1 (g) As well as legal title and ownership, the Project Developer shall also demonstrate where required uncontested legal rights and/or permissions concerning changes in use of other resources required to service the Project (for example, access rights, water rights etc.). Any known disputes or contested rights must be declared immediately to Gold Standard by the Project Developer and resolved prior to further project implementation in affected areas.	Via checking the latest approved CDM PDD/4/ and the EPC contract/14/ and Letter of Approval of Technical Feasibility Study/11/, CTI confirmed that the project owner Sapphire Wind Power Co. Ltd has full legal right to control and operate the project activity. Hence, the project satisfied this eligibility requirement.
	- Official Development Assistance (ODA) Declaration Eligibility Criteria in GS4GG Principles & Requirements (Version 1.2) Section 3.1.1 (h) All Project Developers applying for project	Via checking the ODA declaration signed by the project developer/27/, it is verified that no ODA is provided under the condition that the credits generated by the project will be transferred, either directly or indirectly, to the donor country providing ODA support.

	activities located in a country named by the OECD Development Assistance Committee's ODA recipient list and seeking Gold Standard Certification for carbon credits shall declare the Official Development Assistance (ODA) support. The Project Developer shall follow the GHG Emissions Reduction & Sequestration Product Requirements and submit the declaration at the time of Design Certification.	
	Requirements as per GS4GG Renewable Energy Activity Requirements (version 1.4) - Types of Project Eligibility Criteria in GS4GG Renewable Energy Activity Requirements (Version 1.4) Section 3.1.1 Eligible projects shall include physical action/implementation on the ground. Pre-identified eligible project types are mentioned in the paragraph 2. 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 must be located in either a; a. Least Developed Country (LDC), Small Island Developing State (SIDS) or a Land Locked Developing Country (LLDC) or b. Low Income and Low Middle-income country where the penetration level of the proposed Renewable Energy Technology type is less than 5% of the total grid installed capacity, at the time of the first submission to preliminary review	Assessment for this project Via remote validation and check the latest approved CDM PDD/4/, CTI confirmed that the project includes construction and operation of a wind power plant to generate renewable electricity to supply the national grid. Hence, the project generate and deliver energy services (electricity) from non-fossil fuel and renewable energy sources. And the project comprise of renewable energy generation units of wind, and supply energy to a national grid. As per the para.2 of the Renewable Energy Activity Requirements (version 1.4), due to the project seeks Gold Standard labels for Certified Emission Reductions (GS CER), hence the PP justified that the host country is a Low Middle-income country. Via checking the public website of world bank/51/ as provided in the Renewable Energy Activity Requirements (version 1.4), it is verified that Pakistan is a Low Middle-income country. Furthermore, via cheking the Pakistan Energy Yearbook 2019/22/ which is verified as the latest available version at the time of the first submission to preliminary review, it is confirmed that the ratio of installed capacity of the wind power (1,049MW) to the total grid installed capacity (35,114MW) is 2.98%, hence, it is verified that penetration level of the proposed Renewable Energy Technology type is less than 5%. Hence, the project satisfied this eligibility requirement.
	- Location of Project:	Via checking the latest approved CDM PDD/4/ and remote validation, CTI confirmed that the wind project is located

	Eligibility Criteria in GS4GG Renewable Energy Activity Requirements (Version 1.4) Section 3.2.1 Eligible projects may be located in any part of the world. Hydropower projects shall not be located in High Conservation Values (HCVs) areas. Please refer to Annex A for further information on hydropower projects	in Jhimpir, Thatta District, Sindh Province, Pakistan which is an eligible country. Hence, the project satisfied this eligibility requirement.
	- Project Area, Project Boundary and Scale: Eligibility Criteria in GS4GG Renewable Energy Activity Requirements (Version 1.4) Section 3.3.1 Project Area and Boundary shall be defined in line with the applicable Methodologies and Product Requirements. The definition of scale refer to 3.3.2.	Via checking the latest approved CDM PDD/4/ and remote validation, it is confirmed that the total installed capacity is 52.8MW which is verified by checking the latest approved CDM PDD/4/ and Equipment technical specification/17/, hence is more than 15MW. Then the project is a large-scale GS CER project.
	- Suppressed demand Eligibility Criteria in GS4GG Renewable Energy Activity Requirements (Version 1.4) Section 3.4.1 Certain Impact Quantification methodologies allow projects to account for a Suppressed Demand scenario when establishing a baseline. In such cases, the application of the Suppressed Demand baseline is limited to small scale and microscale projects	The project is a large-scale GS CER project.
	- Stacking Eligibility Criteria in GS4GG Renewable Energy Activity Requirements (Version 1.4) Section 3.5.1 A single Renewable Energy project may potentially pursue any number and combination of Certified Impact Statements or Products. However, certain Product Requirements, which supersede the generic requirements stated in this document can set restrictions on co-issuance of Certified Impact statements or Products. For instance, GS VERs or GS CERs with REC labels cannot be claimed for the same MWh 3.5.2 Where a Suppressed Demand baseline is applied, it is not allowed to	The project is only seeking for GS labelling on CERs.

	'stack' Gold Standard Certified Impact Statements or Products as the definition of the baseline may be contradictory.	
	Requirements as per GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0)	Assessment for this project
	- Scope and applicability Eligibility Criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) Section 1.1.1 This document represents the Product Requirements for the issuance of: a. Gold Standard Verified Emission Reductions (GSVERs) b. Gold Standard labels for Certified Emission Reductions (GSCERs) c. Gold Standard Planned Emissions Reductions (PERs) for Land Use & Forests	The project is seeking Gold Standard labels for Certified Emission Reductions (GSCERs).
	- General Eligibility Criteria Eligibility Criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) Section 2.1.1 Unless otherwise stated elsewhere in the Principles & Requirements, Projects involving a mix of eligible and ineligible components can only claim credits for the Emission Reductions and/or sequestration associated with the eligible component of the project.	Project does not involve a mix of eligible and ineligible components of Principles & Requirements as above assessment.
	- Location of Project: Eligibility Criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) For GSCER project: Section 3.2.1 CDM Projects shall be located in a Non-Annex I country, as defined by the UNFCCC.	Via checking the latest approved CDM PDD/4/ and the UNFCCC website/48/, CTI confirmed that the project is located in Pakistan which is a Non-Annex I country.
	- Eligible GHG: Eligibility Criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) Section 4.1.1 Only Carbon Dioxide (CO₂), Methane (CH₄) and/or Nitrous	Via checking the latest approved CDM PDD/4/, applied CDM methodology/34/ and remote validation, CTI confirmed that the project reduce the GHG emissions of Carbon Dioxide (CO ₂), thus is eligible for GSCERs.

	Oxide (N ₂ O) are eligible for GSVERs or GSCERs, provided Projects comply with all GS4GG Requirements and eligibility criteria.	
	- Type of project Eligibility Criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) Section 5.1.1 The Following Project types are eligible for issuance of GSVERs or GSCERs a. Renewable Energy Supply b. End-Use Energy Efficiency Improvement c. Waste Handling & Disposal d. Land Use and Forests	Via remote validation and check the latest approved CDM PDD/4/, CTI confirmed that the project includes construction and operation of a wind power plant to generate renewable electricity to supply the national grid belongs to (a).
	- Official Development Assistance (ODA) Declaration Eligibility Criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) Section 6.1.1 and 6.1.2 Projects are ineligible for carbon crediting under Gold Standard if the ODA assistance is provided to the project under the condition that the credits generated by the Project will be transferred, either directly or indirectly, to the donor country providing ODA support. Project Developer submitting a Project located in a country named by the OECD Development Assistance Committee's ODA recipient list shall sign and submit the ODA Declaration.	Via checking the ODA declaration signed by the project developer/27/, it is verified that no ODA is provided under the condition that the credits generated by the project will be transferred, either directly or indirectly, to the donor country providing ODA support.
	- Financial Additionality & Ongoing Financial Need Eligibility Criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) For GSCER projects Section 7.2.1 Gold Standard CDM and JI Projects are not required to carry out additional assessment for demonstration of additionality over	No additional assessment for demonstration of additionality is applicable to this GS CDM project. And this is not a Certification Renewal.

	and above what has been done for registration/determination with the CDM EB/JISC unless the Project falls into a category that is deemed non-Additional in an applicable GS4GG Activity Requirement. In such cases the relevant Activity Requirement shall take precedence. 7.2.2 Gold Standard CDM and JI Projects shall demonstrate Ongoing Financial Need at Certification Renewal following latest version of Principles & Requirements available at the time of renewal of their crediting period, unless otherwise stated in the relevant Activity Requirements.	
	- Eligible Methodologies Eligibility Criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) Section 8.1.1 All Projects shall a. confirm to the relevant Activity Requirements and Gold Standard Approved Methodologies, including eligible CDM Methodologies. b. also meet the additional GS4GG methodology eligibility requirements, where applicable. Refer to eligible CDM Methodologies.	Via check the latest approved CDM PDD/4/, it is confirmed that the project is applicable to eligible CDM Methodology ACM0002. Refer to below section for assessment of the applicability to the applied CDM methodology.
	- Project Scale Eligibility Criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) For GSCER projects Section 9.2.1 Gold Standard CDM or JI Projects may be 'large scale' or 'small scale' Projects. All Project exceeding the small scale thresholds are defined as large scale. The applicability of methodologies is defined in accordance with CDM project standard for project activities	Via checking the latest approved CDM PDD/4/ and remote validation, it is confirmed that the total installed capacity is 52.8MW which is verified by checking the latest approved CDM PDD/4/ and Equipment technical specification/17/, hence is more than 15MW. Then the project is a large-scale GS CER project which is in line with the CDM project standard for project activities/36/.
	The validation team therefore concluded project compliance with eligibility requirements in GS4GG Principles & Requirements document, version 1.2/39/, GS4GG GHG Emissions Reduction & Sequestration Product Requirements, version 2.0/43/ and GS4GG Renewable Energy Activity Requirements, version 1.4/41/, hence the project is eligible under GS4GG. iii. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project	

Via checking the business license/8/ of PD (Sapphire Wind Power Co. Ltd.), the EPC contract/14/ and Letter of Approval of Technical Feasibility Study/11/, it is verified that project owner invested in purchasing the equipment and construction of the project, thus project owner has full and uncontested legal ownership of the emission reductions that are generated under this Gold Standard project, and legal rights to alter use of resources required to service the project for ownership of ERs.

In conclusion, CTI verified that the project does not involve any activity that causes alteration of any resource, or contested legal rights and other disputes, therefore the need for acquiring any specific legal right is not applicable.

iv. Location of project

The project is located in northeast of Jhimpir City, Sindh Province, Pakistan.

Details of the project location are given in table D-1 below:

Table D-1: Project Location

No.	Project Location		
Host Country	Pakistan		
Region:	Sindh Province		
Project location address:	Northeast of Jhimpir City		
Geographical Coordinates of Wind Farm Center	No.	Longitude	Latitude
	1	67°51'48.33" E	25°07'18.40" N
	2	67°51'48.03" E	25°07'10.59" N
	3	67°54'40.46" E	25°06'20.95" N
	4	67°56'01.05" E	25°05'35.46" N
	5	67°57'53.13" E	25°05'03.55" N
	6	67°58'08.95" E	25°05'28.90" N

The project location has been clearly provided in section A.2 of the PDD including the geo-coordinate of each wind turbine generator, which has been verified by remote validation with Google Earth Map and the detailed coordinates have been provided respectively which have also been verified by GPS APP and the information is correct.

v. Technologies and/or measures

By means of an in-depth review of the PDD and the checks carried out during the remote validation, an assessment has been carried out whether the equipment has been installed and if the project has been implemented in line with the PDD and whether all physical features of the project are in place. The following has been checked: implemented technology and project equipment.

Further CTI has checked if relevant technical equipment of the project activity has been changed or modified in PDD/3/ since the CDM registration.

The validator has performed a remote validation and conducted interview with representatives from PD, in addition checked all the provided evidence as listed in Appendix 3, CTI found that the project has been put into operation normally and CTI found that the implementation of the project activity is in accordance with the latest approved CDM PDD/4/ and the GS PDD/3/.

The project started construction on 28/08/2014 which is confirmed as correct by checking the Letter of Notice to proceed/18/ and was commissioned on 22/11/2015, which has been confirmed by checking daily operational log/21/ against the Certificate of Commissioning of Complex to the project/19/.

PP has provided detailed specifications in the PDD section A.3. Validation team herewith confirms that the specifications of main equipment are the same as provided in the PDD/3/ and checking the nameplates photo of equipment/32/ and Equipment technical specification/17/ and consistent with the latest approved CDM PDD/4/.

Basic technical details of the project are summarized in below table.

Parameter	Unit	Value
Type	-	GE 1.6xle 50Hz WTG
Rated power	MW	1.6
Diameter of Rotor	m	82.5
Number of blades	-	3
Swept area	m ²	5,346
Rotor speed range	rpm	9 to 18
Rotational direction	-	Clockwise looking downwind
Maximum tip speed	m/s	77.2
Orientation	-	Upwind
Speed regulation	-	Pitch control
Manufacturer	-	GE
Lifetime	years	20

This is the GS validation for a registered CDM project and the validation team herewith confirms that the project implementation is consistent as mentioned in the latest approved CDM PDD/4/.

vi. Scale of the project

According to the section 5.1.2 and 5.1.4 of GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0)/43/, via checking the installed capacity of the wind farm from latest approved CDM PDD/4/, it is verified that the total installed capacity is 52.8MW, which is more than 15MW, thus is defined as a large-scale GS CER project.

vii. Funding sources of project

Via checking the business license/8/ of PD (Sapphire Wind Power Co. Ltd.), the EPC contract/14/ and Letter of Approval of Technical Feasibility Study/11/, it is verified that project owner invested in purchasing the equipment and construction of the project, there is no public funding involved.

Via checking the ODA declaration/27/, it is verified that no ODA is provided under the condition that the credits generated by the project will be transferred, either directly or indirectly, to the donor country providing ODA support.

Findings

CAR 02 and CL 01, CL 02, CL 03 were raised and resolved.
Refer to Appendix 4 in this report for detail assessment.

Conclusion

CTI confirms;

- (a) The process undertaken to validate the accuracy and completeness of the project is described above;
- (b) The project description contained in the PDD/1/ of the proposed GS project activity is accurate and complete;
- (c) The remote validation was conducted by the validation team as described in this report.

CTI confirms that the type of proposed GS project activity is eligible for Gold Standard Certification.

Moreover, CTI confirms that the description of the proposed GS project activity, as contained in the PDD/1/ sufficiently covers all relevant elements, is accurate and complete and that it provides with a clear understanding of the nature of the GS project activity.

The project was described in the PDD in accordance with requirements of Gold Standard for Global Goals Key Project Information & Project Design Document (PDD) Template version 1.2 on 14/10/2020/38/.

D.3. Application and selection of methodologies and standardized baselines

D.3.1. Selected approved methodology(ies) and methodological tools

Means of validation	The PDD employs the approved CDM methodology ACM0002 "Grid-connected electricity generation from renewable sources (Version 20.0)"/34/. The tools applied are listed as below, Tool 07: Tool to calculate the emission factor for an electricity system (Version 07.0)/35/
Findings	No finding was raised
Conclusion	The validation team confirms that the applied methodology and methodological tools are listed completely and reference of UNCCC website have been provided.

D.3.2. Application of methodology(ies) and tools

Means of validation	The applicability condition of the methodology ACM0002 Version 20.0 is assessed as follows:		
	Applicability Criteria as per methodology	Justification from PP	VVB Assessment
	This methodology applies to project activities that include retrofitting, rehabilitation (or refurbishment), replacement or capacity addition of an existing power plant or construction and operation of a Greenfield power plant.	Yes. The project includes construction and operation of a Greenfield power plant.	Via remote validation and checking the Letter of Approval of Technical Feasibility Study/11/ and the latest approved CDM PDD/4/, CTI verified that this project activity is a Greenfield power plant. Hence this criteria is applicable for this project activity.
	This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant; (b) Involve a capacity addition to (an) existing plant(s); (c) Involve a retrofit of (an) existing operating plants/units; (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s)/unit(s).	Yes. The project is a grid-connected wind power project that installs a Greenfield power plant.	Via remote validation and checking the Letter of Approval of Technical Feasibility Study/11/ and the latest approved CDM PDD/4/, CTI verified that this project activity is a grid-connected wind energy power generation project by install a Greenfield power plant which belongs to (a). Hence this criteria is applicable for this project activity.
	The methodology is applicable under the following conditions: (a) The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power	Yes, the project includes a wind power plant.	Via remote validation and checking the Letter of Approval of Technical Feasibility Study/11/ and the latest approved CDM PDD/4/, CTI verified that this project activity includes wind power plant and is a Greenfield power plant, not involved in capacity additions, retrofits, rehabilitations or replacements.

	plant/unit or tidal power plant/unit; (b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.		Hence this criteria is applicable for this project activity.
	The methodology is not applicable to: (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; (b) Biomass fired power plants/units.	Yes, the project includes a wind power plant.	Via remote validation and checking the Letter of Approval of Technical Feasibility Study/11/ and the latest approved CDM PDD/4/, CTI verified that this project activity includes wind power plant and is a Greenfield power plant, not involved switching from fossil fuels to renewable energy sources and Biomass. Hence this criteria is applicable for this project activity.
	In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	No retrofits, rehabilitations, replacements, or capacity additions is included.	N/A
	The applicability condition of the Tool 07 Tool to calculate the emission factor for an electricity system (Version 07.0) is assessed as follows:		

	Applicability Criteria as per methodology	Justification from PP	VVB Assessment
	The tool determines the CO₂ emission factor for the displacement of electricity generated by power plants in an electricity system, by calculating the “combined margin” emission factor (CM) of the electricity system. The CM is the result of a weighted average of two emission factors pertaining to the electricity system: the “operating margin” (OM) and the “build margin” (BM). The operating margin is the emission factor that refers to the group of existing power plants whose current electricity generation would be affected by the proposed CDM project activity. The build margin is the emission factor that refers to the group of prospective power plants whose construction and future operation would be affected by the proposed CDM project activity.	Yes, applicable. The tool is used to calculate the grid emission factor (CM) of the electricity grid which the project is connected to. The CM is 75% of calculated OM and 25% of calculated BM for the project.	Via remote validation and checking the Energy purchase agreement/15/, CTI verified that the project activity supplies electricity to a grid. Hence CM is 75% of calculated OM and 25% of calculated BM for the project and this criteria is applicable for this project activity.
	This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	Applicable. The project supplies electricity to grid that substitutes the grid electricity. The geographic and system boundaries for this electricity grid can be clearly identified and information on the characteristics of the grid is available from the Pakistan Energy Yearbook published annually by the Government of Pakistan. The tool is used to calculate the OM, BM and CM for baseline emissions calculation.	Via remote validation and checking the Energy purchase agreement/15/, CTI verified that the project activity supplies electricity to a grid. Hence this criteria is applicable for this project activity.
	Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in “Appendix 1: Procedures related to off-grid power	Applicable. Grid power plants only are included for the grid emission factor calculation for the project.	Via checking the tool and EF for the project electricity system calculation process in the ER calculation sheet/2/, CTI confirmed that the emission factor for the project electricity system is calculated for grid power plants only.

	generation” should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.		
	In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	The project is located in Pakistan, not an Annex I Country.	Via remote validation and checking the Energy purchase agreement/15/, it is verified that the project electricity system is located totally in Pakistan, which is not an Annex I country. Hence this criteria is applicable for this project activity.
	Under this tool, the value applied to the CO ₂ emission factor of biofuels is zero.	Not applicable, no biofuel is included in the grid emission factor calculation	Via checking the tool and EF for the project electricity system calculation process in the ER calculation sheet/2/, CTI confirmed that no biofuel is included in the grid emission factor calculation.
Findings	CL 04 was raised and resolved. Refer to Appendix 4 in this report for detail assessment.		
Conclusion	CTI confirms that; - It has critically assessed each applicability condition listed in the selected methodology and methodological tools and the relevant information contained in the PDD against these criteria. - The selected methodology for the GS project activity is applicable. - The selected methodological tools for the GS project activity are applicable. - The methodology was found to be in accordance with the applicable requirements in GS4GG requirements.		

D.3.3. Project boundary, sources and GHGs

Means of validation	The project boundary basically defines the physical and geographical boundary of the project facility and it is well defined in the PDD/1/(section B.3) according to ACM0002 Grid-connected electricity generation from renewable sources (Version 20.0)/34/. The project boundary includes following,
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	The project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to. Via remote validation and checking the Energy purchase agreement/15/ and the technical flow chart as provided in the latest approved CDM PDD, it is verified that project boundary is clearly and correctly defined in the PDD as per the methodology. Emissions sources included in the project boundary have been appropriately included in the PDD. CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity is covered for baseline scenario, and the project scenario has no emissions due to the project emission of wind energy project activity is zero as defined in the applied methodology.
Findings	CAR 03 was raised and resolved. Refer to Appendix 4 in this report for detail assessment.
Conclusion	The project boundary is completely determined in the PDD/1/ as per ACM0002 Grid-connected electricity generation from renewable sources (Version 20.0)/34/ and is validated by CTI. Also, according to the remote validation and checking the Energy purchase agreement/15/ and the technical flow chart in latest approved CDM PDD, validation team confirmed that the sources and gases that are accounted to be appropriate according to the context of project activity.

D.3.4. Baseline scenario

Means of validation	The PD has applied an approved baseline and methodology ACM0002. Version 20.0 which is approved under CDM scheme. As per the identification of baseline scenario for greenfield power plant in the methodology, it is confirmed that “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 “TOOL07: Tool to calculate the emission factor for an electricity system””. As assessed above, the project activity is the installation of a Greenfield power plant, hence the baseline scenario of the project is defined as 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 “TOOL07: Tool to calculate the emission factor for an electricity system”. Based on the checking the description provided in PDD against the applied methodology, it proves that the baseline scenario determined in the section B.4 of the PDD is correct and reasonable. Therefore, baseline scenario is identified transparently for the project activity.
Findings	N/A
Conclusion	The validation team based on the description provided above with regard to the assessment of the requirements confirms that: (a) The approved baseline methodology has identified the baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed GS4GG project activity. (b) The baseline scenario has been determined according to the applied methodology/34/ and “TOOL07: Tool to calculate the emission factor for an electricity system” (Version 07.0)/35/.

D.3.5. Demonstration of additionality

Means of validation	As assessed above, for GSCER project, as per the Section 7.2.1 “Gold Standard CDM and JI Projects are not required to carry out additional assessment for demonstration of additionality over and above what has been done for registration/determination with the CDM EB/JISC unless the Project falls into a category that is deemed non-Additional in an applicable GS4GG Activity Requirement. In such cases the relevant Activity Requirement shall take precedence.”
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	The project has been registered under CDM and additionality has been demonstrated during the CDM validation process. See latest approved CDM PDD of the project/4/ for details assessment of the additionality. Prior Consideration N/A as a GSCER project Ongoing Financial Need N/A as the project is not at the certification renewal.
Findings	N/A
Conclusion	The validation team confirms that this Gold Standard CDM Project are not required to carry out additional assessment for demonstration of additionality due to it has been done for registration with the CDM EB as listed in the latest approved CDM PDD of the project/4/.

D.3.6. Estimation of SDG impacts

Means of validation	PD has selected three SDGs and targets, the demonstration is provided as below,		
	SDGs	Targets & Indicator	Validation Opinion
	SDG 7 Affordable and Clean Energy	Target: 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services Indicator: Net electricity supplied to the grid	Via remote validation and checking the latest approved CDM PDD, CTI confirmed that the project activity uses renewable wind energy to generate electricity displacing fossil fuel dominated electricity generation in WAPDA grid and thus resulting in greenhouse gases emission reductions and provides the affordable and clean Energy in Pakistan. The project enable access to clean renewable and sustainable energy. Hence validation team confirms the project contribution to SDG 7.
	SDG 8 Decent Work and Economic Growth	Target: 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services Indicator: Number of jobs created	Via interview with employees of the project and checking the Certificates of worker staffs/28/ against the training documents/31/. It is verified that project will provide paid work to employees and worker staffs will be trained during the project implementation. Thus the project will achieve full and productive employment and decent work for all. Hence validation team confirms the project's contribution to SDG 8.
	SDG 13 Climate Action	13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning Indicator: Emission reductions achieved by the project	The project reduces GHG emissions due to use renewable wind energy to generate electricity displacing fossil fuel dominated electricity generation in WAPDA grid. Hence, the project reduces GHG emission compare to baseline condition thus to combat climate change. Hence validation team confirms the project's contribution to SDG 13.
	The validation of selected methodology(ies) or proposed approach for calculating baseline and project outcomes is tabulated as below:		

	SDGs	Approaches	Validation Opinion
	SDG 7 Affordable and Clean Energy	Monitoring Indicator: <i>Net amount of electricity supplied to grid</i> Baseline outcomes: 0 Project outcomes: For ex ante estimation, <i>Net amount of electricity supplied to grid</i> was based on Feasibility Study Report/10/ of the project which is confirmed as same to the latest approved CDM PDD. The actual data will be monitored by electricity meters as per the monitoring plan which assessed as below. The net impact of SDG7 = Project outcome of SDG7- Baseline outcome of SDG7	SDG 7 outcome will be monitored through the parameter <i>Net amount of electricity supplied to grid</i> By gathering and analyzing electricity meters' data, the Net amount of electricity supplied to grid reached by the project activity which confirmed have access to affordable and clean energy will be determined. Thus validation team confirms selected approach is applicable to calculating the project outcomes.
	SDG 8 Decent Work and Economic Growth	Monitoring Indicator: Number of jobs created Baseline outcomes: 0 Project outcomes: In project situation, the number of jobs created will be recorded. Source of data is Certificates of worker staffs/28/ and it will be cross checked by the training records/31/. The various trainings are provided to all Engineers and Managerial staffs of the project will be determined by the training records/31/. Net impact of SDG8=Project outcome of SDG8 – Baseline outcome of SDG8	SDG 8 outcome will be monitored through the parameter Number of jobs created by checking the Certificates of worker staffs/28/ and training records/31/. By recording jobs and training that have been created through the project for activities, the number of workers participating in the project related activities and their trainings provided will be determined. Thus validation team confirms selected approach is applicable to calculating the project outcomes.
	SDG 13 Climate Action	Monitoring Indicator: Emission reductions achieved by the project Calculation Method: ACM0002. ACM0002 Grid-connected electricity generation from renewable sources (Version 20.0)/34/ Baseline outcomes: 0 Project outcomes: 61,998 tCO₂	SDG 13 outcome will be monitored through calculation of GHG Emission Reductions by ongoing data collection and storage for ER calculation; and monitoring. By measuring emission reductions generated from wind farm of the project, the outcomes of project combat climate change will be determined. Thus validation team confirms selected approach is applicable

		to calculating the project outcomes. The methodological choices/approaches to estimate the GHG Emission Reduction Values will be assessed in below.
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Specific calculation for SDG 13:

The applied methodology ACM0002 Version 20.0/34/ defines the methodological steps to determine the baseline emissions, project emissions and leakages and emission reductions by the proposed project activity.

Project Emissions

As per ACM0002/34/, Project emission is only valid for geothermal and solar thermal projects, the Project emission of this wind project is 0.

Therefore, $PE_y = 0 \text{ tCO}_2$.

Baseline Emissions

Via checking the applied methodology, as above assessment of the baseline scenario of the project, CTI confirmed that the baseline emissions BE_y in a year y are calculated as:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \quad (1)$$

Where:

- BE_y = Baseline emissions in year y (tCO_2e)
- $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project in year y (MWh)
- $EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

As per the methodology, for the greenfield project,

$$EG_{PJ,y} = EG_{facility,y} \quad (2)$$

Where:

- $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project in year y (MWh)
- $EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)

Hence

$$BE_y = EG_{facility,y} \times EF_{grid,CM,y} \quad (3)$$

Leakage

No leakage emissions need to be considered as per the applied methodology. Therefore, $LE_y = 0 \text{ tCO}_2$.

Emission Reduction

The emission reduction ER_y during a given year y is calculated as follow:

$$ER_y = BE_y - PE_y \quad (4)$$

Where:

- ER_y Emission reductions in year y ($\text{t CO}_2\text{e/yr}$).

BE_y Baseline emissions in year y (t CO₂e/yr).

PE_y Project emissions in year y (t CO₂/yr).

There are no Data and parameters fixed ex ante due to all the parameters need to be monitored and assessed as below.

Demonstration of Ex ante estimation of impacts linked to each of the three SDGs is tabulated as below:

SDGs	Ex ante estimation of impacts	VVB Assessment
SDG 7 Affordable and Clean Energy	Baseline outcomes: 0 Project outcomes: 137,500 MWh Net amount of electricity supplied to grid The estimation is based on FSR/10/. Actual measurements will be monitored by electricity meters.	Baseline outcome confirmed as 0 due to no wind power plant was established in the baseline scenario; Project outcome confirmed as 137,500 MWh Net amount of electricity supplied to grid which is verified by checking the FSR/10/ and latest approved CDM PDD/4/.
SDG 8 Decent Work and Economic Growth	Baseline outcomes: 0 Project outcomes: 20 jobs created The estimation is based on the Certificates of worker staffs/28/.	Baseline outcome confirmed as 0 due to no jobs created without project; Project outcome confirmed as 20 which is verified by checking Certificates of worker staffs/28/.
SDG 13 Climate Action	Baseline outcomes: 61,998 tCO ₂ Emission Project outcomes: 0 tCO ₂ Emission and 61,998 tCO ₂ emission reductions	Baseline outcome confirmed as 61,998 tCO ₂ emission by checking the ER sheet/2/; Project outcome confirmed as 61,998 tCO ₂ emission reductions by checking the ER sheet/2/;

For Baseline Emission calculation, based on above assessment, the baseline emissions can be calculated as follows:

$$BE_y = EG_{facility,y} \times EF_{grid,CM,y} \quad (5)$$

For $EF_{grid,CM,y}$, the calculation is checked in line with the Tool to calculate the emission factor of an electricity system, version 07.0/35/ as per below steps.

The Tool to calculate the emission factor for an electricity system version 07.0 is used. Following the tool, this factor is calculated as a combined margin (CM), consisting of the simple average of the operating margin emission factor (OM) and the build margin (BM) emission factor:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

With the input values:

$EF_{grid,CM,y}$ Combined margin grid emission factor in year y (tCO₂/MWh)

$EF_{grid,OM,y}$ Operation margin grid emission factor in year y (tCO₂/MWh)

$EF_{grid,BM,y}$ Build margin grid emission factor in year y (tCO₂/MWh)

w_{OM} Weighting of operation margin factor (%)

w_{BM} Weighting of build margin factor (%)

For the calculation of these input values, below six steps are used according to Tool to calculate the emission factor of an electricity system, version 07.0/35/.

STEP 1. Identify the relevant electricity systems.

The Pakistani DNA has not published any delineation of the project electricity system and a connected electricity system.

Via checking the Pakistan Energy Yearbook/22/, CTI confirmed that Pakistan comprised two electricity grids, the Karachi Electricity Supply Company (KESC) grid, which supplies Karachi city and adjoining areas of Sindh and Balochistan, and the national electricity grid, managed by the *Water and Power Development Authority (WAPDA)*. As per the Tool to calculate the emission factor of an electricity system, version 07.0/35/, the WAPDA grid is determined as the relevant electricity systems due to the project is connected to the national electricity grid (WAPDA) which has also been defined in the latest approved CDM PDD.

STEP 2. Choose whether to include off-grid power plants in the project electricity system (optional).

According to Option I of step 2 of Tool to calculate the emission factor of an electricity system, version 07.0/35/, off-grid power plants are not included in the calculation.

STEP 3. Select a method to determine the operating margin (OM).

Via checking the Pakistan Energy Yearbook/22/, CTI confirmed that share of low-cost/must-run resources has constituted less than 50% of total grid generation in average of the five most recent year (2015 to 2019), hence simple OM method (option a) is applicable.

For the calculation of $EF_{grid,OM,y}$, ex-post calculation is chosen in the PDD. Hence, the latest calculation of the operation margin emission factor has to be conducted in each monitoring report and the factor for the year proceeding the previous year ($y-1$) was used for the calculations which is confirmed in line with the Tool to calculate the emission factor of an electricity system, version 07.0/35/.

STEP 4. Calculate the operating margin emission factor according to the selected method.

Option B is chosen to calculate the OM emission factor using the total net electricity generation, emission and utilization data for each fuel type as above assessment. Via the Pakistan Energy Yearbook/22/, the simple operation margins for the year 2020 are calculated and verified as correct.

STEP 5. Calculate the build margin (BM) emission factor.

Option 2 is chosen and the build margin is updated every year of the 1st crediting period as per the PDD.

Via the Pakistan Energy Yearbook/22/, the build margin emissions factor for the year 2017, year 2018 and year 2019 are calculated and verified as correct.

STEP 6. Calculate the combined margin (CM) emissions factor.

Due to the project is a wind power generation project activity, hence according to the Tool to calculate the emission factor of an electricity system, version 07.0/35/,

$w_{OM} = 0.75$ and $w_{BM} = 0.25$, hence the final results of $EF_{grid,CM,y}$ are calculated as below,

$$\begin{aligned} EF_{grid,CM,y} &= EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM} \\ &= 0.4729 \text{ tCO}_2/\text{MWh} \times 0.75 + 0.3851 \text{ tCO}_2/\text{MWh} \times 0.25 \\ &= 0.4509 \text{ tCO}_2/\text{MWh} \text{ for year 2020} \end{aligned}$$

The $EG_{facility,y}$ is estimated as 137,500MWh as per the FSR and consistent with the CDM PDD.

Then based on above equation, the baseline emissions are calculated as 61,998 tCO₂e/yr which is confirmed as correct.

Project Emissions

Based on above assessment, $PE_y = 0 \text{ tCO}_2$

Leakage

Based on above assessment, for the project, LE_y is not considered.

	Emission reductions $ER_y = BE_y - PE_y$			
	Year	Baseline estimate (tCO₂e)	Project estimate (tCO₂e)	Net benefit (tCO₂e)
	02/08/2019 – 31/12/2019	25,832	0	25,832
	01/01/2020 – 31/12/2020	61,998	0	61,998
	01/01/2021 – 31/12/2021	61,998	0	61,998
	01/01/2022 – 31/12/2022	61,998	0	61,998
	01/01/2023 – 31/12/2023	61,998	0	61,998
	01/01/2024 – 01/08/2024	36,166	0	36,166
	Total	309,990	0	309,990
	Based on the above assessment of the ex ante determined values, it is verified that the annual ex ante determined ERs calculated result is 61,998 tCO₂/yr.			
	The detail of emission reduction calculation is transparently discussed in the PDD/1/. The assessment team has checked the PDD/1/ and ER sheet/2/ for the detail calculation of all the particulars and found it to be correct.			
	Demonstration of Summary of annual average ex ante estimates of each SDG impact over the crediting period is tabulated as below:			
	SDG	Baseline estimate	Project estimate	Net Impact
7	0 net amount of electricity supplied to grid	137,500 MWh of net amount of electricity supplied to grid	137,500 MWh of net amount of electricity supplied to grid	
8	0 job generated	20 jobs generated	20 jobs generated	
13	61,998 tCO ₂ e Emission	0 tCO ₂ e Emission	61,998 tCO ₂ e Emission Reductions	
Findings	CAR 04, CAR 05 and CAR 06 were raised and resolved. Refer to Appendix 4 in this report for detail assessment.			
Conclusion	The validation team has cross checked the parameters and values related to the emission reduction and confirmed that justification of the mentioned values is correct.			

D.3.7. Monitoring plan

Means of validation	The monitoring plan in the PDD/1/ is correctly applied to the project activity. The monitoring plan has been found to be in compliance with the requirements of the applied methodology/34/.			
	The monitored data and parameters are assessed as below table by validation team, <u>Data and parameters to be monitored:</u>			
	Relevant SDG	Parameter	Monitoring frequency	Assessment
	7&13	EG _{facility,y} - Quantity of net electricity generation supplied by the project plant/unit to the grid in year y	Continuous measurement and at least monthly recording.	EG _{facility,y} will be monitored by electricity meters installed at the High Voltage Side (132kV) of the Power Transformer of the Complex and the ex-ante value is estimated as 137,500MWh derived from FSR/10/. The meter location is confirmed as correct and actual by checking the periodical verification reports for project under CDM scheme/6/.

				The meter will monitor both electricity export and import and the net value is calculated by export minus import. The meters owned by Grid Company have an accuracy class of 0.2s. Project owner install the Metering System along with its own metering system having same specifications with an accuracy class of 0.2s to act as back-up of the Metering System. The calibration of meters will be checked to ensure that the accuracy remains within the specified limits. The method of calibration and frequency of tests will be agreed between Project owner and the grid company based on the manufacturer's recommendations and national standards. Testing and calibration of the Metering System will be carried out by the grid company. Via remote validation of the monitoring device/32/, CTI confirmed that the electricity meters have been installed accordingly, the meters' information including serial numbers, accuracy class, calibration period have been provided in the PDD which is confirmed as actual and correct by remote validation and comparing with the CDM periodical verification reports/6/. The monitoring will be conducted as per the request in the PDD which in compliance with the applied methodology.
	13	$EF_{grid,CM,y}$ - Combined margin CO ₂ emission factor for grid connected power generation in year y calculated using the "Tool to calculate the emission factor	Annually	$EF_{grid,CM,y}$ will be monitored annually as per "Tool to calculate the emission factor for an electricity system"/35/ and data source will be Pakistan Energy Yearbook and the ex-ante value is calculated based on the latest available data from Pakistan Energy Yearbook/22/. Ex post method is chosen by PP, hence the $EF_{grid,CM,y}$ will be monitored annually.

		for an electricity system" (tCO ₂ /MWh)		CTI confirmed that the monitoring will be conducted as per the request in the PDD which in compliance with the applied tool.
	13	$FC_{i,y}$ - Amount of fossil fuel type I consumed in the project electricity system in year y	Annually	$FC_{i,y}$ is used for calculation of $EF_{grid,CM,y}$, will be monitored annually as per "Tool to calculate the emission factor for an electricity system"/35/ and data source will be Pakistan Energy Yearbook and the ex-ante value is derived from the latest available data from Pakistan Energy Yearbook/22/. Ex post method for EF calculation is chosen by PP, hence the $FC_{i,y}$ will be monitored annually. CTI confirmed that the monitoring will be conducted as per the request in the PDD which in compliance with the applied tool.
	13	$NCV_{i,y}$ - Net calorific value (energy content) of fossil fuel type I in year y	Annually	$NCV_{i,y}$ is used for calculation of $EF_{grid,CM,y}$, will be monitored annually as per "Tool to calculate the emission factor for an electricity system"/35/ and ex ante value is derived from IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories/33/. Ex post method for EF calculation is chosen by PP, hence the $NCV_{i,y}$ will be monitored annually. CTI confirmed that the monitoring will be conducted as per the request in the PDD which in compliance with the applied tool.
	13	$EF_{CO2,i,y}$ - CO ₂ emission factor of fossil fuel type I used in power unit m in year y	Annually	$EF_{CO2,i,y}$ is used for calculation of $EF_{grid,CM,y}$, will be monitored annually as per "Tool to calculate the emission factor for an electricity system"/35/ and ex ante value is derived from IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of

				Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories/33/. Ex post method for EF calculation is chosen by PP, hence the $EF_{CO2,i,y}$ will be monitored annually. CTI confirmed that the monitoring will be conducted as per the request in the PDD which in compliance with the applied tool.
	13	EG_y - Net electricity generated by the project electricity system in year y	Annually	EG_y is used for calculation of $EF_{grid,CM,y}$, will be monitored annually as per "Tool to calculate the emission factor for an electricity system"/35/ and data source will be Pakistan Energy Yearbook and the ex-ante value is derived from the latest available data from Pakistan Energy Yearbook/22/. Ex post method for EF calculation is chosen by PP, hence the EG_y will be monitored annually. CTI confirmed that the monitoring will be conducted as per the request in the PDD which in compliance with the applied tool.
	13	$\eta_{m,y}$ - Average net energy conversion efficiency of power unit m in year y	Annually	$\eta_{m,y}$ is used for calculation of $EF_{grid,CM,y}$, will be monitored annually as per "Tool to calculate the emission factor for an electricity system"/35/ and data source is the default values provided in the table in Annex 1 of the Tool to calculate the emission factor of an electricity system/35/. Ex post method for EF calculation is chosen by PP, hence the $\eta_{m,y}$ will be monitored annually. CTI confirmed that the monitoring will be conducted as per the request in the PDD which in compliance with the applied tool.
	8	Number of jobs created	Annually	The value used is 20 for ex-ante determination as per the Certificates of worker staffs/28/ and confirmed as interview with project owner. It will be monitored annully through the parameter number of jobs created by checking the Certificates of

				worker staffs/28/ and monitoring survey with workers. By recording jobs that have been created through the project for activities, the number of people participating in the project related activities will be determined.
	Safeguarding Principle 3. Community Health, Safety and Working Conditions	The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments	Once per monitoring period	The value will be monitored once per monitoring period through determine the measures are taken to eliminate safety hazards by checking the project logbook and monitoring survey with workers. By determine the measures are taken to eliminate safety hazards through the project for activities, it will prove that the project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.
	Safeguarding Principle 9.1 Landscape Modification and Soil	Soil condition	Once per monitoring period	The value will be monitored once per monitoring period through determine the general soil erosion and sediment control measures by checking the project logbook and monitoring survey with workers. In addition, a statement on the environment impacts of the project implementation will be checked and interview with the local environment authority will be conducted for checking if the general soil erosion and sediment control measures carried out. By determine the general soil erosion and sediment control measures taken through the project for activities, it will prove that the soil condition will not be eroded.
	Safeguarding Principle 9.4 Release of pollutants	Dust emissions	Once per monitoring period	The value will be monitored once per monitoring period through determine the dust suppression measures by checking the project logbook and monitoring survey with workers. In addition, a statement on the environment impacts of the project implementation

				will be checked and interview with the local environment authority will be conducted for checking if the dust suppression measures carried out. By determine the dust suppression measures taken through the project for activities, it will prove that the dust emissions will be reduced.
	The assessment team has confirmed that the monitoring parameters are sufficient to calculate each SDG impacts especially the emission reductions/2/ in accordance with the methodology/34/. The parameters will be calculated or measured as mentioned above in section D.4.8. Sampling Plan Sampling plan is not applicable. Other elements of monitoring plan The validation team has analyzed the content to the monitoring plan against the requirements of the applied methodology and the applicable methodological tools and came to the following conclusions: The validation team evaluated the feasibility and sufficiency of the monitoring plan. The key components of the monitoring plan are as follows. Objects to be monitored: Listed as above table and assessed by validation team. Monitoring organization: The PDD contains a diagram illustrating the Organization Structure of the Monitoring Team to be implemented by the project owner in order to implement the project activity. The General Manager conducts the overall responsibility for the monitoring process, monitoring Manager is responsible for supervise the implementation of the monitoring plan to assure the accuracy of the data for this monitoring period. And all the data and evidence were collected by the engineering staff and they make the daily operation and maintenance. The accounting staff is responsible for the process of power transactions with the power grid company and power sale receipts keeping and auditing staff is responsible for reviewing the data and receipt collected, ensuring the veracity and transparency of them. The organizational structure is considered sufficient to fulfil the monitoring requirements of the methodology and ensure that emission reductions can be verified for each monitoring period. Monitoring equipment and installation: Measurement instruments are described in the monitoring plan as subject to appropriate national standards with respect to installation, accuracy and calibration interval. Main instruments electricity meters are used to monitor $EG_{facility,y}$. This equipment setup is considered sufficient to carry out the monitoring requirements of the methodology, and the appropriate national standards will be followed. Meters maintenance and calibration: The periodical calibration and maintenance of the meters should comply with the related national standards. The meters must be sealed after calibration. Neither the project owner nor the power grid company could unseal or change the meters without the presence of the other party. Data management: All data collected as part of monitoring plan will be archived electronically on hard disks and be kept at least 2 years after the end of the last crediting period. Quality assurance and quality control procedures:			

	The PDD contains sufficient description on how quality will be controlled and assured in the monitoring of emission reductions. Emergency Procedure If the main meters with error, Project proponents will take actions to make the meter function normally and using the meter reading from backup meter, if the backup meter with error too, then make sure the emission calculations to be conservative.
Findings	CAR 07, CAR 08 and CAR 09 were raised and resolved. Refer to Appendix 4 in this report for detail assessment.
Conclusion	The validation team confirms: • The parameters which are part of monitoring plan is in line with the PDD • The monitoring arrangements described in the monitoring plan of the PDD /1/ are feasible within the project design. • The PD will be able to implement the monitoring plan.

D.4. Start date, crediting period type and duration

Means of validation	The start date of the project is 27/08/2011 which is the date on signing the EPC contract/14/ and has been defined in the CDM PDD. This date is confirmed as the earliest date on which the Project Developer has committed to expenditures related to the implementation of the Project. The assessment team has reviewed the EPC contract/14/ and found date is correct and consistent with the CDM PDD. The PD has considered a crediting period of 5 years renewable starting from 02/08/2019 which is the date of two years prior to the date of first submission to GS. Due to the project was transited from CDM to GS, via checking the GS4GG rules, due to the project had first submission to GS on 02/08/2021, the crediting period under GS4GG is defined as 02/08/2019 – 01/08/2024 (5-years project cycle) and shall be renewed on or before 01/08/2024 and next GS crediting period for renewal is 02/08/2024-21/11/2025 which is not longer than the ending date of CDM crediting period. The lifetime of the project is defined as 20 years checked from the FSR the Equipment technical specification/17/ as provided by PD and the details are found correct and consistent.
Findings	N/A
Conclusion	The project start date as stated in PDD/1/ has been validated as per the definition of start date given in the GS4GG Principles and Requirements/39/. • A crediting period of 5 years renewable has been selected by the PD as per GS4GG Principles and Requirements/39/. • The expected lifetime of the project indicated in the PDD is correct.

D.5. Safeguarding principles and Gender Sensitive assessment

Means of validation	The validation team has also checked mitigation measure with respect to the eleven Safeguarding Principles. The validation opinion is detailed below,				
	No	Safeguarding principles	Assessment of relevance to the project	Mitigation measure	Validation Opinion
	1	Human Rights a. 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.	No	Not required	Pakistan ratified “International Convention on the Elimination of all Form of Racial Discrimination” on 21/09/1966; “International Covenant on Civil and Political Rights” on 23/06/2010; and “Convention on the Elimination of all Forms of Discrimination against Women” on 12/03/1996

		b. The Project shall not discriminate with regards to participation and inclusion.			which is verified by checking the public information from website/52/, hence it is verified that no impact of the human existence to this kind of project. Furthermore, via checking the Letter of Approval of Technical Feasibility Study/11/, it is verified that the government approved the project. As such there is no risk involved and therefore the project does not violate this safeguarding principle. Via remote validation and interview with representatives, CTI confirmed that the project has no discrimination to any participation and inclusion. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	2	Gender Equality			
		a. The Project shall not directly or indirectly reinforce gender-based discrimination and shall not lead to/contribute to adverse impacts on gender equality and/or the situation of women. b. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work c. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks. d. (where required) Summary of opinions and	No	N/A	Via checking the public information/53/, it is confirmed that Pakistan has signed the "CEDAW – Convention on the Elimination of All Forms of Discrimination against Women in 1996. Via checking the SCR/3/, it is confirmed that PD has shared the project information and invited comments from local women. And the project is utilizing wind power for electricity generation hence confirmed not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women. The validation team has verified that the project gives women access to provide "Continuous input / grievance

		recommendations of an Expert Stakeholder(s)			mechanism” as provided in the PDD. Besides, due to women usually spend much of their time at home, and the project is helpful to solve electricity shortage problem and provides women access to clean and affordable sustainable energy for use, thus is confirmed as good to women's daily lives. Finally, via checking the Stakeholder Consultation Report/3/, it is verified that the project seek the input of an Expert Stakeholder(s) and to include their recommendations in the Project design. Via checking the SCR/3/, it is confirmed that the expert indicated that local customs and cultural restrictions don't allow women to attend any public gatherings but women stakeholders are encouraged to provide comments indirectly via their husbands, etc. Hence, it is verified that no negative comments were raised on gender equality for the project. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	3	Community Health, Safety and Working Conditions			
		a. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community.	Yes	N/A	The project utilizing wind power for electricity generation which is confirmed have potential risks to the workers based on expertise of the validation team. The project makes several measures to ensure that the works are not exposed to unsafe or unhealthy work environments. And this has been chosen as the monitoring

					indicator for the safeguarding principle. Refer to section D.3.7 of this report for assessment of the monitoring.
	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?	No	N/A	Via checking the IEE report/12/, CTI confirmed that the project land is not used in sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture. The project does not utilise Cultural Heritage, including the knowledge, innovations, or practices of local communities, affected communities. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
		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	N/A	Via checking the IEE report/12/, CTI confirmed that the project does not cause physical or economic relocation of peoples. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
		4.3 Land Tenure and other rights			
		Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership?	No	N/A	Via checking the IEE report/12/, CTI confirmed that the project land is the principal property of Government of Sindh, and the project owner leased the land from Government of Sindh for wind farm construction and operation for more than 60 years which is confirmed by checking the signed Land taking over document/20/. As such there is no risk involved and therefore the project does not

					violate this safeguarding principle.
		4.4 Indigenous people			
		a. The Project Developer shall identify all communities of Indigenous Peoples within the Project area of influence who may be affected directly or indirectly by the Project b. The Project Developer shall recognize and respect the indigenous people's collective rights to own, use, and develop and control the lands, resources and territories that they have traditionally owned, occupied or otherwise used or acquired, including lands and territories for which they do not yet possess title. c. The Project Developer shall respect, protect, conserve and shall not take the cultural, intellectual, religious and spiritual property of indigenous peoples without their free, prior and informed consent (FPIC). d. The Project Developer shall ensure that the indigenous people are provided with the equitable sharing of benefits to be derived from utilisation and/or commercial development of natural resources on lands and territories or use of their traditional knowledge and practices by the Project. This shall be done in a manner that is culturally	No	N/A	Based on above assessment, CTI confirmed that people have access to the clean and renewable energy. Besides, there are no indigenous people present within the area of influence nor the project is located on territory claimed by indigenous people. This is verified by checking the IEE report/12/. Furthermore, via the IEE report, it is confirmed that the noise impact from the wind turbine is quite low and can be ignored due to the distance from the site to the nearby village is more than 5-8 kms. As such there is no risk involved and therefore the project does not violate this safeguarding principle.

		appropriate and inclusive and that does not impede land rights or equal access to basic services including health services, clean water, energy, education, safe and decent working conditions and housing. e. The opinions and recommendations of an Expert Stakeholder(s) shall be sought and demonstrated as being included in the project design.			
	5	Corruption a. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects.	No	N/A	Via checking the business license/8/ of PD (Sapphire Wind Power Co. Ltd.), the EPC contract/14/ and Letter of Approval of Technical Feasibility Study/11/, it is verified that project owner invested in purchasing the equipment and construction of the project. Besides, by checking the Tariff Petition/9/, it is verified that the cost has been included in the Tariff Petition and has been approved by government/9/. In addition, the companies comply with all related economic laws and regulations of Pakistan as stated in the approval/11/. Pakistan has passed the Prevention of Corruption Act/54/. Hence, the Project does not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects. As such there is no risk involved and therefore the project does not violate this safeguarding principle.

	6	Economic Impacts			
		6.1 Labour Rights			
		a. The Project Developer shall ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions. b. Workers shall be able to establish and join labour organisations c. Working agreements with all individual workers shall be documented and implemented and include: 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. d. No child labour is allowed (Exceptions for children working on their families' property requires an	No	N/A	During the construction, via checking the EPC contract/14/, it is confirmed that wind power plant was conducted by a qualified engineering company who is willing to work. Via checking the Labor contracts/29/, it is verified that the employees for operation project are hired with the freedoms and rights are not limited. Hence no any form of forced or compulsory labor. Pakistan is a party to ILO Convention 87 Freedom of Association and Protection of the Right to Organise Convention/45/ and a party to ILO C29 Forced Labour Convention/45/. Via checking the labor contracts/29/, it is confirmed that the necessary information has been provided and the related welfare has been listed as per the request of Labor Legislation of Pakistan/55/. Via checking the labor contracts/29/, it is verified that workers have the rights to establish and join the labour organizations which has been verified consistent with the request in Labor Legislation of Pakistan /55/. All employees would provide their age information document, e.g. ID, when signing the labour contract, and the project owner did not and will not employ any child labour which is confirmed in line with the ILO Conventions on child labour (ILO Convention 182: Worst Forms of Child Labour

		Expert Stakeholder opinion) e. 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			Convention, ILO Convention 138: Minimum Age Convention)/45/ ratified by Pakistan. Via checking the training records/31/, it is confirmed that some trainings have been provided to all Engineers and Managerial staffs of the project. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	6.2 Negative Economic Consequences				
		Does the project cause negative economic consequences during and after project implementation?	No	N/A	Via checking Energy Purchase Agreement /15/, Generation License issued by National Electric Power Regulatory Authority (NEPRA)/16/ and latest approved CDM PDD/4/ and interview with the Project Developer, it is verified that the project generates electricity by using wind resources and supply to grid and has been granted for electricity generation business until year 2035. Hence, the project will not cause any negative economic consequences during and after project implementation. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	7	Climate and Energy			
		7.1 Emissions			
		Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	N/A	Via checking the ER sheet/2/ and latest approved CDM PDD/4/, CTI confirmed that the project decrease GHG emissions comparing with the baseline scenario. As such there is no risk involved and therefore the project does not

				violate this safeguarding principle.
		7.2 Energy Supply		
		Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No	N/A Via checking the Energy purchase agreement/15/, CTI confirmed that the project activity will reduce dependency on fossil fuel based electricity and create more affordable clean energy by using wind resources for Pakistan. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	8	Water		
		8.1 Impact on Natural Water Patterns/Flows		
		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	N/A The project is not involved in using surface and ground water for construction and operation of the project. Based on the expertise of validation team, the wind farm does not use water for electricity generation, only consumption for drinking water and sanitary water. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
		8.2 Erosion and/or Water Body Instability		
		Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion?	No	N/A The project is not involved in using surface and ground water for construction and operation of the project. Hence, the project does not cause erosion and/or water body instability or disrupt the natural pattern of erosion. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	9	Environment, ecology and land use		
		9.1 Landscape Modification and Soil		
		Does the Project involve the use of land and soil for	Yes	N/A The project does not involve the production, harvesting, and/or

		production of crops or other products?			management of living natural resources by small-scale landholders and/or local communities. Via remote validation, it is verified that wind power farm in the project area does not involve any use of crop land, and will not cause degradation in existing landscape function and services. It will not affect the health condition of any soils. However, the ground would be disturbed to some extent during the construction period, while the project owner will adopt measures to better the ecological environment of the site after the construction completion of the project. And this has been chosen as the monitoring indicator for the safeguarding principle. Refer to section D.3.7 of this report for assessment of the monitoring.
	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	N/A	Via checking the EPC contract/14/, it is verified that wind farm construction does not lead to vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic condition. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	Principle 9.3 Genetic Resources				
		Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting,	No	N/A	Via remote validation and based on the expertise to wind power generation projects, it is verified that the project does not involve any use of GMOs, so it will not have negatively

		commercial development, or take place in facilities or farms that include GMOs in their processes and production)?			impacted by the use of genetically modified organisms or GMOs. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
		9.4 Release of pollutants			
		Could the Project potentially result in the release of pollutants to the environment?	Yes	N/A	The project uses wind resources to generate electricity and the electricity is delivered to grid which utilize clean and renewable energy, thus no other pollutants are released to the environment by the project implementation. Via checking the IEE report/12/, it is confirmed that Dust emission happened during the construction phase of the project. And during the operation phase, wind turbines do not use fossil fuel combustion to generate electricity, and hence no gas emissions to the atmosphere which is confirmed by checking the IEE report and based on expertise of VVB. And this has been chosen as the monitoring indicator for the safeguarding principle. Refer to section D.3.7 of this report for assessment of the monitoring.
		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?	No	N/A	Via remote validation, it is verified that the project use wind resources to generate electricity and the electricity is delivered to grid. It is clean and renewable energy, hence it does not involve any hazardous materials resulting from their production, transportation, handling, storage and use in the Project.

				As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	9.6 - Pesticides & Fertilisers			
	Will the Project involve the application of pesticides and/or fertilisers?	No	N/A	Via remote validation, it is verified that the project does not involve any use of pesticides and/or fertilizers. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	9.7 Harvesting of Forests			
	Will the Project involve the harvesting of forests?	No	N/A	Via remote validation, it is verified that the project does not involve any harvesting of forests. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	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	N/A	Via remote validation, it is verified that the project does not involve modification of the quantity or nutritional quality of food available. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	9.9 Animal husbandry			
	Will the Project involve animal husbandry?	No	N/A	Via remote validation, it is verified that the project does not involve animal husbandry. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	9.10 High Conservation Value Areas and Critical Habitats			
	Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	No	N/A	Via checking the IEE report/12/, CTI confirmed that the project does not involve any effect on degradation, conversion of any critical natural habitat. The migratory birds are coming from the cold regions and they spent

				their winter season at the proposed site because the site is near to the Kenjhar Lake which has been confirmed by remote validation. But via verifying the IEE report/12/, CTI confirmed that the ratio of bird's mortality (0.1%) is minimum as compare to the birds are killed during other circumstances. As such there is no risk involved and therefore the project does not violate this safeguarding principle.
	9.11 Endangered Species			
	Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)?	No	N/A	Via checking the IEE report/12/, CTI confirmed that there are no endangered species identified as potentially being present within the Project boundary. In addition, the geothermal based heating system used in the project will not pose a threat to any species.
	AND/OR			
	Does the Project potentially impact other areas where endangered species may be present through transboundary affects?			As such there is no risk involved and therefore the project does not violate this safeguarding principle.
Assessment that project complies with 'gender sensitive' requirements				
The justifications provided for the project complies with 'gender sensitive' requirements are assessed as per four mandatory questions included under Step 1 to 3 in "Gold Standard Gender Equality Guidelines and Requirements" in below table,				
Questions		Justification		
Question 1: Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?		The project reflects the key gender issues and requirements of Gender Sensitive design and implementation. The project locates in Pakistan, gender inequalities and gender-related risks are identified by PP including Discriminations against women and Gender-based violence which are confirmed as reasonable by checking the public information/56/ and Gender Assessment report/30/. PP has considered the risks in the project design and implementation.		

		Via checking the SCR/3/, it is confirmed that both women and men have been invited to the consultations for comments or questions. In addition, via the contact methods provided in Continuous input / grievance mechanism, all the stakeholders including both women and men can give comments via comment book, telephone and email methods. Furthermore, due to the women spend more time at home, and the project is helpful to solve electricity shortage problem in Pakistan and provides women access to clean and affordable sustainable energy for use, which is confirmed as good to women's daily lives. Hence, it is confirmed that the project does not increase gender inequality.
	Question 2: Explain how the project aligns with existing country policies, strategies and best practices	The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis. Via checking the public website/53/, CTI confirmed that Pakistan has signed the "CEDAW – Convention on the Elimination of All Forms of Discrimination against Women in 1996. And the project following any existing country policies and strategies for women's right. Via checking the SCR/3/, it is confirmed that both women and men have been invited to the consultations for comments or questions. In addition, via the contact methods provided in Continuous input / grievance mechanism, all the stakeholders including both women and men can give comments via comment book, telephone and email methods. Furthermore, due to the women spend more time at home, and the project is helpful to solve electricity shortage problem in Pakistan and provides women access to clean and affordable sustainable energy for use, which is confirmed as good to women's daily lives.
	Question 3: Is an Expert required for the Gender Safeguarding Principles & Requirements?	Via checking the SCR/3/, CTI confirmed that an expert has been invited to attend the local stakeholder consultation meeting as per Gender Safeguarding Principles & Requirements who is the representative of National Commission for Human Development (NCHD), whose mission is to improve access to

		basic education and healthcare in the Pakistan's poorest communities. The expert pointed out that although the local customs and cultural restrictions don't allow women to attend any public gatherings but women stakeholders are encouraged to provide comments indirectly via their husbands, etc. In addition, the project owner provides school and hospital to local communities so that the local residents, incl. their children can have access to education and medical support which has been confirmed by the good benefits to local people including women. And it is confirmed that no negative comments were raised on gender equality for the project. Hence, the gender experts are invited as per the Gender Safeguarding Principles & Requirements.
	Question 4: Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	Via checking the SCR/3/, CTI confirmed that an expert has been invited to attend the local stakeholder consultation meeting as per Gender Safeguarding Principles & Requirements who is the representative of National Commission for Human Development (NCHD), whose mission is to improve access to basic education and healthcare in the Pakistan's poorest communities. The expert pointed out that although the local customs and cultural restrictions don't allow women to attend any public gatherings but women stakeholders are encouraged to provide comments indirectly via their husbands, etc. In addition, the project owner provides school and hospital to local communities so that the local residents, incl. their children can have access to education and medical support which has been confirmed by the good benefits to local people including women. And it is confirmed that no negative comments were raised on gender equality for the project. Hence, the gender experts are invited to assist with Gender issues at the Stakeholder Consultation.
Findings	CL 05 and CL 06 was raised and resolved. Refer to Appendix 4 in this report for detail assessment.	
Conclusion	The Safeguarding principles assessment is carried out according to the relevance to the project activity. Project developers discuss any possibilities in Safeguarding Principles of the GS4GG. The validation team considers the Safeguarding principles assessment has been based on the accurate local situation and the corresponding information has been	

	included in the PDD. It is analyzed in the PDD that it would create no risks of relevance to the project activity in all aspects of Safeguarding principles assessment. The validation team also considers that no mitigation measures are required for the project activity.
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D.6. Local stakeholder consultation assessment

Means of validation	According to the GS4GG Stakeholder Procedure Requirements and Guidelines, Stakeholder Consultation process shall comprise of a minimum two rounds of consultation. The first round of Stakeholder Consultation shall include a physical meeting. In order to comply with the Gold Standard rules and guidance, the project proponent conducted the Stakeholder Consultation process. First round of Stakeholder Consultation The first round of Stakeholder Consultation has been conducted in August and September of 2021 consisted of invitation process on 17/08/2021 and a physical stakeholder consultation meeting held on 20/09/2021 in the Project site in Jhimpir, District Thatta, Sindh Province which is verified in the Stakeholder Consultation Report/3/. Before the meeting, the PD had invited the stakeholders as many as possible. For stakeholders from categories A who are direct stakeholders of this project, public notices were displayed at different locations. Stakeholders who followed an invitation by public notice did not give formal confirmation of their participation at the meeting in advance, but confirmed their participation by their attendance For stakeholders from other categories, two channels were used for invitation including emails and telephone. Above are verified by checking the photos and emails/23/. The consultation meeting was attended by 33 local stakeholders (including 3 expert stakeholders from local government and agency) and 33 effective evaluation forms were delivered and received for project which has been verified by checking the attendance list and signed evaluation forms/23/. During the meeting the project owner introduced the project design and answering the questions raised by the stakeholders and the corresponding social and environmental impacts were discussed. The 'Stakeholder Consultation Meeting Evaluation Form' were distributed to each participant and all participants were asked to respond to all questions from the forms and the questionnaire. The validation team was able to verify above by conducting the physical meeting and the site visit, and interviewing with the local stakeholders, checking the filled forms, meeting attendance list/23/ against the GS4GG Stakeholder Consultation Report for this project/3/. Most of participates held positive attitude towards the project and believe that it will have an overall positive impact on the local area and local residents, respondents sent clear message that the project has far more positive effects than negative ones. During the meeting, there were no negative comments received. Furthermore, via checking the expert stakeholders evaluation forms/23/, it is verified that Expert Stakeholders whom from Alternative Energy Development Board (AEDB), Central Power Purchasing Agency (CPPA) and National Commission for Human Development (NCHD) were invited to raise opinion and recommendations related to certain Safeguarding Principles and SDG Impacts which have been provided by the PD, and the opinion and recommendations have been provided by Expert Stakeholders which has been considered in the SCR related to affirming the encourage and support of project implementation. The expert from National Commission for Human Development (NCHD) pointed out that although the local customs and cultural restrictions don't allow women to attend any public gatherings but women stakeholders are encouraged to provide comments indirectly via their husbands, etc. In addition, the project owner provides school and hospital to local communities so that the local residents, incl. their children can have access to education and medical support which has been confirmed by the good benefits to
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	local people including women. Thus, it is verified there is no improvement suggestion on the design of the project at the local stakeholder consultation stage. The PD provided the feedbacks to each suggestion with participants and experts' agreement. Since no negative comments to the project design and monitoring methods, environment, social and economic impacts, thus it is verified that there is no need to change the project design. Based on the above assessment, the validation team hereby confirms that the Project fulfills the relevant criteria of the GS4GG Stakeholder Consultation. Second round of Stakeholder Consultation According to the GS4GG Stakeholder Procedure Requirements and Guidelines, Stakeholder Consultation process shall comprise of a minimum two rounds of consultation. As the first round of Stakeholder Consultation included a physical meeting. Thus, the SFR process was conducted only by emails in the time period between 02/08/2021 and 02/10/2021 as confirmed by checking the SFR evidence/24/. Via checking the emails invitation and feedbacks/24/, it is verified that PD has invited stakeholders who had attended the first round LSC to comment on the SCR, PDD and the Key project information from 02/08/2021 and 02/10/2021 covering two months which is in line with the GS requirement. Furthermore, by checking the mail and website contents, it is verified that there is no stakeholder feedback was received during the Stakeholder Feedback Round. Based on the above assessment, the validation team hereby confirms that the Project fulfills the relevant criteria of the Gold Standard Stakeholder Feedback Round. Continuous input / grievance mechanism For the continuous input / grievance mechanism, PD has listed different methods. As confirmed through checking the photo of Grievance book outside the wall of the reception room on project site/32/, CTI verified that the inputs/grievances mechanism has been in place. Besides, as per the internet/email address which has been provided to local stakeholders, CTI verified that they have access to provide issues or comments through given methods.
Findings	CL 07 was raised and resolved. Refer to Appendix 4 in this report for detail assessment.
Conclusion	The Validation team confirmed that the PD has conducted two rounds of stakeholder's consultation process prior to the submission of the request for registration based on GS4GG rules and solicit comments for the project activity has been addressed in the PDD. Via checking the relevant evidence/3/, /24/, /23/, it is verified that no comments were received from the local stakeholders and expert stakeholders regarding to the impact to the sustainability development by the project. Therefore, overall, the PD did not need to alter the original design of the project activity.

SECTION E. Internal quality control

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The final validation report was undergone a technical review by a qualified independent reviewer before requesting design certification of the project activity. The technical review was performed by a technical reviewer qualified in accordance with CTI's qualification scheme for GS validation and verification that meets the criteria of GS guidelines for qualification.

SECTION F. Validation opinion

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Shenzhen CTI International Certification Co., Ltd (CTI) has conducted the validation of the GS4GG project activity “Sapphire 49.5 MW Wind Farm Project” which is a registered CDM project. The validation was performed on the basis of rules and requirements defined by GS4GG Principles and Requirements.

The validation is based on the baseline and methodology ACM0002, “Grid-connected electricity generation from renewable sources ” Version 20.0, the Stakeholder Consultation Report, and the final version of PDD. The validation consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up on-site visit and interviews with project participants and local stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report.

In the course of the validation 9 Corrective Action Requests (CARs), 7 Clarification Requests (CLs) were raised and successfully closed. No Forwarded Action Requests (FARs) was raised.

The review of the project design documentation and additional documents related to baseline and monitoring methodology and subsequent background investigation have provided the CTI with sufficient evidence to validate the fulfilment of the latest valid GS4GG requirements.

In detail the conclusions can be summarized as follows:

- the project meets all eligibility criteria set by GS4GG.
- the project does not violate any of safeguarding principles set by GS4GG.
- the baseline scenario is correctly defined as per the applied methodology and relate tools;
- the project additionality is sufficiently justified in the CDM PDD;
- all data and information used for ex-ante calculation of emission reductions is of projected and/or hypothetical nature;
- the monitoring plan of SDG parameters in the validated PDD is transparent and adequate;
- the project does not result in diversion of ODA.
- the project meets the stakeholder consultation requirements.
- the project contribution to SDG is determined.

The conclusions of this report show, that the project, as it was described in the PDD, is in line with all criteria applicable for the validation against the GS4GG requirements without any qualifications or limitations.

Therefore, the project is recommended to GS Sustain CERT for the submission of the validation report.

Appendix 1. Abbreviations

Abbreviations	Full texts
BAU	Business-as-usual
BE	Baseline Emission
CAR	Corrective Action Request
CCPG	Central Pakistan Power Grid
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon dioxide
CP	Crediting Period
CTI	Shenzhen CTI International Certification Co., Ltd
DNA	Designated National Authority
EB	Executive Board
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
GS4GG	Gold Standard for the Global Goals
IEE	Initial Environment Examination
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
LSC	Local Stakeholder Consultation
MoV	Means of Validation
MP	Monitoring Plan
ODA	Official Development Assistance
PD	Project Developer
PDD	Project Design Document
PE	Project Emission
PP	Project developer
PS	Project Standard
QC/QA	Quality control/Quality assurance
RFR	Request for Registration
SCR	Stakeholder Consultation Report
SD	Sustainable Development
SDG	Sustainable Development Goals
SFR	Stakeholder Feedback Round
tCO ₂ e	Tonnes of Carbon di oxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
V	Version
VER	Voluntary Emission Reduction
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

Ms. Guolian WANG

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Validator	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 3: Energy demand	TA 3.1: Energy demand
SS 4: Manufacturing industries	TA 4.1: Cement and lime production
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN

Wu Lin

Technical Competent Manager

Shenzhen, 01/01/2021

Mr. Li Ziqi

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Validator	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 4: Manufacturing industries	TA 4.1: Cement and lime production
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry
SS 13: Waste handling and disposal	TA 13.1: Solid waste and wastewater
	TA 13.2: Manure

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN

Wu Lin

Technical Competent Manager

Shenzhen, 01/01/2021

Appendix 3. Documents reviewed or referenced

No	Author	Title	References to the document	Provider
1.	PP	GS4GG Project Design document of “Sapphire 49.5 MW Wind Farm Project”	- Version No. 1, dated 29/07/2021 - Version No. 3, dated 05/12/2021 - Version No. 3.1, dated 08/02/2022 - Version No. 3.2, dated 17/03/2022	PP
2.	PP	Emission Reduction Calculation spreadsheet of “Sapphire 49.5 MW Wind Farm Project”	- Version No. 01, dated 29/07/2021 - Version No. 02, dated 05/12/2021	PP
3.	PP	Stakeholder Consultation Report of “Sapphire 49.5 MW Wind Farm Project”	- Version No. 2, dated 08/10/2021	PP
4.	PP	Latest approved CDM PDD	Latest approved CDM PDD for the “Sapphire 49.5 MW Wind Farm Project”, version 1.5 dated 28/12/2016	UNFCCC website
5.	BV	CDM Validation Report	Validation Report for CDM project “Sapphire 49.5 MW Wind Farm Project” Revision No. 04, dated 30/10/2012	UNFCCC website
6.	DOEs	Periodical CDM verification reports and monitoring reports	Periodical CDM verification reports and monitoring reports https://cdm.unfccc.int/Projects/DB/BVQI1352703902.61/view	UNFCCC website
7.	TÜV NORD	Post Registration Report	Post Registration Report for CDM project “Sapphire 49.5 MW Wind Farm Project”, version 01, dated 17/01/2017	UNFCCC website
8.	The companies regulation and Commercial Register B of the Local Court of Munich	Business License	Business License of Sapphire Wind Power Co. Ltd. and UPM Umwelt-Projekt-Management GmbH	PP
9.	PP	Tariff Petition	Tariff Petition filed to National Electric Power Regulatory Authority (NEPRA), dated 30/08/2011	PP
10.	Sgurr energy	Feasibility Study Report	Issued on 06/10/2009	PP
11.	Alternative Energy Development Board (AEDB)	FSR Approval	Issued on 27/08/2011	PP
12.	Arch Associates	Initial Environment Examination (IEE) report	Initial Environment Examination (IEE) report of the project has been conducted in line with in compliance with Pakistan Environmental Protection Act (PEPA), 1997	PP
13.	Office of the Director General, Sindh Environmental	IEE approval	Approval of IEE for the Project Activity dated 06/08/2009	PP

	Protection Agency, Government of Sindh			
14.	Sapphire Wind Power Co. Ltd. and China Machinery Engineering Corporation	EPC contract	EPC (Engineering, Procurement, Construction) contract signed on 27/08/2011	PP
15.	Project Owner and National Transmission & Dispatch Company Ltd. ³	Energy Purchase Agreement	Energy Purchase Agreement signed on 17/02/2014	PP
16.	National Electric Power Regulatory Authority (NEPRA)	Generation License	Generation License issued by National Electric Power Regulatory Authority (NEPRA) dated on 24/04/2015	PP
17.	GE	Equipment technical specification	Equipment technical specification	PP
18.	Project Owner	Letter of Notice to proceed	Letter of Notice to proceed dated on 28/08/2014	PP
19.	Project Owner, REEE (Pvt) Ltd and GOPA International Energy Consultant GMBH	Certificate of Commissioning	Certificate of Commissioning of Complex to the project issued on 21/11/2015	PP
20.	Government of Sindh and project owner	Land taking over document	Land taking over document	PP
21.	Sapphire Wind Power Co. Ltd.	LOG	Operation and management of project logs	PP
22.	Ministry of Petroleum & Natural Resources	Pakistan Energy Yearbooks	Pakistan Energy Yearbooks 2015, 2016, 2017, 2018 and 2019	PP
23.	PP	Local Stakeholder Consultation Records	Local stakeholder consultation process evidences: - The email for invitation; - Photo of all the invitation channel - LSC Meeting attendance's list with signature; - All filled evaluation forms by attendance in the Meeting including Expert stakeholders	PP
24.	PP	Stakeholder Feedback Round	Stakeholder Feedback Round process evidences: - The email for invitation of the on-line consultation;	PP
25.	PP	Declaration of no double counting	Issued on 15/11/2021	PP
26.	PP	Declaration of not involved in other GHG scheme	Issued on 15/11/2021	PP

³ Refer to the footnote 9 in PDD for the function of National Transmission & Dispatch Company Ltd.

27.	PP	ODA declaration	Declaration of Non-Use of ODA by project owner of GS11307 issued on 12/11/2020	PP
28.	PP	Certificates of worker staffs	Certificates of worker staffs including employment and salary	PP
29.	PP and employees	Labor contracts	Labor contracts signed with employees for implementation of this project	PP
30.	Asian Development Bank	Gender Assessment report	Pakistan Country Gender Assessment report issued by Asian Development Bank	PP
31.	PP	Technical Training Records	Technical Training Records of project 1. Training Records 2. Training Vertificates	PP
32.	PP	Videos and photos	Videos and photos of project site, main equipment and project implementation, monitoring equipment, etc.	PP
33.	IPCC	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories	Public Website
34.	UNFCCC	CDM Approved Methodology ACM0002	"ACM0002 Grid-connected electricity generation from renewable sources" (Version 20.0)	UNFCCC website
35.	UNFCCC	Methodological tool	Tool to calculate the emission factor for an electricity system (Version 07.0)	UNFCCC website
36.	UNFCCC	Project Standard	CDM project standard for project activities (Version 03.0)	UNFCCC
37.	GS	COVID 19: INTERIM MEASURES	RU_2021-v4_COVID-19_Interim-measures	GS website
38.	GS	GS4GG PDD template	Gold Standard for the Global Goals Key Project Information & Project Design Document (PDD) Template, version 1.2, 14/10/2020	GS Website
39.	GS	Gold Standard for the Global Goals Principles and Requirements	Version 1.2	GS Website
40.	GS	Gold Standard for the Global Goals Safeguarding Principles & Requirements	Version 1.2	GS Website
41.	GS	Gold Standard for the Global Goals Renewable Energy Activity Requirements	Version 1.4	GS Website
42.	GS	Gold Standard for the Global Goals Stakeholder Consultation and Engagement Requirements	Version 1.2	GS Website
43.	GS	GS4GG GHG Emissions Reduction & Sequestration Product Requirements	Version 2.0	GS Website
44.	Alternative Energy Development Board (AEDB), Government of Pakistan	National regulation Policy	National regulation Policy for Development of Renewable Energy for Power Generation, 2006	PP
45.	ILO	ILO conventions	https://www.ilo.org/global/lang-en/index.htm	Public Website

46.	UNFCCC	Dedicated project website	Dedicated UNFCCC website of the project https://cdm.unfccc.int/Projects/DB/BVQI1352703902.61/view	UNFCCC Website
47.	Gold Standard Organization	Gold Standard	http://www.goldstandard.org/	Website
48.	UNFCCC	UNFCCC	http://cdm.unfccc.int	Website
49.	VCS	VCS	http://www.v-c-s.org/	Website
50.	IREC	IREC	https://www.irecstandard.org/	Website
51.	World bank	World bank	https://datahelpdesk.worldbank.org/knowledgebase/articles/906519	Website
52.	UN treaty collection	Pakistan ratified "International Convention on the Elimination of all Form of Racial Discrimination" on 21/09/1966; "International Covenant on Civil and Political Rights" on 23/06/2010; and "Convention on the Elimination of all Forms of Discrimination against Women" on 12/03/1996	https://treaties.un.org/Pages/Treaties.aspx?id=4&subid=A&clang=en	Website
53.	UN Treaty Body Database	Pakistan has signed the "CEDAW – Convention on the Elimination of All Forms of Discrimination against Women in 1996	http://tbinternet.ohchr.org/_layouts/TreatyBodyExternal/Treaty.aspx?CountryID=36&Lang=EN	Website
54.	Laws of Pakistan	Pakistan has passed the Prevention of Corruption Act	http://joshandmakinternational.com/resources/laws-of-pakistan/anti-corruption-accountability-laws/the-prevention-of-corruption-act-west-pakistan-extension-ordinance-1958/	Website
55.	ILO	Labor Legislation of Pakistan	https://www.ilo.org/ifpdial/information-resources/national-labour-law-profiles/WCMS_158916/lang-en/index.htm	Website
56.	Dailytimes of Pakistan	Public information	https://dailytimes.com.pk/49828/gender-inequality-in-pakistan/	Website

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

Table 1. FAR from preliminary review

FAR ID	01	Section No.	-	Date : 01/11/2021
Description of FAR				
PD to supply supporting data for all parameters in time for validation/design review, or allocation may be delayed. This includes and is not limited to: ER, IRR spreadsheets, individual study calculations, survey results, study reports etc.				
Project developer response				Date : 30/11/2021
Grid emission factor calculation and ER sheet, Pakistan Energy Yearbooks and Generation license, etc have been provided to GS VVB for validation.				
Documentation provided by project developer				
/1/ version 3 /2/ /22/ /16/ /28/				
VVB assessment				Date: 03/12/2021
All the supporting data for all parameters have been provided by PP to VVB, refer to Appendix 3 for all the referred evidence list and see the detail assessment of each parameter in section D.3.7 of this report. FAR 01 is closed.				

FAR ID	02	Section No.	-	Date : 01/11/2021
Description of FAR				
As per information given in section E of the GS PDD and draft LSC Report submitted by PD, the local stakeholder meeting is not yet conducted. However, PD refer latest GS4GG Rule Update to update the relevant comments received on the project design, sustainable development assessment and safeguarding principles etc., during the delayed physical stakeholder consultation meeting, shall be accounted for and reflected in the project documentation. VVB shall further evaluate project developer's addressal of stakeholder feedback, if any, and provide their opinion in the validation/verification report.				
Project developer response				Date : 30/11/2021
The project is retroactive project as per GS4GG Principles and Requirements. The stakeholder feedback round is implemented in the form of physical stakeholder consultation meeting. The Local stakeholder consultation meeting has been carried out for comments on 20/09/2021 and relevant project documents, incl. non-technical summary, draft GS PDD, etc have been shared with stakeholders to seeking for comments for mor than two months (02/08/2021-02/10/2021). No comments have been received during this period. In addition, continuous input and grievance mechanism, incl comment book, telephone and email of project contact person have been provided to stakeholder for comments (if any) during the implementation of the project.				
Documentation provided by project developer				
/1/ version 3 /3/				
VVB assessment				Date: 03/12/2021
Via checking the SCR/3/, it is confirmed that the information of local stakeholder meeting has been provided detail. Refer to section D.6 of this report for detail assessment of the local stakeholder consultation process and stakeholder feedback round. FAR 02 is closed.				

FAR ID	03	Section No.	-	Date : 01/11/2021
Description of FAR				
Appendix 1 - Safeguarding principle assessment; justification information given by PD under mitigation measures against each principle may be supported/justified with supporting literature, study, rules legislation published by host country. VVB shall assess the justification sought by PD.				
Project developer response				Date : 30/11/2021

Yes, in the safeguarding principle assessment, justification information given by PD under mitigation measures against each principle has been supported by rules legislation, study reports, etc. The supporting document evidences have been provided to GS VVB for validation.	
Documentation provided by project developer	
/1/ version 3 /3/	
VVB assessment	Date: 03/12/2021
The justification information given by PD in the safeguarding principle assessment has been checked, CTI confirmed that each principle has been supported by rules legislation, study reports which have been assessed and checked by VVB during the validation process. Refer to section D.5 of this report for detail assessment of each safeguarding principle. FAR 03 is closed.	

FAR ID	04	Section No.	-	Date : 01/11/2021
Description of FAR				
VVB shall check all the supporting evidence and confirm that the penetration level of wind energy technology in Pakistan is 2.98%				
Project developer response				Date : 30/11/2021
Yes. The Pakistan Energy Yearbook 2019 has been provided to GS VVB for validation.				
Documentation provided by project developer				
/1/ version 3 /22/				
VVB assessment				Date: 03/12/2021
During the validation process, PD has provided the supporting evidence Pakistan Energy Yearbook 2019/22/ via checking the Pakistan Energy Yearbook 2019/22/ which is verified as the latest available version at the time of the first submission to preliminary review, it is confirmed that the ratio of installed capacity of the wind power (1,049MW) to the total grid installed capacity (35,114MW) is 2.98%, hence, it is verified that penetration level of the proposed Renewable Energy Technology type is less than 5%. FAR 04 is closed.				

FAR ID	05	Section No.	-	Date : 01/11/2021
Description of FAR				
VVB shall validate supporting evidence for SDG 7 and 8 during design certification stage.				
Project developer response				Date : 30/11/2021
Regarding SDG7, the feasibility study report indicates net electricity generation, has been provided to GS VVB for validation. Regarding SDG8, the certificate of worker staffs and labour contracts have been provided to GS VVB for validation.				
Documentation provided by project developer				
/1/ version 3 /28/ /29/ /10/				
VVB assessment				Date: 03/12/2021
The supporting evidence for SDG 7 and 8 have been provided to VVB during the validation process. Refer to section D.3.6 and D.3.7 for the detail assessment of SDG 7 and 8 impacts based on the supporting evidence. FAR 05 is closed.				

FAR ID	06	Section No.	-	Date : 01/11/2021
Description of FAR				
All the safeguarding principles assessment shall be supported with evidence/references/expert's opinion. The PP shall provide them for GS VVB validation.				
Project developer response				Date : 30/11/2021
Relevant links and supporting documents have been provided to GS VVB for validation.				
Documentation provided by project developer				
/1/ version 3 /10/ /12/				

VVB assessment	Date: 03/12/2021
The justification information given by PD in the safeguarding principle assessment has been checked, CTI confirmed that each principle has been supported by evidence/references/expert's opinion which have been assessed and checked by VVB during the validation process. Refer to section D.5 of this report for detail assessment of each safeguarding principle. FAR 06 is closed.	

FAR ID	07	Section No.	-	Date : 01/11/2021
Description of FAR				
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 project activity.				
Project developer response				Date : 30/11/2021
The project is registered as CDM in 2012 and now is seeking for upgrading to Gold Standard. With the GS certification, GS CERs will be generated. No other carbon mechanisms is applied and no VERs/RECs are created so far. The project developer confirms that, credits will not be claimed twice for same monitoring period.				
Documentation provided by project developer				
/1/ version 3 /25/ /26/				
VVB assessment				Date: 03/12/2021
The project has been registered under CDM on 14/11/2012 and the UNFCCC Reference No. is 8163. Due to the project has unique identified GPS coordinates and unique identification code, hence, it can't be counted in any other voluntary market or emission reduction mechanism which has been checked by searching these schemes including VCS/49/, IREC/50/ etc. Finally, via checking the Declaration of No Double Counting Statement/25/ and Declaration of not involved in other GHG scheme/26/, CTI confirmed that the emission reductions will not be double counted. In conclusion, CTI verified that Project Developer has provided Gold Standard with satisfactory justification that no double counting of emission reductions occur. FAR 07 is closed.				

FAR ID	08	Section No.	-	Date : 01/11/2021
Description of FAR				
As per Covid-19 Interim Measures para 2.2.1 and 2.2.2, the physical stakeholder consultation meeting, that will be Integrated with stakeholder feedback round, shall be carried out when situation eases. However, the continuous Input and grievance mechanism shall be set up before starting validation of the project.				
Project developer response				Date : 30/11/2021
The physical local stakeholder consultation meeting was held on 20/09/2021, and the continuous input and grievance mechanism, incl. comment book, telephone access and email access have been set up before the validation starts.				
Documentation provided by project developer				
/1/ version 3 /3/				
VVB assessment				Date: 03/12/2021
Via checking the SCR/3/, it is confirmed that the information of local stakeholder meeting has been provided detail. Refer to section D.6 of this report for detail assessment of the local stakeholder consultation process and stakeholder feedback round. FAR 08 is closed.				

FAR ID	09	Section No.	-	Date : 01/11/2021
Description of FAR				
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.	
Project developer response	Date : 30/11/2021
Yes. The relevant stakeholders from all categories have been invited for the stakeholder consultation meeting via public invitation, email, telephone etc. The invitation has been sent on 17/08/2021, which is more than 30 days before the meeting on 20/09/2021; The original evaluation forms, incl. 4-5 samples in English have been provided to GS VVB for validation; The sustainable development assessment has been conducted in the consultation meeting. See local stakeholder consultation report for details.	
Documentation provided by project developer	
/1/ version 3 /3/	
VVB assessment	Date: 03/12/2021
Via checking the SCR/3/, it is confirmed that the information of local stakeholder meeting has been provided detail. Refer to section D.6 of this report for detail assessment of the local stakeholder consultation process and stakeholder feedback round. FAR 09 is closed.	

FAR ID	10	Section No.	-	Date : 01/11/2021
Description of FAR				
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.				
Project developer response				Date : 30/11/2021
The stakeholder feedback round has been conducted for two months of period and the relevant documents, incl. draft GS PDD, non-technical summary, draft GS stakeholder consultation report, final CDM PDD, final CDM validation report, Validation opinion on Post-registration Change, etc have been public for comments; All the stakeholders, incl. the attendees of the local stakeholder meeting, have been invited for comments during SFR.				
Documentation provided by project developer				
/1/ version 3 /3/				
VVB assessment				Date: 03/12/2021
Via checking the SCR/3/, it is confirmed that the information of local stakeholder meeting has been provided detail. Refer to section D.6 of this report for detail assessment of the local stakeholder consultation process and stakeholder feedback round. FAR 10 is closed.				

FAR ID	11	Section No.	-	Date : 01/11/2021
Description of FAR				
VVB shall check the land ownership documents and confirm that land ownership details.				
Project developer response				Date : 30/11/2021
The signed Land taking over document, between Alternative Energy Development Board (AEDB) Government of Pakistan and Sapphire Wind Power Company Ltd, dated 05/04/2008, has been provided to GS VVB for validation.				
Documentation provided by project developer				
/1/ version 3 /20/				
VVB assessment				Date: 03/12/2021
The signed Land taking over document/20/ has been provided by PD which is verified to confirm that land ownership details that the project land is the principal property of Government of Sindh, and the project owner leased the land from Government of Sindh for wind farm construction and operation for more than 60 years. FAR 11 is closed.				

Table 2. CL from this validation

CL ID	01	Section no.	A.1.1	Date : 01/11/2021
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Description of CL	
For the justification of section 3.1.1 of GS4GG Principles and Requirements, version 1.2 in section A.1.1,	
1. The third condition is not clarified completely. Information of avoid double counting is not clarified. 2. The fourth condition is not clarified correctly. If the project in line with the legal, environmental, ecological and social regulations is not clarified. 3. The fifth condition is not clarified completely, documentation by the governing jurisdiction that proves that the entity is in good standing is not provided and clarified.	
Project developer response	Date : 30/11/2021
1. Yes. More info about avoiding double counting has been added. See section A.1.1 of GS PDD (version 3). The project is registered as CDM on 14/11/2012 and now is seeking for GS registration to have GS labelling on CERs. Apart from GS and CDM, no other voluntary or compliance standard has been applied. In addition, GS CERs and GS VERs will not be issued for the same monitoring period of the project, to avoid double Counting. The project area does not overlap with any project with GS or other voluntary or compliance standard, therefore, no double counting of impacts exists 2. Yes. More info is added. See GS PDD (version 3) for details. The Initial Environment Examination (IEE) report of the project has been conducted in line with in compliance with Pakistan Environmental Protection Act (PEPA), 1997 and submitted to EPA (Environmental Protection Agency) on 20/06/2009. The project is in compliance with Policy for Development of Renewable Energy for Power Generation, 2006, which is issued by Alternative Energy Development Board (AEDB), Government of Pakistan⁴. The feasibility study of the project was conducted in 09/2009 and approved by AEDB on 16/10/2009. The project got Generation license on 24/04/2015 and started commercial operation since 22/11/2015. The project is in compliance with legal, social, environment and ecological regulations. 3. Yes. More info is added. See GS PDD (version 3) for details. Sapphire Wind Power Company Ltd has registration number 0058992 and registered office in Karachi. UPM Umwelt-Projekt-Management GmbH was registered in Munich Germany and has registered with the Commercial Register B of the Local Court of Munich under HRB 95277. Both entities are in a good standing, the relevant documents have been provided to GS VVB for validation.	
Documentation provided by project developer	
/1/ version 3 /8/ /25/ /26/	
VVB assessment	Date: 03/12/2021
1. The revised PDD is checked, it is verified that the third condition has been clarified completely, the information of avoid double counting has been clarified. 2. The revised PDD is checked, it is verified that the fourth condition has been clarified completely. 3. The revised PDD is checked, it is verified that the fifth condition has been clarified completely. Refer to section section D.2 of this report for detail assessment of each condition. CL 01 is closed.	

CL ID	02	Section no.	A.1.1	Date: 01/11/2021
Description of CL				
For the justification of "Renewable Energy Activity Requirements" in section A.1.1, the justifications are not completely corresponding to the criteria in "Renewable Energy Activity Requirements".				
Project developer response				Date: 30/11/2021
Yes, more justifications have been added as per the "Renewable Energy Activity Requirements". See section A.1.1 of GS PDD (version 3).				
Documentation provided by project developer				
/1/ version 3				
VVB assessment				Date: 03/12/2021
The revised PDD is checked, it is verified that the justifications have been provided completely corresponding to the criteria in "Renewable Energy Activity Requirements". Refer to section section D.2 of this report for detail assessment of each criteria in "Renewable Energy Activity Requirements". CL 02 is closed.				

CL ID	03	Section no.	A.1.1	Date: 01/11/2021
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⁴ <http://www.aedb.org/Documents/Policy/REpolicy.pdf>

Description of CL	
In section A.1.1 of PDD, the justification of Eligibility Criteria from Para 1-9 in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) is not clarified.	
Project developer response	Date: 30/11/2021
Yes, justification of Eligibility Criteria from Para 1-9 in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0) is provided. See section A.1.1 of GS PDD (version 3).	
Documentation provided by project developer	
/1/ version 3	
VVB assessment	Date: 03/12/2021
The revised PDD is checked, it is verified that the justifications have been provided completely corresponding to the criteria in "GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0)". Refer to section D.2 of this report for detail assessment of each criteria in GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0). CL 03 is closed.	

CL ID	04	Section no.	B.2	Date: 01/11/2021
Description of CL				
1. The scope of applied methodology is not justified with applicability. 2. The applicability analysis of Tool to calculate the emission factor for an electricity system (Version 07.0) is missing.				
Project developer response				Date: 30/11/2021
1. The scope of applied methodology is justified, see section B.2 of GS PDD (version 3). 2. The applicability conditions of Tool to calculate the emission factor for an electricity system (Version 07.0) is provided. See section B.2 of GS PDD (version 3).				
Documentation provided by project developer				
/1/ version 3				
VVB assessment				Date: 03/12/2021
1. The revised PDD is checked, CTI confirmed that the scope of applied methodology has been justified. 2. The revised PDD is checked, CTI confirmed that the the justifications to the applicability conditions of Tool to calculate the emission factor for an electricity system (Version 07.0) have been added accordingly. Refer to section D.3.2 of this report for detail assessment. CL 04 is closed.				

CL ID	05	Section no.	Appendix 1	Date: 01/11/2021
Description of CL				
In section Appendix 1 of PDD 1. For Principle 2. Gender Equality, the actual results from local stakeholders consultation of the project is not clarified. 2. For Principle 2. Gender Equality, summary of opinions and recommendations of an Expert Stakeholder(s) is not clarified. 3. For Principle 3 and 9.1, 9.2, the risks have been identified and mitigation measures are provided, however, PD choose "No" for Justification of Relevance, clarification is requested.				
Project developer response				Date: 30/11/2021
1. Yes, the local stakeholder consultation meeting has been completed on 20/09/2021 and the actual results have been updated. See Appendix 1 of GS PDD (version 3). 2. Yes, the opinion of expert stakeholder is provided. See Appendix 1 of GS PDD (version 3). The representative of National Commission for Human Development (NCHD), whose mission is to improve access to basic education and healthcare in the Pakistan's poorest communities, have been invited for comments on gender equality for this project. It's indicated that local customs and cultural restrictions don't allow women to attend any public gatherings but women stakeholders are encouraged to provide comments indirectly via their husbands, etc. No negative comments were raised on gender equality for the project. 3. Justification of Relevance has been revised to be "Yes" for Principles 3, 9.1 and 9.4. See Appendix 1 of GS PDD (version 3).				
Documentation provided by project developer				
/1/ version 3				
VVB assessment				Date: 03/12/2021

1. The revised PDD is checked, CTI confirmed that the actual results from local stakeholders consultation of the project has been clarified in the Principle 2. Gender Equality.
2. The revised PDD is checked, CTI confirmed that the summary of opinions and recommendations of an Expert Stakeholder(s) has been clarified in the Principle 2. Gender Equality.
3. The revised PDD is checked, CTI confirmed that the justification of Relevance has been revised to be "Yes" for Principles 3, 9.1 and 9.4 which is verified as correct and reasonable.
Refer to section section D.5 of this report for detail assessment of each principle.
CL 05 is closed.

CL ID	06	Section no.	D.2	Date: 01/11/2021
Description of CL				
In section D.2 of PDD, for question 3 and 4, the actual situation of invitation of the Expert for the Gender Safeguarding Principles & Requirements is not clarified.				
Project developer response				Date: 30/11/2021
Yes, more info about the Expert for the Gender Safeguarding Principles & Requirements has been clarified, see D.2 of GS PDD (version 3). The representative of National Commission for Human Development (NCHD), whose mission is to improve access to basic education and healthcare in the Pakistan's poorest communities, have been invited and consulted to provide comment on Gender issues for the project. It's indicated that local customs and cultural restrictions don't allow women to attend any public gatherings but women stakeholders are encouraged to provide comments indirectly via their husbands, etc. No negative comments were raised on gender equality for the project.				
Documentation provided by project developer				
/1/ version 3				
VVB assessment				Date: 03/12/2021
The revised PDD is checked, CTI verified that the actual situation of invitation of the Expert for the Gender Safeguarding Principles & Requirements has been clarified. Refer to section section D.5 of this report for detail assessment of question 3 and 4. CL 06 is closed out.				

CL ID	07	Section no.	E.1	Date: 01/11/2021
Description of CAR				
In section E.1, the actual situation of stakeholder consultation physical meeting and summary of stakeholder mitigation measures is not provided.				
Project developer response				Date: 30/11/2021
Yes, the stakeholder consultation meeting situation has been updated in the GS PDD (version 3). The relevant stakeholders from all categories have been invited for the stakeholder consultation meeting via public invitation, email, telephone etc. The invitation has been sent on 17/08/2021 and the Local stakeholder consultation meeting has been carried out for comments on 20/09/2021. All the attendees support this project. Relevant project documents, incl. non-technical summary, draft GS PDD, CDM PDD, CDM validation report, etc have been shared with stakeholders to seeking for comments for more than two months (08/08/2021-08/11/2021). No comments have been received during this period.				
Documentation provided by project developer				
/1/ version 3				
VVB assessment				Date: 03/12/2021
The revised PDD is checked, CTI confirmed that the actual situation of stakeholder consultation physical meeting and summary of stakeholder mitigation measures is provided. Refer to section D.6 of this report for detail assessment. CL 07 is closed.				

Table 3. CAR from this validation

CAR ID	01	Section no.	All	Date: 01/11/2021
Description of CAR				
The name of the applied methodology is not correct.				
Project developer response				Date: 30/11/2021
Yes, revised. See GS PDD (version 3).				
Documentation provided by project developer				
/1/ version 3				
VVB assessment				Date: 03/12/2021

The revised PDD is checked, it is confirmed that the updated name is correct by checking the UNFCCC website. CAR 01 is closed.

CAR ID	02	Section no.	A.1.1	Date: 01/11/2021
Description of CAR				
For the “Renewable Energy Activity Requirements”, the version is not the latest one.				
Project developer response				Date: 30/11/2021
Yes, revised. “Renewable Energy Activity Requirements” (version 1.4) is applied, see GS PDD (version 3).				
Documentation provided by project developer				
/1/ version 3				
VVB assessment				Date: 03/12/2021
The revised PDD is checked, CTI confirmed that the version of “Renewable Energy Activity Requirements” has been updated to 1.4 which is confirmed as the latest issued version by GS. CAR 02 is closed.				

CAR ID	03	Section no.	B.3	Date: 01/11/2021
Description of CAR				
The project boundary listed in the figure is not consistent with the description.				
Project developer response				Date: 30/11/2021
Yes, revised. see GS PDD (version 3).				
Documentation provided by project developer				
/1/ version 3 /15/				
VVB assessment				Date: 03/12/2021
The revised PDD is checked, CTI confirmed that the project boundary listed in the figure is consistent with the description which is confirmed in line with the Energy purchase agreement/15/. CAR 03 is closed.				

CAR ID	04	Section no.	B.6.1	Date: 01/11/2021
Description of CAR				
- For SDG 7, the ex ante and ex post determine method for the value is not specified. - For SDG 8, PD mentioned the project create jobs and trainings are carried out, however, in the other section, the monitoring indicator only include the number of jobs created.				
Project developer response				Date: 30/11/2021
- More info regarding SDG7 is added, see section B.6.1 of GS PDD (version 3). SDG 7: Affordable and Clean Energy Baseline: Prior to the start of implementation of the project activity, there is no power generation unit at the site of the project and no clean energy is available in the baseline. Project: The project generates and supplies 137,500MWh electricity to the grid. This is ex ante, the actual data will be monitored ex post by electricity meter. - Revised. Number of jobs created is taken as monitoring indicator. See section B.6.1 of GS PDD (version 3).				
Documentation provided by project developer				
/1/ version 3				
VVB assessment				Date: 03/12/2021
- The revised PDD is checked, CTI confirmed that the ex ante and ex post determine method for the value has been specified. - The revised PDD is checked, CTI confirmed that only number of jobs created is taken as monitoring indicator which is verified as consistent with other parts of MR. Refer to section D.3.6 of this report for detail assessment. CAR 04 is closed.				

CAR ID	05	Section no.	B.6.3	Date: 01/11/2021
Description of CAR				
The ex ante estimation of SDG Impact for SDG 7 and 8 are missing in section B.6.3.				
Project developer response				Date: 30/11/2021
Yes, added in section B.6.3 of GS PDD (version 3). SDG 7: Affordable and Clean Energy				

Baseline: Prior to the start of implementation of the project activity, there is no power generation unit at the site of the project and no clean energy is available in the baseline. Project: The project generates and supplies 137,500MWh electricity to the grid. This is ex ante, the actual data will be monitored ex post by electricity meter. Net impact: The project supplies 137,500MWh clean electricity to grid. SDG 8: Decent work and Economic Growth Baseline: In the absence of the project, no jobs are created. Project: The project implementation creates 20 permanent skilled jobs, incl. Project director, plant manager, operation & maintenance manager, electrical manager, operation engineers, maintenance engineer, etc. Net impacts: 20 jobs are created due to this project.	
Documentation provided by project developer	
/1/ version 3	
VVB assessment	Date: 03/12/2021
The revised PDD is checked, CTI confirmed that the ex ante estimation of SDG Impact for SDG 7 and 8 are provided. Refer to section D.3.6 of this report for detail assessment of two SDGs. CAR 05 is closed.	

CAR ID	06	Section no.	B.6.3	Date: 01/11/2021
Description of CAR				
In section B.6.3 of PDD, 1. PD calculated the EF for year 2010 as ex ante calculation result which is not the latest data when submitted for pre-liminary review, revision is requested. 2. PP stated that the five most recent year value has been calculated for low-cost/must-run resources, however, the year 2006 to 2010 are not the five most recent year.				
Project developer response				Date: 30/11/2021
1. Yes, revised, EF for year 2020, using the latest Pakistan Energy Yearbook 2019, is calculated as ex ante. See Section B.6.3 of GS PDD (version 3). 2. Yes, revised. Values of most recent years have been applied for OM calculation. See ER sheet for details.				
Documentation provided by project developer				
/1/ version 3				
/22/				
VVB assessment				Date: 03/12/2021
1. The revised PDD is checked, CTI confirmed that the EF for year 2020 using the latest Pakistan Energy Yearbook 2019/22/ is calculated as ex ante which is verified as the latest data for EF calculation when submitted for GS preliminary review. 2. The revised PDD is checked, CTI confirmed that the five most recent year (2015 to 2019) value has been calculated for low-cost/must-run resources which is verified as the latest data version via checking the latest Pakistan Energy Yearbook 2019/22/. CAR 06 is closed.				

CAR ID	07	Section no.	B.7.1	Date: 01/11/2021
Description of CAR				
For parameter $EG_{facility,y}$, 1. PP stated this is a SDG 7 indicator, SDG 13 is missing. 2. The description for $EG_{facility,y}$ under SDG 7 and 13 is not same, specification is requested. 3. PP stated that the metering points to record the electricity export and import, however, the relationship of electricity export and import and net is not specified clearly.				
Project developer response				Date: 30/11/2021
1. Yes, revised. 2. The description of $EG_{facility,y}$ is revised. 3. Yes, revised. The following parameters are measured: (i) The quantity of electricity supplied by the project plant/unit to the grid ($EG_{export,y}$); and (ii) The quantity of electricity delivered to the project plant/unit from the grid ($EG_{import,y}$) Difference between $EG_{export,y}$ and $EG_{import,y}$ is taken as $EG_{facility,y}$				
Documentation provided by project developer				
/1/ version 3				

VVB assessment	Date: 03/12/2021
1. The revised PDD is checked, CTI confirmed that the SDG indicator No. has been corrected. 2. The revised PDD is checked, CTI confirmed that the description of EG _{facility,y} has been revised to be correct. 3. The revised PDD is checked, CTI confirmed that the relationship of electricity export and import and net has been specified clearly which confirmed in line with the CDM PDD and consistent with actual monitoring situation of the net power. CAR 07 is closed.	

CAR ID	08	Section no.	B.6.1	Date: 01/11/2021
Description of CAR				
1. For SDG 8, the indicator listed in this section is not same to other section.				
2. Source of data is not complete, supporting evidence is missing.				
Project developer response				Date: 30/11/2021
1. Revised. For SDG 8, the monitoring indicator is "Number of jobs created".				
2. Revised. Certificates of workers will be provided for SDG8 monitoring.				
Documentation provided by project developer				
/1/ version 3				
/28/				
VVB assessment				Date: 03/12/2021
1. The revised PDD is checked, CTI confirmed that only number of jobs created is taken as monitoring indicator which is verified as consistent with other parts of MR.				
2. The revised PDD is checked, CTI confirmed that the supporting evidence Certificates of workers/28/ has been added as the source of data which is verified as correct.				
CAR 08 is closed.				

CAR ID	09	Section no.	B.7.3	Date: 01/11/2021
Description of CAR				
1. The monitoring objects are not complete for all SDGs. 2. The monitoring system flow chart is missing. 3. Data collection procedure is missing. 4. The calibration approach for meters are not consistent in the whole PDD. 5. QA/QC and Emergency procedure are missing.				
Project developer response				Date: 30/11/2021
1. Revised. The monitoring objects have been provided completely. see GS PDD (version 3). For SDG7 and SDG 13, the main monitoring objects are the electricity delivered to the grid and the grid emission factor. To calculate the grid emission factor, the following parameters are monitored: - Amount of fossil fuel type i consumed in the project electricity system in year y ($FC_{i,y}$); - Net calorific value (energy content) of fossil fuel type i in year y ($NCV_{i,y}$); - CO₂ emission factor of fossil fuel type i used in power unit m in year y ($EF_{CO_2,i,y}$); - Net electricity generated by the project electricity system in year y (EG_y); - Average net energy conversion efficiency of power unit m in year y ($\eta_{m,y}$) For SDG8, the number of jobs created during project implementation is monitored. 2. The monitoring flow charts is provided, see GS PDD (version 3). 3. Data recording, collection and reporting has been provided in GS PDD (version 3); 4. The calibration approach for electricity meters have been provided in GS PDD (version 3); 5. Added. See section B.7.3 of GS PDD (version 3).				
Documentation provided by project developer				
/1/ version 3 /15/				
VVB assessment				Date: 03/12/2021
1. The revised PDD is checked, CTI confirmed that monitoring objects are complete corresponding to all SDGs. 2. The revised PDD is checked, CTI confirmed that monitoring system flow chart has been added which is same to the CDM previous monitoring reports/6/ and verified as actual by checking the Energy purchase agreement/15/. 3. The revised PDD is checked, CTI confirmed that the data collection procedure has been added which is confirmed as actual by checking the CDM previous monitoring reports/6/. 4. The revised PDD is checked, CTI confirmed that the calibration approach for meters has been updated to be consistent in the whole MR.				

5. The revised PDD is checked, CTI confirmed that the QA/QC and emergency procedure is added accordingly.
 Refer to section D.3.7 in this report for detail assessment.
 CAR 09 is closed.

Table 4. FAR from this validation

FAR ID	01	Section No.	-	Date : 11/03/2022
Description of FAR				
The effectiveness of the grievance mechanism shall also be checked by interviewing the local stakeholders during the initial GS verification of the project.				
Project developer response				Date : -
-				
Documentation provided by project developer				
-				
VVB assessment				Date: 11/03/2022
Will be checked in the initial GS verification process.				

FAR ID	02	Section No.	-	Date : 11/03/2022
Description of FAR				
All relevant registries (domestic and international) that could hold RECs from the project activity e.g. RECs, I-RECs etc. shall also be checked for the avoidance of double counting during the initial GS verification of the project.				
Project developer response				Date : -
-				
Documentation provided by project developer				
-				
VVB assessment				Date: 11/03/2022
Will be checked in the initial GS verification process.				