

GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG) REPORT

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DESIGN CERTIFICATION (VALIDATION)



Project Title: West Bakr Wind Farm Project
GS project ID: GS 7739
Internal ID: BELL_CDM_2021_EGY Ras Ghareb WPP_GS_VAL
Customer: Lekela Egypt Wind Power BOO (S.A.E.)
Date: 31/10/2022
Revision: 2.0

SUMMARY			
Reference No.	Date (first version)	Version No.	Date (last version)
BELL_CDM_2021_EGY Ras Ghareb WPP_GS_VAL	19/04/2022	02	31/10/2022
Client	Lekela Egypt Wind Power BOO (S.A.E.)		
Project Title	West Bakr Wind Farm Project		
Project Participants	Lekela Egypt Wind Power BOO (S.A.E.)		
Project Location	The Project activity is located at Village: Ras Ghareb State: Red Sea Governorate in Egypt		
Contact Person	Mr. Mamdouh Higazy		
GS4GG Version: GS4GG, Ver. 1.2 GS4GG Activity Requirements: RE Activity Requirements Applied Methodology Version: ACM0002 Version 20.0 https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5P The following tools and guidance's have been followed (References): - Tool to calculate the emission factor for an electricity system¹ - Version 07.0 (EB 100, Annex 04) - Tool for the demonstration and assessment of additionality- Version 07.0.0 Current Methodology Version: ACM0002 Version 20.0			GS4GG Principles and Requirements V 1.2 UNFCCC CDM Sectoral Scope: 1 GS4GG Scope: 2 Technical Area: 1.2
GS4GG First PDD Version: 02 Date: 30/05/2021			GS4GG Final PDD Version: 03 Date: 07/02/2022
Estimated Annual Emission Reductions: 531,674 tCO ₂ e per year			
Selected Sustainable Development Goals (SDGs): 7; 8; 13 Estimated Sustainable Development Contributions			
Sustainable Development Goals Targeted	SDG Impact	Estimated Annual Average	Units or Products
SDG 7: Affordable and Clean Energy	MWh of renewable energy generated	1,197,600	MWh/Annum
SDG 8: Decent Work and Economic Growth	Trainings	01	No of Training
	Employees	15	No of Employees
SDG 13: Climate Action (mandatory)	Emission Reduction	531,674	tCO ₂ /Annum (GS VERs)
Design Certification Summary			
LGAi Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Lekela Egypt Wind Power BOO (S.A.E.) to perform the GSVER validation of "West Bakr Wind Farm Project" applying the methodology ACM0002 version 20.0. The management of Lekela Egypt Wind Power BOO (S.A.E.) is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.			

¹ <http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

A desk review and a remote audit have been conducted to verify the data submitted in the GS4GG PDD. Applus+ Certification confirms the following have been reviewed:

- a. The GS4GG PDD;
- b. The applied monitoring methodology;
- c. Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
- d. The Gold Standard for Global Goals "Principles and Requirements" Version 1.2
- e. All information and references relevant to the project activity's resulting in estimated emission reductions.

The scope of the validation is defined as an independent and objective review of the project design document, against the Kyoto Protocol requirements, UNFCCC rules, applicable CDM requirements and requirement of Gold Standard. The validation report is finalized based on the assessment of the Gold Standard GS4GG PDD, and applying standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable approved methodology and underlying formulae and calculations.

The report and the annexed validation checklist describe a total of 06 findings which include:

- 05 Corrective Action Requests (CARs);
- 01 Clarification Requests (CLs/CRs);
- 00 Forward Action Requests (FARs).

The PP has responded these findings by modifying the Gold Standard GS4GG PDD and providing adequate additional explanations and evidences. Applus+ Certification confirm that all the findings have been "closed out" before submitting the request for registration to GS board.

As a summary of the validation, the review of the Gold Standard GS4GG PDD and the subsequent follow-up interviews have provided Applus+ Certification with sufficient evidence for the determination of the project's fulfillment with all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and requirement of Gold Standard. Therefore, Applus+ Certification recommend the project for registration by the GS Registry as GS VERs project.

ASSESSMENT TEAM			
Team Members	Type of Resource ²		Organization (for OEs)
Lead Auditor: Mr. Ravi Kant Soni	☐ IR	☒ EI ☐ OE	-
Technical Expert and Financial Expert: Mr. Ravi Kant Soni	☐ IR	☒ EI ☐ OE	-
Technical Reviewer: Simon Shen	☐ IR	☒ EI ☐ OE	-

² IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

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

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Appendix:

Appendix 1: Corrective Action Request / Clarification Request / Forward Action Request resolution table.

Appendix 2: Audit Team CVs.

1. INTRODUCTION

Lekela Egypt Wind Power BOO (S.A.E.) has commissioned Applus+ Certification to perform a validation of "West Bakr Wind Farm Project" (hereafter referred to as the project activity) at Village: Ras Ghareb, State: Red Sea Governorate in Egypt. This validation report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM/GS Executive Board as well as requirement of Gold Standard.

The project activity primarily aims at reducing Green House Gas (GHG) emissions through utilization of renewable energy technology for generation of electrical energy. The electricity generated from the project activity (approximately 1,197,600 MWh annually) will displace equivalent electricity generation in grid connected power plants. The project activity will reduce the anthropogenic GHG emissions (approximately 531,674 tCO₂ annually and 2,658,370 tCO₂ through the crediting period) associated with the equivalent amount of electricity generation from Egyptian grid connected power plants predominantly fossil fuel based.

The project activity involves installation and operation of 252 MW Wind Power project grid connected wind power plant in the village Ras Ghareb state of Red Sea Governorate in Egypt. The electricity generated from the project activity will be exported to Egyptian Grid and third party.

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

The project activity consists of 96 WTGs of individual capacity 2.625 MW each, resulting the total cumulative capacity of 252 MW; which involves operation of Wind Power Project located at, Village: Ras Ghareb State: Red Sea Governorate in Egypt. The project is promoted by Lekela Egypt Wind Power BOO (S.A.E.).

The details of project are as below:

Project Name	Investors'	Commissioning Date (start of commercial operation)	Capacity in MW	District	State
Lekela Egypt Wind Power BOO (S.A.E.)		13/11/2021	252 MW	Village: Ras Ghareb	Red Sea Governorate, Egypt

The same is confirmed during remote audit through Letter of Award and copy of PPA shared by PD.

1.1 Objective

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

1.2 Scope

The validation scope is defined as an independent and objective review of the project PDD, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against all applicable CDM and GS requirements including the approved baseline and monitoring methodology ACM0002 Version 20.0. The validation was based on the requirements in the Validation and Verification Standard version 03 and Gold Standard GS4GG requirement.

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

2. METHODOLOGY

The project assessment is based on the Clean Development Mechanism Validation and Verification Standard for project activities, version 2.0, Gold Standard requirement for GS4GG and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the project activity are appointed. Once the project is made available for Applus+ Certification, the members of the assessment team carried out:

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

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

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

Validation Checklist Table 3: Resolution of Audit Findings			
Type:	☒ CAR	☒ CL/CR	☐ FAR
Number:			
Raised by:	Ravi Kant Soni		
Description of the audit finding	Date:		
The description of the audit finding should be clearly included here.			
Project Participant's response	Date:		
The responses given by the project participants during the communications with the validation team should be included here.			
Documentation provided as evidence by Project Participant			
The evidences provided by the project participants should be included here.			

Auditor's assessment comment	Date:	
This section should include how the audit finding is assessed by the assessment team.		

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

2.1 Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, LGAI Technological Center, S.A. (Applus+ Certification) has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAI Technological Center, S.A. (Applus+ Certification).

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

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

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

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

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Ravi Kant Soni	LA/TE	YES	YES	YES	NA
Mr. Simon Shen	TR	YES	YES	YES	NA

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

2.2 Document review

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

2.3 Follow up Interviews

As a result of the COVID-19 pandemic, taking into account the rules of relevant national and local authorities (local to the VVB offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the VVB and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return from specific countries), the VVB has skipped the on site visit. As COVID -19 situation is going to stay for a while, and it seems that restoration of normal situation will take time and PP has requested to proceed with project validation as delay could have some financial implication on PP. Hence the site visit could not be postponed for this project activity.

Furthermore, as per the clause 3.2.1 of SITE VISIT AND REMOTE AUDIT REQUIREMENTS AND PROCEDURES, v 01 "A physical site visit by VVB is not mandatory at the validation (Design Certification or Design Certification Renewal) of a Project". Hence it is justified to not conduct the physical site visit for validation of the Project.

However as per the COVID 19 Interim Measures by GS4GG, the VVB may use alternative measures for auditing like remote audits. As per para 4.1.1 (b) of COVID 19 Interim Measures, Validation team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of verification of the PA. Along with desk review, audit team has conducted remote audit interview corresponding to the PA as follows:

A complete desk review of the PDD as well as all applicable country legal requirement and supportive evidences have been checked by the validation team.

- Validation team has performed virtual interview (Zoom App) with PP in order to check implementation, current situation, evaluation of data management, QA/QC system, project technology, training provided, monitoring, calibration etc. Interview questions were filled as per Validation team interview checklist. Cross checks between information provided by interviewed personnel (i.e. by checking sources) to ensure that no relevant information has been omitted.
- Validation team has performed interview with randomly selected local stakeholders to check the monitoring of GS sustainable parameters like employment and training, environmental and other relevant issues.
- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in the PDD and supporting documents.

Details of interviewees, topics covered and additional information presented below:

Interviewed Personnel	Functions	Organization	Date	Subject
Mr. Mamdouh Higazy	PP representative	Lekela Egypt Wind Power BOO (S.A.E.)	25/10/2021 (Remote interview via Zoom)	General aspects of the project, Quality management system, Monitoring data management, Data analysis, Implementation of the project, GHG emission reduction calculation, Involved personnel and responsibilities, Training and practice of the operational personnel, Monitoring data management, Maintenance, Compliance to regulatory requirements, Environmental and social issues, Projects contribution to sustainable development
Mr. Nader Hassan	PP representative	Lekela Egypt Wind Power BOO (S.A.E.)		
Mr. Nikunj Agarwal	Projet Representative	First Climate A.G.		
Mrs. Richa Thakur	Consultant	Infinite Solutions		

2.4 Resolution of Clarification and Corrective Action requests

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

The Gold Standard GS4GG PDD version 03 dated 07/02/2022 serves as the basis for the final assessment presented.

2.5 Internal Quality Control

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

After confirmation of the PP the validation opinion and relevant documents are submitted to the GS Registry.

3. PROJECT DESIGN CERTIFICATION ASSESSMENT

3.1 Approval

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

3.2 Participation

Lekela Egypt Wind Power BOO (S.A.E.) is the project proponent from the host party Egypt. The host country involved is parties to the Kyoto Protocol and meet and requirements to participate in the Gold Standard.

3.3 Scale of the project

The project activity is identified as a Large-scale project in section A.4 of the GS4GG PDD applying a large-scale methodology ACM0002 version 20. The total capacity of the power project is 252 MW as validated from the PPA and Letter of Award. Since the design capacity of the project activity is more than 15 MW, which is stipulated limit for small scale projects by GS/CDM, the project is correctly classified as large-scale project. Assessment team also checked the requirement of latest applicable methodology ACM0002 version 20.0 and confirms that the project qualifies the requirement of the latest methodology also (i.e. scale, applicability, baseline, additionality and monitoring)

a) Type of project: The project activity involves electricity generation using wind turbines to reduce atmospheric CO₂ emission by replacing equivalent amount of electricity from the grid of Egypt. The project type is identified as renewable energy project in section A.1.1 of the GS4GG PDD. The project activity complies with the requirement of 'the generation and delivery of energy services (e.g. electricity) from non-fossil and non-deployable energy sources' as defined in GS4GG. The project activity generates and supplies renewable electricity to the regional grid

thereby displacing the electricity which would have generated in fossil fuel-based power plants connected to the grid.

3.4 Greenhouse Gases

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

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

	Source	Gas	Included?	Justification/Explanation
Baseline	Grid connected electricity generation	CO ₂	Yes	Main emission source
		CH ₄	No	Minor emission source
		N ₂ O	No	Minor emission source
		Other	No	No other emissions are emitted from the project
Project	Greenfield Wind Power Project Activity	CO ₂	No	No CO ₂ emissions are emitted from the project
		CH ₄	No	Project activity does not emit CH ₄
		N ₂ O	No	Project activity does not emit N ₂ O
		Other	No	Project activity does not emit other forms of GHG emissions

3.5 Project timeframe

Other certification scheme: The project activity has not applied, confirmed by project developer, for any other certification like Green or White certification. Therefore, the validation team concluded that the project activity meets the applicability criteria of Gold Standard. Assessment team checked the double counting clarification vide GS guideline on double counting in the context of Green Certificate Schemes, 22/01/2015. During validation, PD confirmed that this Project is solely developed as standalone GS VER Project and submitted a declaration that there will not be double accounting of emission reduction for the project activity.

3.6 Project Boundary

As per ACM0002 version 20 i.e. latest methodologies applied as available on CDM website - "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the GS project power plant is connected to". The project boundary includes the wind project, sub-stations, grid and all power plants connected to grid. The proposed project activity will evacuate power to the EGYPTIAN grid. Therefore, the entire EGYPTIAN grid and all connected power plants have been considered in the project boundary for the proposed GS project activity. The same is checked by the assessment team during the remote validation audit and found correct.

3.7 Baseline Identification

Being a grid connected wind energy generation project, PP developed the project based on the Methodology ACM0002 version 20.0. As per the methodology version 20.0: "If the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the

combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

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

The combined margin ($EF_{grid,CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM). Calculations for this combined margin must be based on data from an official source (where available) and made publicly available. The Annual Report of Egyptian Electricity Holding Company, Ministry of Electricity Renewable Energy³ was the latest available data source at the time of PDD submission to VVB for validation, hence same is considered for emission factor calculations.

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

Parameter	Value	Nomenclature	Source
$EF_{grid,CM,y}$	0.4440 tCO ₂ /MWh	Combined margin CO ₂ emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from Annual Report of Egyptian Electricity Holding Company, Ministry of Electricity Renewable Energy.
$EF_{grid,OM,y}$	0.4815 tCO ₂ /MWh	Operating margin CO ₂ emission factor for the project electricity system in year y	Calculated as the last 3 year (2017-18, 2018-19 and 2019-20) generation-weighted average, sourced from Annual Report of Egyptian Electricity Holding Company, Ministry of Electricity Renewable Energy.
$EF_{grid,BM,y}$	0.3313 tCO ₂ /MWh	Build margin CO ₂ emission factor for the project electricity system in year y	Baseline CO ₂ Emission for the most recent year 2019-20 Annual Report of Egyptian Electricity Holding Company, Ministry of Electricity Renewable Energy.

3.8 Eligibility Principles Assessment

Principle 1. Contribution to Climate Security & Sustainable Development

The baseline scenario and the emission reduction calculations have been performed as per the PDD. The emission factor of grid, in the GS PDD, has been calculated in-line with the provisions of applied methodology ACM0002 version 20.0. The latest applicable version of “Tool to calculate the emission factor for an electricity system” is version 07.

³ http://www.moee.gov.eg/english_new/report.aspx

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

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

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

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

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

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

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

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

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

- OM, BM and CM are estimated using the tool under section B.6.1 of the PDD for calculating baseline emissions.
- The project activity is grid connected and thus emission factor is calculated and thus OM, BM and CM are estimated using the tool under section B.6.1 of the PDD for calculating baseline emissions.
- The project activity is located in Egypt, a non-Annex I country. Therefore, this criterion is not applicable for the project activity.
- The project activity is a grid connected wind power project and not a hydro power plant. Therefore, this criterion is not applicable for the project activity.

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

VVB also confirms that the project activity complies with the requirement of baseline determination in ACM0002 version 20.0, which is the latest applicable methodology available to the project participant. The project activity applies grid emission factor as per the latest available The Annual Report of Egyptian Electricity Holding Company, Ministry of Electricity Renewable Energy and the emission factor applied is 0.4440 tCO₂/MWh. This calculated emission factor is conservative as per tool.

The Egyptian Environmental Affairs Agency (EEAA), which is the Designated National Authority (DNA) for the Government of Egypt (GOE) under the Ministry of Environment

and Forests has mentioned four indicators for the sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from Egypt. Thus, the project's contribution towards sustainable development has been addressed based on the following sustainable development aspects:

I. Social well-being:

The proposed project will create new job opportunities and enhance both technology transfer and public awareness of renewable energy technologies, specifically wind power generation. Frequency of visiting nearby areas by skilled, technical and industrialist increase due to installation /site visit/operation and maintenance work related to WTGs. This directly and indirectly positively effects the economy of nearby area.

II. Economic well-being:

The proposed project will enable the country to save natural gas that would otherwise be combusted for power generation. It will also contribute to the diversification of energy sources for the country. This directly and indirectly positively effects the economy of country.

III. Environmental well-being:

The proposed project will help mitigate local pollution caused by air emissions from thermal power plants that would have provided the same amount of power in the absence of the project activity. The proposed project will provide electricity without the generation of any local pollution. Thus, the project activity contributes to environmental well-being without causing any negative impact on the surrounding environment.

Assessment team checked the technical parameters of the project equipment through plant technical specifications shared by client and confirmed during remote validation audit. PD confirms that the details as mentioned in the GS4GG PDD, Ver. 03 dated 07/02/2022 are correct. The details are as below:

The project activity aims to harness wind energy through installation of wind turbines with total installed capacity of 252 MW. The wind power plant will have 96 Wind Turbines including Doubly-fed induction generator, transformers, regulators, monitoring devices and other supporting components.

The wind power generation facility is located at Village: Ras Ghareb, State: Red Sea Governorate in Egypt. The unique identification of this project will be provided at the time of implementation.

The technical details of the plant confirmed through EPC contract signed. The wind turbines have a useful life of 20 years as confirmed with EPC contract.

Principle 2: Safeguarding Principles

The Safeguarding principles assessment is as below:

Assessment Questions/ Requirements	Assessment of relevance to the project (Yes/potentially/no)	Justification by the assessment team	Mitigation measure (if required)
Principle 1. Human Rights			
1. The Project Developer and the Project shall respect internationally		1. The Project adheres to the internationally proclaimed human rights and is not in	Not Required

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 2. The Project shall not discriminate with regards to participation and inclusion		conflict in violence or human right abuses of any kind as defined in the Universal Declaration of Human Rights. The Project does not cause any human rights abuse and respects internationally proclaimed human rights issue. HR policy of the PP is in place which adheres to the human rights issues. Further, the Project meets the local labor law requirements thus does not cause any human rights abuse. 2. Project activities are not expected to cause any human rights abuse. As a member of United Nations⁴ and part of UN Agreement on Human Rights⁵, it is ensured by law in Egypt that no action can be taken against human rights. HR policy of the PP is in place which adheres to the human rights issues and promotes equal opportunity for all.	
Principle 2. Gender Equality			
1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women.		1. The Project does not reduce access to or control of resources for women. Also, the PP have HR policy which clearly mention that women are treated equally. No, the project does not adversely affect men and women in marginalised or vulnerable communities.	Not required

⁴ <https://labour.gov.in/lcandilasdivision/egypt-ilo>

⁵ <https://www.ilo.org/ciario/lang--en/index.htm>

2. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work. 3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks 4. (where required) Summary of opinions and		Employment opportunities have been provided by the PP to the local people from the nearby villages around the project site which in turn has improved the livelihood and living standards of the local people. 2. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work. The project has equal opportunity for both men and women. Lekela Egypt Wind Power BOO (S.A.E.) is committed to creating a safe and healthy work environment that enables its employees to work without fear of prejudice and gender bias. The Policy⁶ outlines company's expectations from its employees with respect to treating co-workers with courtesy, dignity and respect irrespective of their gender, race, caste, creed, religion, place of origin, sexual orientation, disability, economic status or position in the hierarchy. 3. Egypt ratified the International Convention on the Elimination of All Forms of Racial Discrimination⁷ on 03/12/1968 with certain reservation. The project activity is in line with	
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⁶ The Code of Conduct Policy with all the policies is submitted to the VVB.

⁷ https://nhrc.nic.in/documents/egypt_ratification_status.pdf

recommendations of an Expert Stakeholder(s)		strategy of elimination of discrimination. 4. Summary of opinions and recommendations of an Expert Stakeholder is required in case of Gender responsive project activity.	
Principle 3. Community Health, Safety and Working Conditions			
The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community		The project proponent is committed to the employee's workplace health & safety during all phases of the project. The company possess Environment, Health, Safety and sustainability Policy ⁸ which ensures to provide safe and healthy workplaces for employees and protecting the safety of the communities. All employees will attend health & safety trainings. This is issued in the Labor code on Occupational Safety, Health and Working Conditions and UN Agreement on Human Rights ⁹ .	Workplace Health & Safety trainings will be conducted regularly during the project operation.
Principle 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	PP has conducted a detailed ESIA study/30/ for the project area and it is concluded that as observed during field visit there is no designated archaeological or cultural heritage site within 10 Km radius of the study area village Law on Cultural heritage is protected against alteration, damage or	Not Required

⁸ The EHS Policy is submitted to the VVB.

⁹ https://www.ilo.org/ipcc/Regionsandcountries/arab-states/egypt/WCMS_201295/lang--en/index.htm

		removal by the "law on cultural heritage ¹⁰ ". No monument of cultural or historical importance is affected by the route of the transmission line. No cultural heritage/ indigenous people are replaced by the project.	
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	Project activity is a wind power plant planned in the land acquired by the project activity is mostly barren land. The ESIA concludes that, there is no physical or economic relocation of peoples. Also, in the brief assessment of the project, it is mentioned that though significant number of populations are residing in the village however, there has not been any case of land and resource displacement and disruption of their livelihood due to land purchase.	Not required
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	There are no uncertainties regarding land tenure, access rights, usage rights or land ownership. The Wind Turbines are all developed on government land and some private land and all of them will belong to PP. Moreover, the project is not located with close proximity of any forest.	Not Required
Principle 5. Corruption			

¹⁰ <https://indicators.ohchr.org/>

1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects		The project is renewable energy technology and does not contribute to or reinforce corruption of any kind. Egypt has ratified UN convention against Corruption in 2011 ¹¹ .	Not Required
Principle 6.1 Labour Rights			
1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions.		1. The project proponent is committed to the employee's workplace health & safety during all phases of the project. All employees will attend health & safety trainings. This is issued in the Labour code on Occupational Safety, Health and Working Conditions and UN Agreement on Human Rights ¹² .	Not required
2. Workers shall be able to establish and join labour organisations		2. The project respects fundamental right of employee. Egypt is one of the members of International Labor Organization (ILO), which formed in 1961 which protects rights of industrial trade unions and their members. PP and appointed contractors will not involve in any form of forced or compulsory labor. Egypt has ratified ILO "C029 – Forced Labor Convention" ¹³	
3. Working agreements with all individual workers shall be documented and implemented and include:		3. The working agreements with all individual workers are available which contains the guidelines that define	

¹¹ https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XVIII-14&chapter=18

¹³ https://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:102915

a) Working hours (must not exceed 48 hours per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child labour is allowed (Exceptions for children working on their families' property requires an <u>Expert Stakeholder</u> opinion) 5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures.		how employees work, and the working environment to feel safe and free to learn, explore and discover. 4. The notice at every site of Lekela Egypt Wind Power BOO (S.A.E.) is displayed containing abstract of sections Article No. 64 of Egypt's Child Law prohibits the work of children under the age of 15. Law¹⁴ no. 12 for 1996 for the Code of the Child. 5. The project owner is committed to the safe and healthy working conditions all phases of the project. All employees will attend trainings health & safety. This issue is protected by Labor code ¹⁵ and UN	
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¹⁴ <https://www.egypt.gov.eg/english/laws/>

¹⁵ <https://www.ohchr.org/EN/Countries/MENARRegion/Pages/EGIndex.aspx>

		Agreement on Human Rights ¹⁶ .	
Principle 6.2 Negative Economic Consequences			
1. Does the project cause negative economic consequences during and after project implementation?	No	The project activity is a renewable wind energy generation project and generates various employment opportunity for the locals throughout its lifetime. Thus, there are no negative economic consequences during and after project implementation.	
>>			
Principle 7.1 Emissions			
Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	The project reduces Greenhouse Gas (GHG) emissions and fossil fuel usage compared to the baseline scenario.	Not Required
>>			
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	No. The project activity is a grid connected renewable energy-based wind energy generation project. There is no use of Wood or Biomass in the project activity. On the contrary the project generates renewable energy and supplies to the grid. Hence, it's not required to be monitored.	Not required
>>			
Principle 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	The project being a wind energy project thus there is no impact of water resources. The plant area does not have large rivers and streams flow.	Not Required

¹⁶ <https://www.ohchr.org/EN/countries/MENARegion/Pages/EGIndex.aspx>

>>			
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	The project being a wind energy project thus there is no direct or indirect erosion.	Not Required
>>			
Principle 9.1 Landscape Modification and Soil			
Does the Project involve the use of land and soil for production of crops or other products?	No	The project will be established at the desert/barren land which was not used for production of crops and other products for a long time. Section 5.4.9 of the ESIA report mentions that Due to the dry-like conditions, these lands are barren and unfertile in nature.	Not Required
>>			
Principle 9.2 Vulnerability to Natural Disaster			
Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	The project is not susceptible to or leads to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions.	Not Required
>>			
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, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	No	The wind power plant is not negatively impacted by the use of genetically modified organisms or GMOs	Not Required

>>			
Principle 9.4 Release of pollutants			
Could the Project potentially result in the release of pollutants to the environment?	No	Being a wind energy project activity, it follows the principles of sustainable development and environment and adheres the environment protection law no.4 of 1994, Egypt. This means project activity does not potentially results in release of pollutants to the environment. Nevertheless, the project takes a precautionary approach regarding environmental challenges and is not complicit in practices contrary to the precautionary principle. The environment is protected by several Laws and Regulations in Egypt. The purpose of the "Law on Environmental Protection" is to protect the environment with principles of sustainable development and environment. The project owner also follows necessary procedures for environmental safety at the project.	Not Required
>>			
Principle 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	All hazardous and non-hazardous wastes will be disposed as per the local regulations. Standard procedure is followed at site during operation and maintenance. Further the HSE policy of PP is in place which takes care of all the standard operating procedures.	Not Required
>>			
Principle 9.6 Pesticides & Fertilisers			

Will the Project involve the application of pesticides and/or fertilisers?	No	Not applicable for wind power plants.	Not Required
>>			
Principle 9.7 Harvesting of Forests			
Will the Project involve the harvesting of forests?	No	No, the project does not involve harvesting of forest.	Not Required
>>			
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	No. The project does not modify the quantity or nutritional quality of food available.	Not Required
>>			
Principle 9.9 Animal husbandry			
Will the Project involve animal husbandry?	No	No. Not applicable for wind project.	Not required
>>			
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	No reserve forest / protected forest or ecological sensitive area is located near the Project site. Further as per the consultation with villagers no wild species are observed in the area. Also, no forest land is involved in this project. There is no direct threat to wild species. Nevertheless, measures must be taken to avoid all forms of man animal conflict. Adequate safeguards must be followed during construction and operation phase to prevent unwanted utilization of fertile land,	Not Required
>>			

		forest land and forest resources.	
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)? AND/OR Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	No	No. There were no endangered species found in the project boundary. The project area comprises of non-forest wastelands and fallow lands. It is sparsely covered by shrubs and thorny bushes. There are no plantations or orchards. There was no sighting of any known rare, endangered or ecologically significant animal and plant species. The ESIA concluded the same.	Not required
>>			

The safeguarding principles relevant to the project activity are justified by PP based on supporting web links, references wherever applicable.

Also, the ESIA report is submitted to VVB. This report clearly mentioned that wind turbines operation does not result in direct air pollution, noise pollution.

Furthermore, the safeguarding principles assessment is validated through references given by PP, ESIA report as mentioned above and based on site visit observations and interview during the site visit.

The SDG goals are also described below:

SDG Goal	Assessment of Methodological choices/approaches for estimating the SDG outcome
SDG 7 – Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all	Measurement Method: Electricity produced and supplied to the grid is monitored through energy meter. Net electricity generated is obtained from the monthly Statement of net export of power to the grid at the plant site. The other parameters used for net electricity supplied to grid are mentioned in monitoring plan. The O&M site-in-charge shall be responsible for the regular recording of data. QA/QC Process: This parameter is monitored monthly, and value of parameter will be cross checked with the invoices. The meters will be calibrated on regular frequency. Relevant SDG Target: 7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix.

	Corresponding indicator: Electricity produced and supplied to the grid. (7.2.1 Renewable energy share in the total final energy consumption)
SDG 8 – Decent Work and Economic Growth: Promote inclusive and sustainable economic growth, employment and decent work for all	1. Quantitative employment 2. Quality of employment Measurement Method: Training and employment generation is monitored through training records; staff register or letter from O&M contractor for training and employment details or HSE/HR records. QA/QC Process: The number of persons employed would be mentioned in the plant register, which can be crossed checked with daily attendance register, employee records, salary slips of employee or letter from O&M contractor for number of peoples employed. Relevant SDG Target: 8.5.1 - By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value Corresponding indicator: 1) No. of trainings provided to the employees and O&M staff: 01 training will be provided/year), and 2) No. of project employees with number of male/female, permanent/temporary, age and person with disabilities due to project activity: 15 persons/ year.
SDG 13 – Climate Action: Take urgent action to combat climate change and its impacts	Measurement Method: - The emission reduction parameter is calculated as product of net electricity supplied to grid and grid emission factor. The grid emission factor is ex-ante parameter and determined based on data obtained from Annual Report of Egyptian Electricity Holding Company, Ministry of Electricity Renewable Energy, Government of Egypt. This is in line with "Tool to calculate the emission factor for an electricity system, version 7". The emission reductions are calculated as per registered PDD and as per methodology requirement. QA/QC Process: This parameter is calculated, and no QA/QC procedure required. Relevant SDG Target: 13.2.1: Integrate climate change measures into national policies, strategies and planning Corresponding indicator: Emission reductions in tCO_{2e} from the project activity.

Principle 3: Stakeholder Inclusivity

As per the CDM/GS requirements, it is necessary to invite the relevant stakeholders, before the validation process starts. The stakeholder consultation meeting took place as follows:

All the stakeholders have been invited through public notice on 23/09/2019 to attend the stakeholders meeting. The local stakeholders' consultation meeting was held on 10/10/2019 and attended by local persons including local villagers, local vendors and technology suppliers/02/.

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

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

Stakeholder Feedback Round (SFR):

The project activity is a GS VER project and therefore PP was required to conduct a Stakeholder Feedback Round (SFR) covering the issues (if any) related to the project activity, which was held on 12/09/2021/17/. The invitation emails were sent on 12/08/2021 to the entire stakeholder/18/ for the mandatory 60 days stakeholder's commenting period with a call for public feedback on the project and comments from 12/08/2021 to 12/10/2021. The sample of the emails is also submitted to the VVB. The email attachment is also checked by the assessment team and found correct. Following observations are made by the VVB:

- Different representative of stakeholders like local villagers, NGOs, PP employees were invited for their comments via emails during stakeholder's feedback round.
- No negative comments were received during the period from 12/08/2021 to 12/10/2021 and local stakeholders were very satisfied with the project activity implementation and operation in their area.

Principle 4: Demonstration of real outcomes

The Sustainable monitoring plan is described below:

SDG Parameter	Indicator	Monitoring
SDG 7: Affordable and Clean Energy	Quantity of net electricity delivered by the project plant/unit in year y in MWh	The available parameter to Project owner is net electricity supplied to grid and same is mentioned as monitoring parameter. The net electricity generation is calculated based on Export, import values from the meters connected at the sub-station. The Net electricity is thus calculated based on the values of export and import for the particular billing month. Quantity of net electricity supplied to the grid will be cross checked from the invoices raised by the project proponent. The energy meters used are main and back-up meters which are of accuracy class 0.2 and calibrated once in a year as certified by the Egyptian Electricity Transmission Company (EETC). The calculation of net electricity supplied to grid is under purview

		of Egyptian electrical energy authority and Project owner do not have control on it. The onsite practice is thus acceptable to the assessment team as the same is as per the requirement of the approved methodology.
SDG 8: Decent Work and Economic Growth	Quantitative employment and income generation	Project participant have documentation pertaining to employment, attendance register and documentary details of training/capacity building. Assessment team also checked the salary slips and confirms that due to project activity peoples are getting more than minimum wages as a salary and this salary is better than local level salary. Based on the roles and responsibility of employee, the salary will be higher than the minimum salary of the region and hence the parameter monitoring is acceptable to the assessment team.
SDG 8: Decent Work and Economic Growth	Quality of employment	The training records are maintained on regular basis with annual consolidation. Assessment team checked that at least more than 15 people/ year are expected to be employed at site during crediting period. The employment opportunities generated are local or temporary or permanent as checked and confirmed by the assessment team. The training related to O&M, Safety, emergency procedure, fire safety etc. are provided to employees. Since local people are employed due to project activity, the training given to employees improves the quality of employment. Apart from these training to employees, the PP organizes few events which will be beneficial to society as per their policy. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity.
SDG 13: Climate Action	Emission Reductions	The emission reduction calculation will be done as per the formula mentioned in the GS4GG PDD. As the parameter is subjected to monitoring the same will be checked during the verification of the project activity.

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

Principle 5: Financial Additionality & Ongoing Financial Need

As project is large scale wind energy project, additionality demonstrated by PP in GS PDD assessed and validated as below:

During conceptualization of the project activity, board of directors of the project proponents considered the Carbon revenue to improve the project financials. During the board meeting of Lekela Egypt Wind Power BOO (S.A.E.) on 30/11/2018, the board of Directors decided that they would consider going ahead for the project activity/27/. In continuation to the board decision, PP issued the respective purchase order for the supply of wind turbines.

The start date of the project activity is 17/09/2019 as per the EPC Contract/25/.

As this Project allocated to PP by EETC (Egypt Electricity Transmission Company) through bidding process. PP decided to submit the RfS (Request for selection) document and go ahead with the projects. Once RfS is approved by NREA, then PP was supposed to submit the bid. After EETC approval and PIM was prepared, then Board meeting held on 30/11/2018 to secure approval of Board for submission of bid to EETC. Bidding process and land acquisition took considerable time and finally EPC contract signed on 17/09/2019. VVB is of the opinion that this gap is reasonable as contract signing and land acquisition is cumbersome and time taking process. Validation team did not find anything which could alter the Project design, baseline etc.

In the above background Validation Team concludes that the additionality justification regarding the serious CDM consideration given by the project developer is in accordance with the requirements derived from CDM Validation and Verification Standard version 03.0 for the project activity.

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

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

The proposed project activity is not the first-of-its-kind. Hence, not applicable.

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

As per the applied methodology ACM0002 version 20.0; Para 22, if the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plant and by the addition of new generation sources.

As the baseline scenario is prescribed by applied methodology, hence no further analysis is carried out to identify alternatives.

Step 2: Investment analysis

As per para 29 of "Tool for the demonstration and assessment of additionality

" v7.0.0, it is determined that the proposed project activity is not an economically or financially feasible option.

To conduct the investment analysis, Methodological tool: Investment analysis Tool version 11 (EB112 Annex 02) has been referred.

Sub-step 2a: Determine appropriate analysis method:

The project activity generates revenues from the sale of electricity which is supplied to grid; therefore, the Simple Cost Analysis (Option I) and Option-II (Apply investment comparison analysis) cannot be applied. Instead, the Benchmark Analysis (Option III) is selected as the appropriate analysis method to demonstrate the investment barrier.

Financial Indicator (Equity IRR):

The PP has selected post-tax equity IRR as the financial indicator for the Investment Analysis. The appropriateness of the financial indicator has been verified by the assessment team, it was confirmed that the equity IRR is a widely accepted financial metric used by many corporations and financial institutions for investment decision-making and is a long-established benchmark for investment decisions in the Egypt power sector and is in line with the "Investment Analysis tool" version 11 (EB112 Annex 02) /31/, which was the latest version available at UNFCCC website.

The post-tax equity IRR/34/ for the project activity at the time of investment decision comes out to be 8.34%. The data, rationales, assumptions and justifications mentioned in the GS PDD/01/ and investment analysis excel sheets/03/ were checked against the local knowledge of the validation team, sectoral scope expertise, regulatory and applicable legal requirements in the Host country Egypt. The documents were also verified by the financial expert. The appropriateness of the input values, used for financial calculation have been checked in line with paragraph 10 of the Investment Analysis tool (EB112 Annex 02).

The input parameters in the financial analysis have been taken as per the values and assumptions applicable and available at the time of decision to invest in the project activity in line with Paragraph 10, investment analysis tool version 11.0 /31/.

The approach used in the GS PDD /01/ has been assessed based on a document review, whilst the following relevant documents have been reviewed:

- Board Resolution by the project proponent to invest into the proposed project activity considering carbon credit revenue, dated 30/11/2018 /27/
- Project Information Memorandum (PIM) prepared by Lakela, dated July 2018/24/
- Equity IRR and Benchmark Analysis calculation sheets/34/

Additionality of the project activity has been discussed with representatives of the PP and finally the data, rationales, assumptions; justifications and documentation provided have been checked using local knowledge and sectoral and financial expertise of the Assessment Team, and cross checked by:

- Power Purchase Agreement /26/
- Purchase order (EPC supply agreement) /25/
- Third Party PLF/CUF assessment report/22/

The individual financial parameters used for calculations of equity IRR of the project activity have been discussed as below in detail.

Project Cost:

The Project cost for the project activity has been considered based on the Project Information Memorandum (PIM) /24/ which is available to the project participant during conceptualization stage of the project. The project cost includes cost of materials and equipment, labour and services, identification, selection and allocation of land, cost for obtaining all government permissions and infrastructure development charges. This is found to be appropriate, and it is accepted. The project cost for the project activity has been considered as USD 341 million.

The appropriateness of the same is further cross-checked against the actual purchase order/25/ placed for the project activity and found to be comparable.

Sensitivity analysis considering +/- 10% variation in the project cost is carried and results are summarized in this report.

Operation and Maintenance Cost and its escalation:

Operation and maintenance cost considered is USD 10.98 million for the project activity (including the service tax) and an escalation of 5% per year as per PIM (Latest applicable at the time of investment decision).

O&M cost will apply and an escalation of 5% will be applicable from 2nd year onwards. Also, O&M cost considered for the project activity is further checked with the similar CDM Registered Project Ref. No. 10625 which indicates O&M cost ranging from 1.9% - 2% of the capital cost with 10% escalation every year. Hence the O&M Considered is found to be acceptable.

Plant Load Factor:

The Plant Load Factor @P50 as 54.25% is considered from the third party PLF assessment report prepared by DNV GL, dated 10/06/2019 /22/. The Project Participant had contracted third party for PLF assessment in line with paragraph 3 (b) of Annex 11 of EB 48 and the PLF is verified as indicated through the PLF assessment report prepared by third party. Hence it can be concluded the PLF considered by the PP is appropriate.

To further crosscheck the appropriateness of the PLF considered for the project activity, this is covered in the sensitivity analysis variation range and the Equity IRR remains additional under the investment benchmark value. Thus, it is concluded that PLF considered by the PP is appropriate; and the same has been considered in IRR calculations for the project activity. Also, this parameter is considered under +/-10% sensitivity.

Electricity Tariff:

The Project participant had considered USD 40.77/MWh as average electricity tariff fixed for the 20 years of the project's lifetime. It is checked and confirmed through Project Information Memorandum/24/. Since, it was the latest available and applicable at the time of decision making of the project activity, Paragraph 10, investment analysis tool version 11.0 is followed, and it is accepted. Thus, it is concluded that electricity tariff considered for the project activity is found to be appropriate and it is accepted.

Also, the validation team has assessed the impact on the IRR value and project additionality using the actual electricity tariff as per PPA/26/ signed with the Egyptian Electricity Transmission Company, S.A.E and it is concluded that the tariff rate considered for IRR calculation is same as mentioned in PPA. hence it is accepted.

Debt to Equity Ratio:

The project activity is funded by 25% equity and 75% debt as per the PIM/24/ which was available at the time of investment decision. This is in line with the Paragraph 10, investment analysis tool version 11.0, which talks about typical debt/equity finance structure in the sector in the country. Typical debt-equity ratio is 70:30 in wind energy sector and this is checked from similar registered CDM Project Ref No.10625 is found appropriate.

There are no variation and IRR remains well below the benchmark and hence it is found appropriate and thus it is accepted.

Lifetime of project activity: 25years

The lifetime of the project activity is 25 years which has been considered from the PIM/24/. This is consistent with the lifetime of wind power projects and has been confirmed by the technical expert. The crediting period of the proposed project activity is 5 years (renewable) as mentioned in the GS PDD/01/. However, the period of assessment considered for the investment analysis is 20 years. This has been confirmed from the IRR-benchmark spread sheet submitted by the PP. Hence the considered assessment period of 20 years meets the requirement of paragraph 6 of investment analysis tool version 11.0.

Interest rate on term loan: 6.5%

The interest on term loan considered for the investment analysis from the PIM/24/. This was available to the PP at the time of the investment decision.
Hence the considered rate is appropriate and in line with applicable guidance in paragraph 10 of investment analysis tool version 11.0.

Loan tenure, Repayment period and Moratorium period:

The PP has considered loan tenure as 18 years, a repayment period of 17 years with a moratorium period of 1 year as per the PIM/24/ and further verified loan sanction letter and found consistent. The considered repayment schedule was available to the PP at the time of investment decision and hence found to be acceptable.

Book Depreciation Rate:

The plant and machinery are depreciated Straight Line Method (SLM). Furthermore, the PP has considered 10% as salvage value and 90% as depreciable component on plant and machinery is equally depreciated over the life of project. This has been checked and same is as per the standard accounting practice, hence this is found justified.

Income Tax:

PP has considered Income Tax as 22.50% in investment analysis for the project activity and these values are sourced from PIM/24/. This is as per tax rates applicable to a domestic company in Egypt (<https://taxsummaries.pwc.com/egypt/corporate/taxes-on-corporate-income>). The appropriateness of the same has been checked and confirmed by financial expert involved in the project activity. This is found to be appropriate, and it is accepted.

Residual (Salvage) Value:

Salvage value is considered as 10% of the total project cost (excluding cost of land lease, erection and commissioning charges as well as transportation charges). These have been added back to the cash flow. As the land is purchase and it is being non-depreciable item, it is added back to the cash flow. However, PP considered 10% of cost of plant and machinery (WTGs) and 100% land cost as residual (salvage) value for the project activity conservatively). This is further validated as per the accounting practises which allows a depreciable cost of ninety-five per cent which implies a consideration of 5% of salvage value as a standard accounting practice. Thus, the consideration by the PP of 10% salvage value is conservative and hence appropriate for the purpose. The appropriateness of this is confirmed by the financial expert involved in the project activity; thus, it is accepted.

Conclusion:

The values considered for all the above discussed parameters were available at the time of investment decision and hence are valid and applicable to the project activity. All input values have been consistently mentioned and applied in all calculations. This meets the requirement of paragraph 10 of investment analysis tool version 11.0. The assessment team confirms that in the calculation of equity IRR only the portion of investment costs which is financed by equity has been considered as the net cash outflow and the portion of the investment costs which is financed by debt has not been considered a cash outflow. This meets the requirement of paragraph 14 of investment analysis tool version 11.0.

Based on the above parameters, the post-tax Equity IRR for the project activity is arrived as 8.34%. This is lower than the calculated benchmark of 20.73%. This signifies that the proposed project activity is not financially attractive and is therefore additional.

Sub-step 2a: Determine appropriate analysis method:

The project activity identified in Step 1 generates revenues from the sale of electricity; therefore, the Simple Cost Analysis (Option I) cannot be applied. Instead, the Benchmark Analysis (Option III) is selected as the appropriate analysis method.

Sub-step 2b: Apply benchmark analysis (Option III)

The proposed project activity is a wind power project which could be developed by an entity other than the PP. Hence the benchmark has been based on parameters that are standard in the market, which is suitable in the context of the underlying project activity. This meets the requirement of paragraph 17 of EB 112 Annex 02.

The PP has provided the calculation of the benchmark in the GS PDD /01/ and investment analysis spread sheets. The benchmark has been calculated in line with paragraph 18 and 20 of EB 112 Annex 02. Based on the option in paragraph 20, the PP has selected the default value for the expected return on equity (in real terms) from Appendix (EB112 Annex 02). The default value has been obtained as 13.32% for Egypt corresponding to Group 1 (Energy Industries).

The IRR calculation has been carried out on in nominal terms. Hence as per the requirement of paragraph 17 of EB 112 Annex 02, the PP has converted the default value (i.e., 10.55%) which is in real terms to nominal terms by adding an inflation rate. The inflation rate has been sourced from the IMF (International Monetary Fund World Economic Outlook) or the World Bank for the next five years after the start of the project activity. The assessment team has confirmed that the default value was available at the time of decision making and has been appropriately applied by the PP.

Accordingly, PP converted the default benchmark which is in real terms into nominal terms by using the following equation:

$$\text{Nominal Benchmark} = (1 + \text{Benchmark real}) \times (1 + \text{Inflation rate}) - 1$$

Where,

Default value for Real Benchmark = 13.32% (as per Appendix of EB112, Annex 02)

Inflation Rate= 6.54% Published by the IMF (International Monetary Fund World Economic Outlook) or the World Bank for the next five years after the start of the project activity.

Therefore, the Nominal Benchmark estimated = $(1 + 13.32\%) \times (1 + 6.54\%) - 1 = 20.73\%$

The validation team is of the opinion that the above benchmark, which is based on the parameters that are standard in the market, is suitable in the context of the project activity. Since the benchmark is based on parameters that are standard in market, the ROE is calculated by using best financial practices and data sources have been clearly validated by validation team.

The suitability of the benchmark considered for the project activity is confirmed in line with paragraph 100 of VVS for PAs version 3.0 as follows:

- a. The financial indicator used for the project investment analysis is post-tax Equity IRR, and the benchmark has been calculated as ROE which is suitable to the type of financial indicator chosen by the PP.
- b. Since this is a wind energy generation project and inflation rate been sourced from the IMF (International Monetary Fund World Economic Outlook) or the World Bank for host country i.e., Egypt is applied and hence no risk premiums are applied.
- c. The financial analysis of the project at the time of investment decision as well as with actual parameters, along with the respective sensitivity analysis, shows that the Equity IRR of the project, under no scenario crosses the benchmark returns. Therefore, it can be concluded that the project is not financially viable and hence it can be assumed that no investment would be made at a rate lower than the benchmark return.

Sensitivity Analysis:

The sensitivity analysis has been carried out by the project participant for a reasonable range of variations i.e., +/-10% of major parameters, and this was found to be as per paragraph 27 of investment analysis tool version 11.0. At the time of decision, the PP had considered the project cost, O&M cost, and tariff rate, as per PIM/24/. Also, electricity tariff is assessed under sensitivity analysis though tariff considered for the project activity is average electricity tariff for 20 years of the lifetime of the project activity conservatively. These parameters have material impact on the investment analysis.

The project participant has considered all the variables that constitute more than 20% of either total project costs or total project revenue i.e. PLF, Project Cost, tariff and O&M cost in the sensitivity analysis and hence this is found to be in line with paragraph 27 of investment analysis tool version 11.0.

The impact of +/-10 % variation in these variables is summarized as below.

Percentage Variation	+10%	0%	-10%
Parameter	Plant Load Factor (Energy generation)		
Equity IRR (%)	13.02%	8.34%	3.66%
Parameter	Operation and Maintenance Cost		
Equity IRR (%)	6.79%	8.34%	9.82%
Parameter	Electricity Tariff		
Equity IRR (%)	5.51%	8.34%	11.93%
Parameter	Project Capital Cost		
Equity IRR (%)	13.02%	8.34%	3.66%

Based on above results, it can be concluded that the equity IRR of the project activity is not crossing the benchmark even with +/-10% variations in the critical parameters.

It is verified that the Equity IRR crosses the benchmark if:

1. Project cost reduced by 26.95%:

This is not a likely scenario as actual project cost is higher than the estimated cost. Since purchase order already placed hence further variation in the project cost is not a likely scenario.

2. PLF increases by 26.44%:

PLF considered by the project participant is appropriate in line with paragraph 3 (b) of EB 48 Annex 11. Therefore, increase in PLF up to the breaching point is very unlikely.

3. Tariff increases by 26.44 %:

Further increase in tariff rate is highly unlikely scenario as the tariff rate is fixed for 20 years as verified through the PIM/08/ and further confirmed with the PPA signed with SECI.

4. O&M cost decreases by 93.10%

IRR crosses the benchmark if O&M cost decreases by 92.10%, however this is not a likely scenario.

In view of the above discussion the assessment team has concluded that the project activity is additional, and it is found to be financially not viable.

Outcome of Step 2:

In view of the above discussion the assessment team has concluded that the project activity is additional, and it is found to be financially not viable.

Step 3: Barrier analysis:

This option is not opted for the project activity.

Common Practice analysis:

The common practice analysis is proved by following points as per the requirement of Methodological tool "Common Practice", version 03.1 EB84, Annex 7¹⁷:

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

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

Range	Capacity	Unit
+50%	378	MW
Capacity of the proposed project activity	252	MW
-50%	126	MW

Since the project activity is 252 MW, the output range of +/- 50% has been considered as 378 MW (Higher range for comparison) to 126 MW (Lower range for Comparison) which is assessed to be correct.

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

- (a) The projects are located in the applicable geographical area;
- (b) The projects apply the same measure as the proposed project activity;
- (c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;
- (d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;
- (e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;
- (f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

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

- a) Assessment team noted that as the project is connected to Egypt's Unified National Grid, therefore, projects in the geographical area of Egypt have been chosen for analysis. Each state has different policies regarding renewable energy, hence considered as geographical region for common practice analysis. The distinction from choosing the state to entire geographical boundary is already explained above in the report and thus the applied geographical area is acceptable to the assessment team.

¹⁷<https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf>

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

c) Assessment team confirms during the remote audit that the energy source used by the project activity is wind. Hence, only wind energy projects have been considered for analysis.

d) Assessment team confirms during the remote audit that the project activity produces electricity; therefore, all power plants that produce electricity are candidates for similar projects.

e) Since the project activity is 252 MW, the output range of +/- 50% has been considered as 378 MW (Higher range for comparison) to 126 MW (Lower range for Comparison) which is assessed to be correct.

f) The start date of the project activity is 17/09/2019. The projects which have started commercial operation till PDD Preparation Date have been considered for analysis.

VVB checked the project status, in total 10 full scale grid connected wind farm projects were operational in Egypt before the project starting date, with cumulative installed capacity of almost 1000 MW. And only 2 project, the Gulf of El-Zayt Wind Power Plant of 200 MW & Ras Gharib 262.5 MW are inside the capacity range of similar project. Hence
Numbers of Similar projects identified, which fulfil above-mentioned conditioned are

$N_{wind} = 2$

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

As per the requirement of step 3, CDM project activities, which have got registered or are under validation, have been excluded in this step. The source of check for the same is cdm.unfccc.int

$N_{all} = 1$

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

As per the tool on Common Practice, the project activities have been separated from the different technologies on the basis of criteria:

Investment climate on the date of the investment decision –

When comparing the Gulf of El-Zayt Wind Farm with the project activity it is important to recognize that the projects have been developed by completely different actors under different promotional policies. In order to analyse this difference, we replicate a table from the Project's Due Diligence report to define and discuss different routes for the development of wind power projects in Egypt:

	NREA (New and Renewable Energy Authority)	Competitive Bidding
Program size	2,200MW	2,500MW
Single Wind Farm Size	Large (100-400MW)	Large (250MW)
Developer	NREA	Private
Financing	Gov't, international development agencies	Commercial finance
Tariff Setting	Proposed by regulator, Approved by Cabinet	Dictated by the bid
Grid Contracts	20 years	20 years
Offtaker	Grid Operator	Grid Operator
Construction	NREA, via EPC	Developer
Operation and Maintenance	NREA	Developer

The project activity has been developed under the category of competitive bidding. This implies that the project is financed by a private investor (IPP), with commercial finance and based on a power tariff that is defined by a competitive bid.

In contrast to this IPP development, The Gulf of El-Zayt Wind Farm, as referenced by NREA's annual report for the year 2018 has been developed directly by Egypt's national agency NREA and financed by national and international development agencies. The tariff for such projects is proposed by the regulator and approved by the cabinet.

It is therefore clear that the project activity and the Gulf of El-Zayt project have been developed under different legal regulations, are subject to different promotional policies, as well as to differences in terms of subsidies and financial flows. Given the fact that the Gulf of El-Zayt project has been developed by the state agency, financed by domestic and international public funds and based on a tariff that was defined by the state, the project is not subject to the same investment risks and there is no private investor who would have to balance financial rewards with these risks.

Assessment Team therefore accepts that the Gulf of El-Zayt Wind Farm is different from our project activity and therefore $N_{diff} = 1$.

$N_{diff} = 1$

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

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

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

As per methodological tool "common practice" version 03.1, The proposed project activity is a "common practice" within a sector in the applicable geographical area if the factor F is greater than 0.2 and $N_{all} - N_{diff}$ is greater than 3.

Thus, if both conditions are fulfilled, then project activity will be a common practice otherwise, the project activity is treated as not a common practice.

Outcome of Common Practice analysis:

i. $F = 0$; is less than 0.2

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

Hence, project activity is not a common practice.

Thus, the proposed project activity is not a “common practice” within a sector in the applicable geographical area.

The above discussions show that wind power development is not a common practice and the project activity is not financially attractive; hence the project activity is additional. Thus, common practice analysis is acceptable to assessment team.

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

The GS4GG PDD of the project activity is checked by the assessment team and found that ACM0002 version 20.0 is used which is latest methodology by UNFCCC. As the GS tool kit recommends the application of the latest version of the applied methodology along with the conservative argument of the approach followed. The latest version is ACM0002 version 20 and VVB confirm that the project activity is in line with the latest methodology as well.

The formula used in the GS4GG PDD was used for the calculation of emission reduction and same is found to be correct. Hence emission reduction calculation at this time of validation is conservative and appropriate.

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

$$ER_y = BE_y - PE_y$$

Where,

ER_y = Emission Reduction in tCO₂/year

BE_y = Baseline emission in tCO₂/year

PE_y = Project emissions in tCO₂/year

Baseline Emission (BE_y)

The baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.

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

Where,

$EG_{PJ,y}$ = Total quantity of net electricity delivered to the recipient facility

$EF_{grid,CM,y}$ = Baseline emission factor

= 0.4440 tCO₂/MWh

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

$$BE_y = 1,197,600 \text{ MWh} * 0.4440 = 531,674 \text{ tCO}_2/\text{year (round down to nearest integer)}$$

Since $ER_y = BE_y$ (As $PE_y=0$)

Therefore, $ER_y = 531,674 \text{ tCO}_2/\text{year}$

SDG 13 Climate Actions

Year	Baseline estimate	Project estimate	Net benefit
Year 1	531,674 tCO ₂	0 tCO ₂	531,674
Year 2	531,674 tCO ₂	0 tCO ₂	531,674
Year 3	531,674 tCO ₂	0 tCO ₂	531,674
Year 4	531,674 tCO ₂	0 tCO ₂	531,674
Year 5	531,674 tCO ₂	0 tCO ₂	531,674
Total	2,658,370 tCO₂	0 tCO₂	2,658,370 tCO₂
Total number of crediting years	5 years		
Annual average over the crediting period	531,674 tCO ₂	0 tCO ₂	531,674 tCO ₂

SDG 7: Affordable and Clean Energy

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0 MWh	1,197,600 MWh	1,197,600 MWh
Year 2	0 MWh	1,197,600 MWh	1,197,600 MWh
Year 3	0 MWh	1,197,600 MWh	1,197,600 MWh
Year 4	0 MWh	1,197,600 MWh	1,197,600 MWh
Year 5	0 MWh	1,197,600 MWh	1,197,600 MWh
Total	0 MWh	11,976,000 MWh	11,976,000 MWh
Total no. of crediting years	5 years		
Annual average over the crediting period	0 MWh	1,197,600 MWh	1,197,600 MWh

SDG 8: Decent Work and Economic Growth

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project intends to provide employment to at 15 persons. PP also intends to provide at least 01 training per year as confirmed during interview with PP representatives during remote validation audit.

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Year 2	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Year 2	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Year 4	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Year 5	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Total	0 Training, 0 Jobs	5 Training, 15 Jobs	5 Training, 15 Jobs
Total no. of crediting years	5 years		
Annual average over the crediting period	0 Training, 0Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs

4. REFERENCE

S. No.	Document/Evidence/Reference/Web blink, Version, Date
1.	Initial GS4GG PDD, version 02 dated 30/05/2021 Final GS4GG PDD, version 03 dated 07/02/2022 based on which the final opinion is provided.
2.	Minutes of Meeting for Local Stakeholders' Consultation
3.	Emission Reduction Sheet for the project activity
4.	Methodology: ACM0002 version 20.0
5.	Principles & Requirements Version 1.2
6.	Stakeholder Consultation And Engagement Requirements Version 2.1
7.	Safeguarding Principles & Requirements Version 1.2
8.	Site Visit And Remote Audit Requirements And Procedures Version 1.0
9.	Renewable Energy Activity Requirements v.1.4
10.	Validation & Verification Body Requirements Version 2.0
11.	Audit Techniques Version 1.0
12.	Standard: CDM Project Standard Version 03
13.	Standard: CDM Validation &Verification Standard Version 03
14.	Procedure: CDM Project Cycle Procedure Version 03
15.	Tools: Tool to calculate the emission factor for an electricity system, Version 7.0
16.	GS4GG guideline v1.2
17.	Technical specification of WTGs SG 2.6-114 (2.625 - 2.9) MW
18.	Training Records of project staff at site
19.	Declaration for non-receiving of ODA for project, dated 23/01/2020
20.	Universal declaration of Human Rights: https://www.un.org/en/universal-declaration-human-rights/

21.	Egyptian Labor Law: https://www.hg.org/legal-articles/egyptian-labor-law-31577
22.	The Egyptian Anti-Bribery Law https://www.egypttoday.com/Article/1/26807/Egypt-continues-fighting-corruption-by-adopting-ACA-law
23.	Arab Republic of Egypt Forest Law: http://forest-ngo.org/en/forest-arabia-en/353-law-no-102-1983
24.	Minutes of Meeting for Stakeholders' Feedback Meeting, dated 12/09/2021
25.	Emails sent to NGO, Stakeholders, villagers for stakeholder feedback round ,dated 06/08/2021
26.	Commissioning certificates, dated 13/11/2021
27.	UNFCCC Website for CDM mechanism: http://cdm.unfccc.int/
28.	HR employment records of the project staff on site
29.	PLF assessment report Lekela Egypt Wind Power BOO (S.A.E.), dated 10/06/2019
30.	Social Policy of Lekela Egypt Wind Power BOO (S.A.E.)
31.	Project Information Memorandum (PIM), dated July 2018
32.	EPC Contract dated 17/09/2019
33.	Power Purchase Agreement signed with Egyptian Electricity Transmission Company, S.A.E (EETC)
34.	Board resolutions, dated 30/11/2018
35.	CSR Policy of Lekela Egypt Wind Power BOO (S.A.E.)
36.	EHS Policy of Lekela Egypt Wind Power BOO (S.A.E.)

5. **FINAL PROJECT DESIGN CERTIFICATION STATEMENT**

Applus+ Certification have performed a validation of the "252 MW West Bakr Wind Farm Project" at Village: Ras Ghareb, State: Red Sea Governorate in Egypt. The validation was performed on the basis of UNFCCC criteria CDM VVS for PAs version 03, Gold Standard GS4GG guideline and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

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

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of annual emission reductions of 531,674 tCO_{2e} per year.

The validation has been performed following the requirements of the latest version of the CDM VVS version 03, Gold Standard GS4GG guideline and on the basis of the contractual agreement.

In detail the conclusions can be summarized as follows:

- The project does not result in negative social, environmental and/or economic impacts.
- The project contribution to Environment, Social Development and Economic and technological development
- The project additionality is sufficiently justified in the Gold Standard PDD
- The project does not result in diversion of ODA.
- Conservative assumptions were applied in the project description.
- The monitoring plan of SDG parameters is transparent and adequate.
- The project meets the stakeholder consultation requirements.

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

Date: 31/10/2022

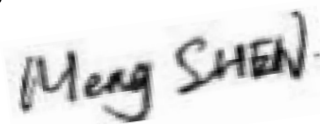
Lead Auditor: Mr. Ravi Kant Soni

Tech. Expert: Mr. Ravi Kant Soni

Tech. Reviewer: Mr. Simon Shen

Approver (*Applus+ Certification VVB Technical Manager*)

Mr. Agustín Calle de Miguel

ASSESSMENT TEAM	
Lead Auditor: RAVI KANT SONI	Technical Reviewer: SIMON SHEN
Signature: 	Signature: 
Approver: Mr. Agustín Calle de Miguel	
Signature: 	

Appendix 1: Corrective Action Request/Clarification Request/Forward Action Request resolution table

Table 1. Remaining FAR from validation and/or previous verification

Type:	☐ CAR CL/CR	☐ ☐ FAR	Number:	XX
Raised by:	NA		Ref. to checklist in GS4GG PDD:	NA
Description of the audit finding			Date:	DD/MM/YYYY
NA				
Project Participant's response			Date:	DD/MM/YYYY
NA				
Documentation provided as evidence by Project Participant				
NA				
Auditor's assessment comment			Date:	DD/MM/YYYY
NA				

Table 2. CL from this verification

Type:	☐ CAR CL/CR	☒ ☐ FAR	Number:	01
Raised by:	Mr. Ravi Kant Soni		Ref. to checklist in GS4GG PDD:	2.2
Description of the audit finding			Date:	15/11/2021
Please submit the following documents:				
1. PPA signed for the project. 2. No ODA declaration 3. Preliminary review form 4. EIA/ESIA report prepared for the project 5. Approval/NoC granted for the project from the government authorities.				
Project Participant's response			Date:	07/02/2022
The following documents are submitted herewith-				
1. PPA signed for the project. 2. No ODA declaration 3. Preliminary review form 4. EIA/ESIA report prepared for the project 5. Approval/NoC granted for the project from state government authorities.				
Documentation provided as evidence by Project Participant				
1. PPA signed for the project. 2. No ODA declaration 3. Preliminary review form 4. EIA/ESIA report prepared for the project 5. Approval/NoC granted for the project from state government authorities.				
Auditor's assessment comment			Date:	31/03/2022
The PP has submitted the requested documents, found to be satisfactory. CL #1 is closed.				

Table 1. CAR from this verification

Type:	☒ CAR CL/CR	☐ FAR	Number:	01
Raised by:	Mr. Ravi Kant Soni		Ref. to checklist in GS4GG PDD:	2.2
Description of the audit finding			Date:	15/11/2021
1. Please clarify why the methods/procedures to be followed for contribution of SDG 7 and SDG 8 is not described under section B.6.1 of the PDD. 2. Please clarify how the start of crediting period is appropriate and in line with the GS4GG guidelines. 3. Please discuss the actual implementation status of the project in the PDD.				
Project Participant's response			Date:	07/02/2022
1. Please be clarified that methods/procedures to be followed for contribution of SDG 7 and SDG 8 & SDG 13 has been explained in depth transparently under section B.7.1 "Data and parameters to be monitored". 2. Section C has been updated to revise the start date of the crediting period as per the date of commissioning of the project activity (COD) i.e. 13/11/2021, based on COD certificate. Also, the length of crediting period has been revised to 5 years in line with the defined five-year renewable certification cycle in the "Principle & Requirement" guidance. 3. Project has got commissioned and the COD certificate is being submitted to the assessment team.				
Documentation provided as evidence by Project Participant				
GS PDD Version 03 ER sheet Version 02 COD Certificate				
Auditor's assessment comment			Date:	31/03/2022
Method followed for contribution of SDG 7 and SDG 8 is included in the Revised PDD, found to be appropriate. The project is commissioned on 13/11/2021, hence the start date of crediting period is appropriate. The actual implementation status of the project in the PDD i.e. commissioned on 13/11/2021 has been verified and found appropriate CAR #1 is closed.				

Type:	☒ CAR FAR	☐ CL/CR	Number:	03
Raised by:	Mr. Ravi Kant Soni		Ref. to checklist in GS4GG PDD:	3.8
Description of the audit finding			Date:	15/11/2021
Section E.1: Please provide the relevant documents with reference to initial stakeholder consultation. Please provide complete information's about stakeholder feedback round in section E.1 of the PDD, also include the details of the dates during which the stakeholder feedback round was conducted i.e., the documents were made available for public comments for at least 60 days. Please submit SCR (Stakeholder Consultation Report) including the information in all the sections as per the GS template. Also provide the supportive documents (MoM, attendance list etc) for the same.				
Project Participant's response			Date:	07/02/2022

GS PDD Version 3, Section E has been updated to provide the details of stakeholder feedback round conducted for the project activity. Also, the Stakeholder Consultation Report in LSC template has been prepared in line with the requirement to provide the details of the stakeholder engagement for the project activity.

PP would like to clarify that the Stakeholder Feedback Round for the project has been conducted in line with the "GS4GG STAKEHOLDER CONSULTATION AND ENGAGEMENT REQUIREMENTS". Being a retroactive project, two rounds of stakeholder consultation including one mandatory physical meeting and one stakeholder feedback round lasting for two months have been conducted for the project activity.

A physical stakeholder consultation round has been conducted on 12/09/2021 in line with the GS4GG – "STAKEHOLDER CONSULTATION AND ENGAGEMENT REQUIREMENTS" version 1.2, for the project activity, the experts from the local representative have been invited and the safeguarding principle were discussed in depth. Apart from this, the project is also undergoing for comments from the public for mandatory 60 days since 29/06/2021 at the following link: <https://www.firstclimate.com/en/our-carbon-offset-projects/gs-project-weblink-west-bakr-wind-farm-project/>.

Email notifications were sent to the NGOs, Sustain Cert & Gold Standard to provide the feedback for the project activity, if, any.

Continuous Input and Grievance mechanism has also discussed during the stakeholder consultation & Input & Grievance Expression Process Book is also formed and placed at project site to ensure continuous engagement with stakeholders.

PP is hereby submitting the supportive documents (MoM, attendance list, photographs etc) to the assessment team.

A detailed ESIA study is also undertaken for the project activity, the ESIA assessment is also, being submitted to the assessment team.

Documentation provided as evidence by Project Participant

GS PDD Version 03
 SCR Version 01
 ESIA
 LSC-MOM
 LSC-Attendance
 LSC-Photos

Auditor's assessment comment	Date:	31/03/2022
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The PP has provided the information regarding the initial stakeholder consultation conducted on 12/08/2019 in the SCR report, found to be appropriate, hence accepted.
 The PP has submitted the revised PDD including the information's about stakeholder feedback round in section E.1 of the PDD, found to be appropriate, hence accepted.
 The PP has also submitted the Stakeholder Consultation Report (SCR) along with the attendance sheet, MOM, invitations, photographs and stakeholder feedback forms, found to be appropriate.
 CAR #2 is closed.

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Mr. Ravi Kant Soni	Ref. to checklist in GS4GG PDD:	3.8.1
Description of the audit finding		Date:	15/11/2021

1. PP is requested to clarify why the input parameters under section B.5 of the PDD, along with relevant sources is not reported. Also clarify how the PLF of the project activity has been estimated and the conservativeness of the same, as per EB 48, Annex 11.
2. Please submit the IRR & benchmark calculation sheet.
3. Please clarify why the latest version of Investment Analysis Tool is not referred.
4. Kindly clarify how the start date is in line with the GS guidelines and provide the relevant evidence for start date.
5. Please clarify how the degradation factor considered for project activity is appropriate.
6. Please clarify why actual percentage variation to the parameters considered for sensitivity analysis is not presented while determining breaching limit of benchmark.
7. Section A.2. of the PDD states that the project is not registered under any other mechanism, however, Section B.5. mentions that the UNFCCC has been notified regarding the project. PP shall clarify if they intend to pursue the project as a GS-CDM project.

Common practice analysis:

Please submit common practice analysis sheet and clarify about the criteria to identify the projects under "different technology".

Project Participant's response	Date:	07/02/2022
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GS PDD Version 03 has been revised to report the requisite information:

1. GS PDD Section B.5 has been revised to report the input parameters along with relevant source. Also, it is to be clarified that the PLF of the project activity has been considered in line with the estimation provided by the third part "Energy Assessment Report", in conformity with the EB 48, Annex 11.

PP is submitting the source documents along with the PLF Assessment report to the assessment team.

2. The IRR & benchmark calculation sheet is being submitted with the revised set of documents.

3. GS PDD Section B.5 has been revised to refer the latest version of Investment Analysis Tool (EB112 Annex 02).

4. GS PDD has been revised to mention the start date (i.e. 17-09-2019 – Date of Notice to proceed signed for the project activity) in line with the definition of Start date of the project activity provided under the GS guidelines and also submitting the same as the relevant evidence for the start date.

5. The degradation factor has not been considered for Wind power project activity as the generation is considered based on P50 Energy Assessment carried for 20 years.

6. GS PDD Section B.5 has been revised to report the actual percentage variation to the parameters considered for sensitivity analysis while determining breaching limit of benchmark.

7. GS PDD has been revised to provide relevant information in the PDD that the project initially was also seeking CDM registration however, now the project developer is pursuing with GS registration only. Project is on hold under CDM due to the undistinguishable status of CDM mechanism post COP 26.

PP is hereby submitting the "Common practice analysis sheet and also revised GS PDD to provide clarity on the identified project defined as "different technology". There is only one project identified within the defined selection criteria as per the stepwise approach explained in the Common Practice tool. It is concluded that the project activity does not satisfy condition (i) and (ii) both, hence the proposed project activity is not a "common practice" within a sector in the applicable geographical area.

Documentation provided as evidence by Project Participant

PIM,
 PLF Assessment Study
 ESIA
 Common Practice Analysis sheet
 Notice to Proceed

Auditor's assessment comment	Date:	31/03/2022
The PD has submitted the revised PDD including the input parameters under section B.5, found to be appropriate and consistent with the IRR calculation sheet. The PLF assessment report is prepared by DNV GL is submitted, found to be in line with the guidelines as per EB 48, Annex 11. The PP has submitted the IRR & benchmark calculation sheet. And values of the input parameters as reported in the IRR sheet are sourced from respective documents reference mentioned and is found to be consistent. PD has been revised section B.5 to incorporate the latest version of Investment Analysis Tool, hence acceptable The date of Date of Notice to proceed is considered as start date of project, found to be satisfactory. PLF has been sourced from PLF assessment report and found consistent and not considering degradation factor is acceptable and found to be appropriate. The PD has presented the actual percentage variation to the parameters considered for sensitivity analysis along with the breaching limit of benchmark, found to be appropriate. The project was initially planned for CDM registration; however, the PD has decided to take up this project under GS4GG only. The PD has provided the CPA analysis sheet and updated the common practice analysis in the PDD including the criteria for projects identified under different technology, found to be satisfactory. CAR #3 is closed.		

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	04
Raised by:	Ravi Kant Soni	Ref. to checklist in GS4GG PDD:	3.8.2
Description of the audit finding		Date:	15/11/2021
Please clarify how safeguarding principle assessments (below criteria) that require an Expert Opinion for the project type is completed.			
• (Safeguarding Principles 3.4.1) sites of cultural and historical heritage • (Safeguarding Principles 3.4.2) forced eviction and displacement • (Safeguarding Principles 3.4.3) Land Tenure and Other rights • (Safeguarding Principles 3.4.4) Indigenous peoples • (Safeguarding Principles 3.6.1) Labor rights • (Safeguarding Principles 4.2.1) Impact on Natural Water Patterns/Flows • (Safeguarding Principles 4.2.2) Erosion and/or water body Instability (Safeguarding Principles 4.3.10) High Conservation Value Areas and Critical Habitat			
Project Participant's response		Date:	07/02/2022
PP would like to clarify that the project activity has got the approval from the government for the construction & operation of the project activity and considered all the safeguarding principle for the development of project activity. Also, the safeguarding principle assessment for the project activity has been explained in depth under the Appendix 1 of the GS PDD.			
Furthermore, PP has conducted the detailed ESIA study for the project and implementation of the project has undertaken in line with all the national guidelines and ESIA study prerequisite.			
• As per the detailed ESIA report, there are no protected archeological and cultural heritage sites are reported within the project footprint". Law on Cultural heritage is protected against alteration, damage or removal by the "law on cultural heritage".			

- As per the detailed ESIA report, Project activity is a Wind power project planned in the land leased by the project activity is mostly barren land. The project does not involve any settlement areas. Thus, this project does not cause the physical or economic relocation of peoples.
- There are no uncertainties regarding land tenure, access rights, usage rights or land ownership. The Wind turbines are all developed on government land and some private land and all of them belongs to "Lekela Egypt Wind Power BOO (S.A.E.)" under land lease agreement. Moreover, the project is not located with close proximity of any forest.
- As explained in ESIA, no cultural heritage/indigenous people are replaced by the project.
- The project proponent is committed to the employee's workplace health & safety during all phases of the project. All employees will attend health & safety trainings. This is issued in the Labour code on Occupational Safety, Health and Working Conditions and UN Agreement on Human Rights.
- Water consumption is not considered significant for wind power projects. There are no fresh surface water bodies or aquatic life in the project area. In addition, given the nature of the project will be no interaction with the groundwater in the area especially that the groundwater table.
- There is absence of sensitive ecological area (Reserve Forest area) in the core area of project. The soil of the project site is composed of a hard sandy substrate covered with gravel, stones and boulders. Moreover, there are no depressions where water would accumulate, allowing the growth of vegetation. As a result, the Lekela Egypt site is totally devoid of vegetation. However, such impacts would be primarily confined to the project site during initial periods of the construction phase and would be minimized through adoption of mitigation measures like paving and surface treatment and water sprinkling.

ESIA report states that the projected area of the Project is saline soils, not located in sensitive ecological zones, biodiversity conservation areas, and there are no rare and valuable plant and animal species.

Documentation provided as evidence by Project Participant

ESIA local Disclosure Report
 ESIA report
 LSC Report

Auditor's assessment comment	Date:	31/03/2022
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The assessment team has verified through section 2.2.8 and confirmed that no cultural heritage is indicated in the project area or its proximity.

As per the section 2.4 of the ESIA report *proposed project since the activities will not involve any involuntary resettlement or change in the land use. The project is to be established within a land area where no human settlements are established, and no community activities take place. The area has been designated to NREA for establishing the wind farms projects.*

As per the ESIA report the whole land area for petroleum and wind projects is and will remain the ownership of the Government of Egypt (GoE). The area has been designated for petroleum activities under concession agreements between the GoE and the petroleum companies. The GoE has also assigned the wind park area for NREA for constructing wind farms under the FIT and BOO schemes. The oil concession agreements are related to the underground resources, while the wind farms are above ground.

As per the measures as outlined under ESIA report section 3.7 :

- A health and safety policy will be applied throughout the project and among all project contractors.
- Abide by all national occupational health and safety regulations, Law 12/2003
- Provision of suitable PPE, training and ongoing safety checks
- Equipment periodic maintenance according to manufacturers' schedule

Section 6.1.3 of ESIA report: There are no fresh surface water bodies or aquatic life in the project area. In addition, given the nature of the project will be no interaction with the groundwater in the area especially that the groundwater table is at considerable depth, (refer to baseline chapter) Moreover, the project activities during construction and operation have no interaction with the groundwater in the area.

Cumulative effects rising from parallel construction activities for all sites in the wind farm complex will be significantly higher than for one single project. Water will primarily be used during construction for sanitary purposes and concreting (in case concrete mixing is onsite and ready-mix concrete is not used) and abstracting water from the existing water pipeline (Hurghada – Ras Gharib) may impact the local communities served by the water pipeline.

During operation, few employees will be present on site and thus water consumption and wastewater generation will be inconsequential.

CAR #4 is closed.

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	05
Raised by:	Ravi Kant Soni	Ref. to checklist in GS4GG PDD:	3.9
Description of the audit finding	Date: 15/11/2021		
Please submit the ER calculation sheet. Please clarify why the complete information about the internal procedure which will be followed for resolution of the complaints and grievances received from local stakeholders is not provided in the PDD. Please clarify why the source documents/weblinks referred for EF calculation is not referenced in the PDD (Section B.6.1) .			
Project Participant's response		Date:	07/02/2022
Please be noted that GS PDD version 03 & the ER sheet Version 02 has been revised appropriately to report the combined Margin Emission Factor calculation in line with the latest version of the Tool 7 (EB100 Annex 4) & the most updated/latest Annual Reports of 2019/2020. MOEE Annual Reports for the indicated year, Table performance statistics of power plants website: http://www.moee.gov.eg/english_new/report.aspx GS PDD Version 03 has been revised to provide the complete information about the internal procedure & reporting template followed for resolution of the complaints and grievances received from local stakeholders. GS PDD Version 03 & the ER sheet version 02 are made consistent with the revision.			
Documentation provided as evidence by Project Participant			
GS PDD Version 03 ER sheet Version 02 Grievance Mechanism & template to be used for the project activity.			
Auditor's assessment comment		Date:	31/03/2022
The PP has submitted the ER calculation sheet, found to be satisfactory. The PP has appropriately described the internal procedure which will be followed for resolution of the complaints and grievances received from local stakeholders in the revised PDD. The PP has mentioned the source documents/weblinks referred for EF calculation in the PDD (Section B.6.1), found to be appropriate. CAR #5 is closed.			

Table 2. FAR from this validation

Type:	☐ CAR ☐ CL/CR ☒ FAR	Number:	xx
Raised by:		Ref. to checklist in GS4GG PDD:	-
Description of the audit finding	Date: -		
NA			
Project Participant's response		Date:	
NA			
Documentation provided as evidence by Project Participant			
NA			
Auditor's assessment comment		Date:	
NA			

Appendix 2: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Mr. Ravi Kant Soni	Mr. Ravi Kant Soni is a certified lead auditor for Lead Auditor ISO 14001:2004 & Lead Auditor ISO 14064:2006 GHG Inventory and verification. He has more than 10 years of work experience across Climate Change, Environmental Management & Monitoring, Health & Safety Management, and Statutory Compliance. He was involved in more than 100 CDM validation and verifications activities and Gold Standard, VER projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1 technical area 1.2. He has done Master in Technology (Energy Management) from a premier institute, School of Energy & Environmental Studies, DAVV, Indore (M.P.), India and Bachelor of Engineering (Mechanical Engineering) from M.I.T.S Gwalior Jiwaji University Gwalior, India.
Mr. Simon Shen	Mr. Simon Shen (master's degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ Certification for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ Certification, he had been worked for TÜV SÜD as a GHG Validator/Verifier and ISO 9001/14001 Lead Auditor for 5.5 years.