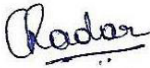


**Validation report form for renewal of crediting period for  
Gold Standard project activities**

**BASIC INFORMATION**

<b>Title of the project activity</b>	West Huaybong 3 wind farm project	
<b>GS Reference Number</b>	GS7746	
<b>Scale of the project activity</b>	Large Scale	
<b>Number and duration of the next crediting period</b>	Number of crediting period: 2 Duration of Crediting period: 01/12/2024 to 30/11/2027	
<b>Version number of the validation report</b>	2	
<b>Completion date of the validation report</b>	08/08/2025	
<b>Version number of GS PDD to which this report applies</b>	9	
<b>Project participants</b>	First Korat Wind Company Limited	
<b>Project Representative</b>	Kosher Climate India Pvt. Ltd.	
<b>Host Party</b>	Thailand	
<b>Certification Pathway</b>	Impact statements and Products	
<b>Product Certification</b>	GS VER	
<b>Activity Requirements applied</b>	Renewable energy activity requirement, v1.4	
<b>Product Requirement</b>	GHG Emission Reduction & Sequestration Product Requirement, v2.2	
<b>Applied Methodology</b>	ACM0002 "Grid-connected electricity generation from renewable sources" (Version 22)	
<b>Sectoral scopes</b>	Sectoral Scope 1: Energy industries (renewable-/non-renewable sources)	
<b>Estimated amount of SDG Impact</b>	<b>SDGs</b>	<b>Estimated SDG Impact</b>
	SDG 13	132,339 tCO <sub>2</sub> /annum
	SDG 7	232,500 MWh electricity generation
	SDG 8	40 number jobs created
<b>Name of the VVB</b>	4K Earth Science Private Limited	
<b>Name, position and signature of the approver of the validation report</b>	 Chandrakala R Managing Director	



## SECTION A. Executive summary

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4K Earth Science Private Limited has been contracted by 'Kosher Climate India Pvt. Ltd' to perform a validation of the registered GS VER Project 'West Huaybong 3 wind farm project' (GS Ref# GS7746) in Thailand for renewal of crediting period.

The scope of the validation is defined as an independent and objective review of the revised GS Project Design Document, project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the requirement of Gold standard Principles and Requirements (Version 2.1) and Gold Standard Validation and Verification Standard (version 2.0)

The report is based on the assessment of the Project design document (PDD) undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., on site visit, electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools and guidance

The GS Project activity involves installation of installation of 103.5 MW wind power project. The project is implemented in Nakhon Ratchasima Province; Thailand and it is implemented by First Korat Wind Company Limited. The project generates renewable electricity and supplied to national grid and thereby avoiding CO<sub>2</sub> emission by displacing equivalent electricity produced from grid connected power plants. The project is registered in GS and currently applying renewal for second crediting period ie, 01/12/2024 to 30/11/2027.

It is also noted that the project is already registered under CDM and the registration details are given below:

Project title: West Huaybong 3 wind farm project (CDM 7474)

Registration Date: 29/10/2012

1<sup>st</sup> Crediting period: 01/12/2012 – 30/11/2019

2<sup>nd</sup> crediting period 01/12/2019 – 30/11/2026

The project correctly applies CDM methodology ACM0002 "Grid-connected electricity generation from renewable sources" (Version 22)

The emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The estimated SDG impacts from the project are as follows:

SDGs	Estimated SDG Impact
SDG 13	132,339 tCO <sub>2</sub> /annum emission reduction
SDG 7	232,500 MWh electricity generation
SDG 8	40 jobs created

The SDG estimation has been checked and it is deemed likely that the stated amount is achievable given the underlying assumptions do not change

The review of the project design document and the subsequent follow-up interviews have provided 4KES with sufficient evidence to determine the project's fulfillment of all the stated criteria. In our opinion, the project meets all applicable Gold Standard requirements and hence the request for renewal of crediting period is considered acceptable.

The project will be recommended to the Gold Standard with a request for renewal of crediting period.

The project is not recommended for renewal of crediting period

## SECTION B. Validation team, technical reviewer and approver

### B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader and Technical Expert (1.2) (GS Approved Auditor)	IR	S Acharya	Swati	Central Office-4KES	x	x	x	x
2.	Validator	IR	S	Sriram	Central Office-4KES	x	-	-	x
3.	Trainee	IR	S Shetty	Rakshita	Central Office-4KES	x	-	-	x
4	Local Expert	EI	Phoolcharoen	Siam	Central Office-4KES	-	x	x	-

### B.2. Technical reviewer and approver of the validation report for RCP

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	IR	Sharma	Chetan Swaroop	Central Office-4KES
2	Approver	IR	R	Chandrakala	Central Office-4KES

## SECTION C. Means of validation

### Auditing Techniques Employed

The following auditing techniques were employed to ensure comprehensive assessment:

- Review of project documentation (Refer section C.1 below)
- On-site inspection of project infrastructure and activities (Refer section C.2 below)
- Stakeholder interviews conducted in person (Refer section C.3 below)

### Risk Assessment of the Techniques Employed

- Document review: Low risk; original documents were verified for authenticity.
- On-site inspections: Low risk; direct access to project site allowed full validation.
- Stakeholder interviews: Low risk; in-person interview was conducted.

### Mitigation Measures Employed by the VVB

The information collected through document review, onsite inspection and stakeholder interview are compared for consistency

## Observations

There were 4 CARs and 3 CL raised during the validation process and are closed satisfactorily based on the response provide by project developer. Also a FAR is raised to check during the 1<sup>st</sup> verification of the 2<sup>nd</sup> crediting period. Please refer Appendix 4 for more information

## Conclusion

The auditing techniques employed are deemed sufficient for the purpose of the audit and it adhered to the Gold Standard requirements. The integrity of the audit/assessment process was maintained through a robust risk mitigation framework. On-site visits complemented document review effectively, addressing potential limitations in data reliability.

### C.1. Desk/document review

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The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., on site visit, electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidance and GS decisions.

All the documents used for arriving validation conclusion are listed in Appendix 03 and referenced accordingly in validation report

### C.2. On-site inspection

Duration of on-site inspection: 13/03/2025				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening Meeting	Office	13/03/2025	Swati S Acharya
2	Visit to all installations of project activity	Project site	13/03/2025	Siam Phoolcharoen
3	Document Review & Closing Meeting	Office	13/03/2025	

### C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Thansirikoon	Nojeng	Site In-charge	13/03/2025	- Roles and responsibilities	Swati S Acharya
2	Songpan	Narong	O&M Manager	13/03/2025	- Technical details	
3	Mazumder	Ahanish	Kosher	13/03/2025	- Operational status - Revised baseline - Revised monitoring requirement - Stakeholder consultation process	Siam Phoolcharoen
4	Chaiyakit	Chi	Local Stakeholder	13/03/2025	- Stakeholder consultation process	
5	Chabangram	Thirasak	Local Stakeholder	13/03/2025	- Grievance mechanism	

### C.4. Sampling approach

No sampling approach is followed in the validation.

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

Area of validation findings	No. of CL	No. of CAR	No. of FAR
D.1 Compliance with PDD form	1	1	-
D.2 Project Design	-	-	-
D.3 Eligibility of the project under Gold Standard	-	-	-
D.4 Application and selection of methodologies and standardized baselines	-	-	-
D.5 Validity of original baseline or its update	1	1	-
D.6 Contribution to SDGs	-	-	-
D.7 Assessment of SDG outcomes	-	1	-
D.8 Validity of monitoring plan	-	-	-
D.9 Crediting period	1	-	1
D.10 Gold Standard Requirement on Design Certification Renewal	-	1	-
D.11 Assessment of safeguarding principles	-	-	-
D.12 Stakeholder Consultation	-	-	-
D.13 Post-registration changes	-	-	-
Others (please specify)	-	-	-
<b>Total</b>	<b>3</b>	<b>4</b>	<b>1</b>

## SECTION D. Validation findings

### D.1. Compliance with PDD form

<b>Means of validation</b>	<p>Validation team checked the GS4GG Project Design Document with latest version of 'Gold Standard for the Global Goals Key Project Information &amp; Project Design Document (PDD)' in the GS website (ie, version 1.5). PP used the same latest version for preparation of PDD.</p> <p>The validation team also compared the original registered PDD and the revised PDD submitted for the RCP and confirmed that the information transferred to the later valid version of the PDD form is materially the same as that in the design certified PDD. There is not change in the project design.</p>
<b>Findings</b>	CL-03 is raised and closed satisfactorily
<b>Conclusion</b>	PP prepared the revised PDD based on the version 1.5 of the template. Validation team confirms that final PDD is completed using the valid version of the applicable GS4GG PDD form at the time of submission.

### D.2. Project Design

<b>Means of validation</b>	<p>The project comprises 45 wind turbine generators (WTGs), each with a rated capacity of 2.3 MW, giving a total installed capacity of 103.5 MW. The turbines are Siemens SWT-2.3-101 models, featuring a horizontal-axis, three-blade design, with a design operational life of 20 years. This has been verified through site visit observations and review of the turbine technical specifications. It is confirmed that no changes to the project design have occurred since implementation.</p> <p>During the site visit, the validation team also verified that all WTGs are operational. The turbines are situated within Tambol Huaybong of Amphur Dan Khun Thot and Tambol Nong Wang of Amphur Teparak, Nakhon Ratchasima Province, Thailand. A random cross-check of the geographical coordinates of selected WTGs was conducted during the visit.</p> <p>Based on site observations and discussions with the O&amp;M team, it is confirmed that the installed specifications align with the design described in the registered PDD. No deviations have been identified in the number of turbines, their capacity, model, layout, or technology from the validated design.</p>
<b>Findings</b>	No finding
<b>Conclusion</b>	The Validation team can confirm that the design features 45 turbines, with the provided GPS coordinates and technical specifications consistent with the original project design. No deviations in turbine number, location, or specifications have been identified that would affect compliance with the validation scope.

### D.3. Eligibility of the project under Gold Standard

<b>Means of validation</b>	<p>The eligibility requirements are updated based on the latest GS4GG Requirements. With regard to Design Certification Renewal, the followed is assessed:</p> <p>(a) Changes in the Project as related to the General Eligibility Criteria</p> <ul style="list-style-type: none"> <li>• There are no changes in the general eligibility criteria.</li> <li>• The type of project remains the same – Renewable energy which is approved by GS</li> <li>• The location of the project is Thailand and continues to be the same</li> </ul> <p>1) Project Area, Project Boundary and Scale – the project boundary is defined as per applied methodology and there is no change in it. From verification GS registry and other voluntary and compliance standard registries (such as VCS, GCC etc.), it is confirmed that he project area does not overlap with any other Gold Standard or other voluntary or compliance standard program of a similar nature. However, it is noticed the the project is registered under CDM (Reference number CDM7474). The project owner also confirmed that the project has or will not issue any other environmental attribute (including CER) and GS VER for the same vintage from this project. Hence, there is no risk of double counting.</p> <ul style="list-style-type: none"> <li>• Host Country Requirements – the project is in compliance with the host country’s legal, environmental, ecological and social regulations. From verification of host country regulations it is also confirmed that Thailand or project region does not either have an emission reduction cap enforced OR have the possibility to trade emissions that include the scope of the proposed project.</li> <li>• Contact Details – there is no change in the Project Proponent and remains same.</li> <li>• Legal Ownership – Continues to be the same and First Korat Wind Company Limited. is the uncontested legal owner of the carbon credits generated from each of the project.</li> <li>• Other rights – There is no change in other resource use as no other resources are involved.</li> <li>• ODA Declaration – No ODA funds involved in the project which is confirmed from ODA Declaration provided by the project owner.</li> </ul> <p>As per the assessment above, the project is incompliance with the GS4GG eligibility criteria.</p>
<b>Findings</b>	<p>CAR-01 is raised and closed satisfactorily</p>
<b>Conclusion</b>	<p>PP has justified the eligibility of the project as per the Gold Standard General eligibility requirements. Based on the document review and interview with PP, the validation team confirms that the project is in compliance with the Section 3 requirements of GS4GG Principles Requirements, v2.1.</p>

### D.4. Application and selection of methodologies and standardized baselines

<b>Means of validation</b>	<p>For the 1<sup>st</sup> crediting period, the project applied the following methodology</p> <p>ACM0002 “Grid-connected electricity generation from renewable sources” (Version 20).</p> <p>During this renewal of the crediting period the PP is using the GS approved methodology and complies with all the requirements of the below mentioned methodology:</p> <p>ACM0002 “Grid-connected electricity generation from renewable sources” (Version 22)</p>
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The assessment team has validated the documentation referred to in the revised PDD for renewable of crediting period and verified the documentation content for verifying the justification of the applicability of the methodologies and confirmed that the documentation referred to in the PDD is correctly quoted and interpreted.

Applicability Criteria	Applicability status
<p>This methodology is applicable to grid-connected renewable power generation project activities that:</p> <p>(a) install Greenfield power plant; (b) involve a capacity addition to (an) existing plant(s); (c) involve a retrofit of (an) existing plant(s)/unit(s); (d) involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) involve a replacement of (an) existing plant(s)/unit(s) or (f) Install a Greenfield power plant together with a grid-connected Greenfield pumped storage power plant. The greenfield power plant may be directly connected to the PSP or connected to the PSP through the grid.</p>	<p>The project activity is a Green field, grid connected renewable power plant. Therefore, it confirms to the said criteria</p>
<p>In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <p>(a) Integrate BESS with a Greenfield power plant;</p> <p>(b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic<sup>1</sup> or wind power plant(s)/unit(s);</p> <p>(c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s);</p> <p>(d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s)</p> <p>(e) Integrate a BESS together with a Greenfield power plant that is operating in coordination with a PSP. The BESS is located at site of the greenfield renewable power plant.</p>	<p>Not applicable as the project does not involve integration of BESS.</p>
<p>The methodology is applicable under the following conditions:</p> <p>(a) Hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar</p>	<p>The project activity is the installation of a new grid connected renewable wind power project. Thus, it meets the first applicability condition</p>

	<p>power plant/unit, wave power plant/unit or tidal power plant/unit;</p> <p>(b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit must have started commercial operation prior to the start of a minimum historical reference period of five years. The reference period is used for the calculation of baseline emissions and defined in the baseline emission section. Furthermore, no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity;</p> <p>(c) In case of Greenfield project activities applicable under paragraph 7 (a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g. by referring to feasibility studies or investment decision documents);</p> <p>(d) The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies<sup>2</sup> may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g. week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods</p>	
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	<p>of the monitoring period.</p> <p>(e) In case the project activity involves PSP, the PSP shall utilize the electricity generated from the renewable energy power plant(s) that is operating in coordination with the PSP during pumping mode.</p>	
	<p>In case of hydro power plants, one of the following conditions shall apply:</p> <p>(a) The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs; or</p> <p>(b) The project activity is implemented in an existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3) is greater than 4 W/m<sup>2</sup>; or</p> <p>(c) The project activity results in new single or multiple reservoirs and the power density calculate equation (3), is greater than 4 W/m<sup>2</sup>.</p> <p>(d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density of any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m<sup>2</sup>, and all of the following conditions shall apply.</p> <p>(i) The power density calculated using the total installed capacity of the integrated project, as per equation (4) is greater than 4W/m<sup>2</sup>;</p> <p>(ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity;</p> <p>(iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m<sup>2</sup> are:</p> <p>(a) Lower than or equal to 15 MW; and</p> <p>(b) Less than 10% of the total installed capacity of integrated</p>	<p>The proposed project activity is the installation of wind power plant. Therefore, the said criteria is not applicable</p>

	hydro power project	
	<p>In the case of integrated hydro power projects, project proponent shall:</p> <p>(a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or</p> <p>(b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability indifferent seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.</p>	<p>The proposed project activity is the installation of wind power plants/units. Therefore, the said criteria is not applicable</p>
	<p>In the case of PSP, the project participants shall demonstrate in the PDD that the project is not using water which would have been used to generate electricity in the baseline.</p>	<p>Not applicable as the project activity does not involve PSP.</p>
	<p>The methodology is not applicable to:</p> <p>(a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;</p> <p>(b) Biomass fired power plants;</p>	<p>The proposed project activity is the installation of wind power plant. Therefore, the said criteria is not applicable</p>
	<p>In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, that is to use the power generation equipment that was</p>	<p>The proposed project activity is the installation of wind power plants. Therefore, the said criteria is not applicable</p>

	<p>already in use prior to the implementation of the project activity and undertaking business as usual maintenance”.</p> <p>Applicability conditions of “Tool to calculate the emission factor for an electricity system” v7 /15/:</p> <ul style="list-style-type: none"> <li>• OM, BM and CM are estimated using the tool under section B.4 of the PDD for calculating baseline emissions.</li> <li>• The project activity is grid connected and thus emission factor is calculated and thus OM, BM and CM are estimated using the tool under section B.4 of the PDD for calculating baseline emissions.</li> <li>• The project activity is located in Thailand, a non-Annex I country. Therefore, this criterion is not applicable for the project activity.</li> <li>• The project activity is a grid connected wind power project. Therefore, this criterion is not applicable for the project</li> </ul> <p>Hence, the project satisfy all relevant criteria of “Tool to calculate the emission factor for an electricity system” v7.</p>
<b>Findings</b>	CAR-03 is raised and closed
<b>Conclusion</b>	The project fulfils all relevant criteria of the applied ACM0002 “Grid-connected electricity generation from renewable sources” (Version 22) and relevant Tool referred by the methodology “Tool to calculate the emission factor for an electricity system” (version 7). Hence use of the selected methodology is appropriate for this project activity.

#### D.5. Validity of original baseline or its update

<b>Means of validation</b>	<p>The baseline scenario as depicted in the PDD is checked during the interview with the plant official and project consultant.</p> <p>Assessment team referred “CDM Methodological tool (EB 66, Annex 47) “Assessment of the validity of the original / current baseline and update of the baseline at the renewal of the crediting period.” (Version 03.0.1)” to check the validity of the original baseline or its update. Following are the observation of the assessment team regarding selected baseline for the project activity in this present 2<sup>nd</sup> crediting period:</p> <p>Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies</p> <p>The PDD discusses any new national and/or sectoral policies or regulations which entered into force since the time of registration of the project activity that could have an impact on the baseline or GHG emission reductions. The Government of Thailand has put into effect the following regulations since that time:</p> <ul style="list-style-type: none"> <li>• <b>Power Development Plan (PDP 2018–2037):</b> Outlines Thailand’s electricity development strategy, with targets for increasing the share of renewables in the energy mix.</li> <li>• <b>Alternative Energy Development Plan (AEDP 2018–2037):</b> Aims to increase the share of renewable energy to 30% of total final energy consumption by 2037.</li> <li>• <b>National Energy Plan and Thailand’s Long-Term Low Greenhouse Gas Emission Development Strategy (LTS):</b> Commit to transitioning towards a low-carbon economy.</li> </ul> <p>The above policies provide strategic direction and indicative targets, but they do not mandate the exclusive or compulsory use of renewable energy for electricity generation.</p> <p>The baseline of continuation of the current situation remains valid under these regulations, and the overall energy mix of the Thailand National grid has not changed</p>
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dramatically since the start of the first crediting period.

Hence, the baseline remains unchanged for the present (2<sup>nd</sup>) crediting period since there is no policy been revised and/or is currently in force as well, therefore the baseline scenario is still in compliance with all the relevant mandatory national and/or sectoral policies.

Step 1.2: Assess the impact of circumstances

There are no new circumstances that can impact the original baseline. The baseline emission factor value is however updated based on the current data available for the grid.

Step 1.3: Assess whether the continuation of the use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

The baseline scenario was the electricity import/generation from the power plants connected to the electricity grid. The project activity is green field project and there is no any baseline equipment or investment involved in project activity. Therefore, this condition is not applicable to the project activity.

Step 1.4: Assessment of the validity of the data and parameters

This step stipulates that “Where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the project activity prior to the implementation of the project and cannot be updated because the historical situation does not exist anymore as a result of the CDM project activity.”

In the registered PDD, no parameters are fixed ex-ante. However, PP now included the combined margin emission factor ex-ante in the PDD for the 2<sup>nd</sup> crediting period.

Though the baseline remains same, the baseline emission factor needs to be updated as the latest data available.

Now the emission factor is fixed ex-ante and thus will be used for the complete 2<sup>nd</sup> renewable crediting period and for entire verification conducted under 2<sup>nd</sup> renewable crediting period. Application of Steps 1.1, 1.2, 1.3 and 1.4 confirmed that the current baseline is valid for the Second crediting period but data and parameters needs to be updated. Therefore step 2 is used

Step 2: Update the current baseline and the data and parameters

Assessment in the Steps 1.1, 1.2, 1.3 and 1.4 shows that the current baseline emission factor needs to be updated. Hence step 2 is applicable.

Step 2.1: Update the current baseline

PP has updated the baseline emission factor for the 2<sup>nd</sup> crediting period based on the latest approved version of the methodology applicable to the project activity (ie, ACM0002, version 22). Since the latest grid emission factor considers all sectoral policies and circumstances that are applicable at the time of request for renewal of the crediting period, the baseline emission factor is estimated in the context of sectoral policies and circumstances that are applicable at the time of request for renewal of the crediting period.

Step 2.2: Update the data and parameters

In the registered PDD, no parameters are fixed ex-ante. However, PP now included the combined margin emission factor ex-ante in the PDD for the 2<sup>nd</sup> crediting period

	<p>As per the PDD, the project is connected to the Thailand Grid. Hence the ex-ante parameter “Combined margin CO<sub>2</sub> Emission Factor” is determined ex-ante for the 2<sup>nd</sup> crediting period.</p> <p>The “Combined margin CO<sub>2</sub> Emission Factor” is estimated as per the Guidance given in “Tool to calculate the emission factor for electricity system” version 07 and the results are published in Report ‘Thailand Grid Emission Factor for GHG Reduction Project/Activity’ dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public Organisation). The value considered is checked by the assessment team and found correct.</p> <p>Hence as per para 24 of ACM002 version 27 (latest Methodology), the baseline of the project is as follows: <i>“If the project activity is the installation of a Greenfield power plant with or without a BESS as described under paragraph 4(a) or paragraph 5(a), the baseline scenario is electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in TOOL07”.</i></p> <p>The project activity involves implementation of green field power plant and supply generated electricity to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the grid, which is fed mainly by fossil fuel fired plants.</p> <p>The above selected baseline is correct and thus applicable to the project activity and in line with approved methodology for the applied renewable of crediting period.</p>
<b>Findings</b>	CAR-02 is raised and closed satisfactorily.
<b>Conclusion</b>	<p>Validity of the baseline has been correctly assessed and the parameters are updated as per the Methodological Tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” Version 03.0.1 in the PDD submitted for the renewal of crediting period.</p> <p>The baseline parameters affecting the baseline emission that is sensitive to changes in policies and circumstances are OM, BM &amp; CM which is updated for the 2<sup>nd</sup> crediting period based on the Report ‘Thailand Grid Emission Factor for GHG Reduction Project/Activity’ dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public Organisation) which valid at the time of this validation.</p> <p>The latest methodology and tools are applied correctly for determination of the updated baseline and the estimation of GHG emission reductions for the applicable crediting period.</p>

#### D.6. Contribution to SDGs

<b>Means of validation</b>	<p>PP has provided the assessment of project contributions to UN’s Sustainable Development Goals (SDGs) in the section B.6 of GS PDD.</p> <p>In PDD, PP claims the project contributes to the following sustainable development goals:</p> <ul style="list-style-type: none"> <li>• SDG 13: Climate Action</li> <li>• SDG 7: Affordable and clean Energy</li> <li>• SDG 8: Decent work and economic growth</li> </ul> <p>Validation team assessed the PPs claim on the contributions to the SDGs as below:</p> <table border="1"> <tr> <td>SDG 13- Climate action</td> <td> <p>The project avoids GHG emission from avoidance of grid electricity. Hence, the project reduces GHG emission compare to baseline condition. Hence validation team confirms the project’s contribution to SDG 13.</p> <p>The following parameters have been chosen as</p> </td> </tr> </table>	SDG 13- Climate action	<p>The project avoids GHG emission from avoidance of grid electricity. Hence, the project reduces GHG emission compare to baseline condition. Hence validation team confirms the project’s contribution to SDG 13.</p> <p>The following parameters have been chosen as</p>
SDG 13- Climate action	<p>The project avoids GHG emission from avoidance of grid electricity. Hence, the project reduces GHG emission compare to baseline condition. Hence validation team confirms the project’s contribution to SDG 13.</p> <p>The following parameters have been chosen as</p>		

		monitoring parameters for SDG13: <ul style="list-style-type: none"> <li>Amount of GHGs emissions avoided</li> </ul>
	SDG 7 – Affordable and clean energy	The project is implementation of wind power project that produce renewable electricity. Hence validation team confirms the project contribution to SDG The following parameters have been chosen as monitoring parameters for SDG7: <ul style="list-style-type: none"> <li>Total electricity produced: Renewable</li> </ul>
	SDG 8- Decent work and economic growth	The project generates new employment opportunities particularly for local people in operation of the project. Hence validation team confirms the project's contribution to SDG 8.  The following parameters have been chosen as monitoring parameters for SDG 8: <ul style="list-style-type: none"> <li>Total Number of Jobs</li> </ul>
<b>Findings</b>	No finding raised	
<b>Conclusion</b>	a) The validation team confirms the proposed project will results in contributions to the SDGs 13, 7 & 8 b) Since the project contributes to three SDGs the validation team is in the opinion that the project is eligible under Gold standard as per GS4GG c) All the parameters chosen to monitor the SDGs are found to be appropriate.	

#### D.7. Assessment of SDG outcomes

<b>Means of validation</b>	For SDG outcome, PP followed the following approach:		
	<b>SDG</b>	<b>Baseline Scenario</b>	<b>Project Scenario</b>
	SDG 13	GHG emission from equivalent electricity generated from grid	No emission
	SDG 7	No renewable electricity generated	Renewable electricity generated from the project
	SDG 8	No project related jobs created	Generation of jobs
		<b>Net Benefit</b>	Baseline value – Project value
			Project value- Baseline value
			Project value- Baseline value
	<p><b><u>SDG 13</u></b></p> <p>The validation team checked whether the equations and parameters used to calculate GHG emission reductions or net anthropogenic GHG removals for project activity are in accordance with applied methodology.</p> <p>Validation team checked section B.6.2 &amp; B.6.4 of the PDD to confirm whether all formulae to calculate baseline emissions, project emission and leakage have been applied in line with the underlying methodology.</p> <p>For the SDG 13, the emission reduction calculations were carried out as per the</p>		

applied CDM methodology ACM0002, v22.

**Baseline Emission**

The baseline emission is calculated in line with para 57 of ACM0002, Version 22.0, using equation below

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

Where,

$BE_y$  Baseline emissions in year y (t CO<sub>2</sub>/yr)

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

$EF_{grid,CM,y}$  Combined margin CO<sub>2</sub> emission factor for grid connected power generation in year y calculated using TOOL07 (t CO<sub>2</sub>/MWh)

As per para 59 of ACM0002, version 22.0, when the project activity is installation of Greenfield power plant, then:

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

Where,

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

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

Hence the baseline emission equation is as below:

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

**Project Emission:**

The project activity involves in harnessing wind power. As per the approved consolidated Methodology ACM0002 (Version 22.0) para 40:

*“For most renewable energy power generation project activities,  $PE_y = 0$ . However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:*

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

Where,

$PE_y$  Project emissions in year y (t CO<sub>2</sub>e/yr)

$PE_{FF,y}$  Project emissions from fossil fuel consumption in year y (t CO<sub>2</sub>/yr)

$PE_{GP,y}$  Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y (t CO<sub>2</sub>e/yr)

$PE_{HP,y}$  Project emissions from water reservoirs of hydro power plants in year y (t CO<sub>2</sub>e/yr)

$PE_{BESS,y}$  Project emissions from charging of a BESS using electricity from the grid or from fossil fuel electricity generators (t CO<sub>2</sub>e/yr)

$PE_{PSP,y}$  Project emissions from utilizing electricity from the grid for pumping operation of PSP in excess to the production of the renewable power plant operating in coordination with the PSP (t CO<sub>2</sub>e/yr)

As the project activity is the installation of a new grid-connected wind project and does not involve any project emissions from fossil fuel, operation of dry, flash steam or binary geothermal power plants, and from water reservoirs of hydro power plants. Therefore  $PE_{FF,y}$ ,  $PE_{GP,y}$ ,  $PE_{HP,y}$  are equal to zero and thus,  $PE_y =$

	<p>0. So the emissions from the project are zero.</p> <p><b>Leakage</b> As per the approved consolidated Methodology ACM0002 (Version 22.0) para 71, no leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport etc.) are neglected</p> <p><b>Emission Reduction (ER<sub>y</sub>):</b> The project activity mainly reduces carbon dioxide through substitution of grid electricity generation with fossil fuel fired power plant by renewable electricity. The emission reduction ER<sub>y</sub> by the project activity during a given year y is the difference between Baseline emission and Project emission &amp; Leakage emission. As per the applied methodology, leakage emissions are excluded for wind projects and hence the same is not used. The emission reduction is calculated in line with para 62 of ACM0002, Version 22, using equation below:</p> $ER_y = BE_y - PE_y$ <p>Where, ER<sub>y</sub> = Emission Reduction in tCO<sub>2</sub>/year BE<sub>y</sub> = Baseline emission in tCO<sub>2</sub>/year PE<sub>y</sub> = Project emissions in tCO<sub>2</sub>/year</p> <p><b>Ex-ante Calculation:</b></p> <p><b>Baseline Emission</b>  <math>BE_y = EG_{\text{facility}, y} * EF_{\text{grid}, CM, y}</math>  <math>= 232,500 \text{ MWh} \times 0.5692 \text{ tCO}_2/\text{MWh} = 132,339 \text{ tCO}_2</math></p> <p><b>Project Emission:</b> As explained above, the project emission is zero. PE<sub>y</sub> = 0 tCO<sub>2</sub></p> <p><b>Leakage:</b> As explained above, the no leakage emission is considered. LE<sub>y</sub> = 0 tCO<sub>2</sub></p> <p><b>Emission Reduction:</b> ER<sub>y</sub> = BE<sub>y</sub> - PE<sub>y</sub> = 132,339 – 0 = 132,339 tCO<sub>2</sub></p> <p>The estimated ex-ante value for the SDGs are given below</p> <table border="1"> <thead> <tr> <th>SDG</th> <th>Parameter</th> <th>Net Benefit</th> </tr> </thead> <tbody> <tr> <td>SDG 13</td> <td>Amount of GHGs emissions avoided</td> <td>132,339 tCO<sub>2</sub>/year</td> </tr> <tr> <td>SDG 7</td> <td>Total electricity produced: Renewable</td> <td>232,500 MWh</td> </tr> <tr> <td>SDG 8</td> <td>Total Number of Jobs</td> <td>40 Nos</td> </tr> </tbody> </table>	SDG	Parameter	Net Benefit	SDG 13	Amount of GHGs emissions avoided	132,339 tCO <sub>2</sub> /year	SDG 7	Total electricity produced: Renewable	232,500 MWh	SDG 8	Total Number of Jobs	40 Nos
SDG	Parameter	Net Benefit											
SDG 13	Amount of GHGs emissions avoided	132,339 tCO <sub>2</sub> /year											
SDG 7	Total electricity produced: Renewable	232,500 MWh											
SDG 8	Total Number of Jobs	40 Nos											
<b>Findings</b>	CAR-03 is raised and closed satisfactorily												
<b>Conclusion</b>	<p>The approach provided for estimation of SDG outcome provided in the PDD is verified and found to be appropriate for the project activity and selected indicator.</p> <p>For the estimation of SDG 13, validation team confirm that the algorithms and formulae proposed to calculate project emissions, baseline emissions, leakage and emission reductions in the PDD is in line with the requirements of the selected methodology ACM002, version 22.</p> <p>For ex-ante calculation, the assessment team confirms that</p> <ul style="list-style-type: none"> <li>• All assumptions and data used by the project participants are listed in the PDD, including their references and sources;</li> <li>• All documentation used by project participants as the basis for assumptions</li> </ul>												

	<p>and source of data is correctly quoted and interpreted in the PDD;</p> <ul style="list-style-type: none"> <li>• All values used in the PDD are considered reasonable in the context of the project.</li> <li>• The applied formula and methods for calculating ER are in accordance with the applied methodology and</li> <li>• All calculations are complete and without any omissions.</li> </ul> <p>As per the GS4GG requirements, the emission reduction estimated in the PDD is in line the applied methodological requirement.</p>
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### D.8. Validity of monitoring plan

<b>Means of validation</b>	<p>The sustainability monitoring plan in the revised GS PDD is compared with the GS4GG transition document and found that there is no change in the sustainability plan of the PDD and hence, the monitoring plan already followed by PP is still valid. As per the revised PDD the following parameters are to be monitored:</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 15%;">SDG/</th> <th style="width: 40%;">Monitoring Parameter</th> <th style="width: 45%;">Assessment of monitoring plan</th> </tr> </thead> <tbody> <tr> <td>SDG 13</td> <td>Emission Reduction- GHG Emission reduction during the year y</td> <td>The emission reduction will be calculated using as per the applied CDM methodology ACM0002, v22. The monitoring plan is found to be appropriate for the selected parameter</td> </tr> <tr> <td>SDG 7</td> <td>EGy - Net quantity of electricity exported to the grid by the project activity during the year y</td> <td> <p>The export will be monitored continuously through energy meter of accuracy clause 0.2s. Export reading will be recorded monthly in the Joint meter readings statement by EGAT</p> <p>The export will be monitored continuously through separate energy meter of accuracy clause 0.5s. Export reading will be recorded monthly in the PEA bill</p> <p>The difference between export &amp; import is considered as net export.</p> <p>The monitoring plan is found to be appropriate for the selected parameter and SDG.</p> </td> </tr> <tr> <td>SDG 8</td> <td>Total Number of Jobs</td> <td>This will be monitored annually and reported in the employment records. The monitoring plan is found to be appropriate for the selected parameter and SDG.</td> </tr> </tbody> </table> <p><b>SDG 13 Monitoring plan:</b> Validation team checked whether existing monitoring plan followed during the 1<sup>st</sup> crediting period monitoring the plan is still valid for the 2<sup>nd</sup> crediting period or not. Validation team checked the monitoring plan provided in the revised PDD and compared with the monitoring plan provided in the PDD of 1<sup>st</sup> crediting period.</p> <p>Validation team also checked whether the monitoring plan provided in the revised PDD is in consistent with requirements of the applied methodology.</p> <p>The information provided in the PDD has been found in compliance with the information evaluated during the site visit, while interviewing with the concerned people and the same was re-affirmed through the documentary evidence.</p> <p>The monitoring plan described in the PDD is in compliance with the applied methodology. The assessment team has reviewed all the parameters in the monitoring plan against the requirements of the applied methodology and confirmed that monitoring parameters are applied in line with the requirement of the methodology and relevant in the context of the project. The procedures have been</p>	SDG/	Monitoring Parameter	Assessment of monitoring plan	SDG 13	Emission Reduction- GHG Emission reduction during the year y	The emission reduction will be calculated using as per the applied CDM methodology ACM0002, v22. The monitoring plan is found to be appropriate for the selected parameter	SDG 7	EGy - Net quantity of electricity exported to the grid by the project activity during the year y	<p>The export will be monitored continuously through energy meter of accuracy clause 0.2s. Export reading will be recorded monthly in the Joint meter readings statement by EGAT</p> <p>The export will be monitored continuously through separate energy meter of accuracy clause 0.5s. Export reading will be recorded monthly in the PEA bill</p> <p>The difference between export &amp; import is considered as net export.</p> <p>The monitoring plan is found to be appropriate for the selected parameter and SDG.</p>	SDG 8	Total Number of Jobs	This will be monitored annually and reported in the employment records. The monitoring plan is found to be appropriate for the selected parameter and SDG.
SDG/	Monitoring Parameter	Assessment of monitoring plan											
SDG 13	Emission Reduction- GHG Emission reduction during the year y	The emission reduction will be calculated using as per the applied CDM methodology ACM0002, v22. The monitoring plan is found to be appropriate for the selected parameter											
SDG 7	EGy - Net quantity of electricity exported to the grid by the project activity during the year y	<p>The export will be monitored continuously through energy meter of accuracy clause 0.2s. Export reading will be recorded monthly in the Joint meter readings statement by EGAT</p> <p>The export will be monitored continuously through separate energy meter of accuracy clause 0.5s. Export reading will be recorded monthly in the PEA bill</p> <p>The difference between export &amp; import is considered as net export.</p> <p>The monitoring plan is found to be appropriate for the selected parameter and SDG.</p>											
SDG 8	Total Number of Jobs	This will be monitored annually and reported in the employment records. The monitoring plan is found to be appropriate for the selected parameter and SDG.											

reviewed by the assessment team through document review and interviews with the respective department's personnel. The information provided has allowed the assessment team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the PP. Specifically, these points include the monitoring methodology, data management, and the quality assurance and quality control procedures to be implemented in the context of the project. Therefore, the PP will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

The parameters that are fixed ex-ante are:

Parameter	Value	Source & Assessment
EF <sub>grid,CM,y</sub>	0.5692 tCO <sub>2</sub> eq/MWh	This has been calculated based on the Report 'Thailand Grid Emission Factor for GHG Reduction Project/Activity' dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public Organisation) in line with "Tool to calculate the emission factor for an electricity system".
EF <sub>grid,BM,y</sub>	0.5609 tCO <sub>2</sub> eq/MWh	This has been calculated based on the Report 'Thailand Grid Emission Factor for GHG Reduction Project/Activity' dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public Organisation) in line with "Tool to calculate the emission factor for an electricity system".
EF <sub>grid,OM,y</sub>	0.5719 tCO <sub>2</sub> eq/MWh	This has been calculated based on the Report 'Thailand Grid Emission Factor for GHG Reduction Project/Activity' dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public Organisation) in line with "Tool to calculate the emission factor for an electricity system".  The value used is calculated ex-ante as generation based weighted average of last three years of the operating margin provided in the Thailand Grid Emission Factor for GHG Reduction Project/Activity' Weighted average = $\frac{\sum_{i=1 \text{ to } n} (\text{Net generation in operating margin in year } i) * \text{Simple operating margin in year } i)}{\sum_{i=1 \text{ to } n} (\text{Net generation in operating margin of year } i)}$

The parameters that are to be monitored ex-post are:

Parameter	Monitoring Details
EG <sub>y</sub> - Net quantity of electricity exported to the grid by the project activity during the year y	The export will be monitored continuously through energy meter of accuracy class 0.2s. Export reading will be recorded monthly in the Joint meter readings statement by EGAT

	<p>The export will be monitored continuously through separate energy meter of accuracy clause 0.5s. Export reading will be recorded monthly in the PEA bill</p> <p>The difference between export &amp; import is considered as net export.</p> <p>The monitoring plan is found to be appropriate for the selected parameter and SDG.</p>						
	<p><b>Safeguarding principal monitoring plan:</b> The following safeguarding parameters are monitored.</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Monitoring Details</th> </tr> </thead> <tbody> <tr> <td>Soil Erosion mitigation measures (Safeguarding principle 8.2)</td> <td>The following mitigation measures shall be followed during the operational phase of the project: Fast-growing and earth-bounding plants should be planted in the area of the project's road in order to prevent the collapse of soil layers. This shall be monitored yearly once through Interview with maintenance staff.</td> </tr> <tr> <td>Hazardous waste management (Safeguarding principle 9.5)</td> <td>The following management measures shall be followed: <ul style="list-style-type: none"> <li>• Provision of proper temporary storage for hazardous waste</li> <li>• Waste segregation</li> <li>• Waste disposal by an appointed/accredited waste disposer company</li> </ul> <p>This shall be confirmed once year through Project O&amp;M HSE logbook, or interview with maintenance staff.</p> </td> </tr> </tbody> </table> <p>The monitoring plan content has been checked in the PDD and compared against the requirements of the monitoring methodology</p> <p>All means of implementing the monitoring plan are in line with the applied and monitoring methodology. The validation team has no doubts that the monitoring arrangements as it is already implemented during the first crediting period itself as described in the PDD.</p> <p><b>Sampling plan:</b> No sampling plan involved in this project.</p>	Parameter	Monitoring Details	Soil Erosion mitigation measures (Safeguarding principle 8.2)	The following mitigation measures shall be followed during the operational phase of the project: Fast-growing and earth-bounding plants should be planted in the area of the project's road in order to prevent the collapse of soil layers. This shall be monitored yearly once through Interview with maintenance staff.	Hazardous waste management (Safeguarding principle 9.5)	The following management measures shall be followed: <ul style="list-style-type: none"> <li>• Provision of proper temporary storage for hazardous waste</li> <li>• Waste segregation</li> <li>• Waste disposal by an appointed/accredited waste disposer company</li> </ul> <p>This shall be confirmed once year through Project O&amp;M HSE logbook, or interview with maintenance staff.</p>
Parameter	Monitoring Details						
Soil Erosion mitigation measures (Safeguarding principle 8.2)	The following mitigation measures shall be followed during the operational phase of the project: Fast-growing and earth-bounding plants should be planted in the area of the project's road in order to prevent the collapse of soil layers. This shall be monitored yearly once through Interview with maintenance staff.						
Hazardous waste management (Safeguarding principle 9.5)	The following management measures shall be followed: <ul style="list-style-type: none"> <li>• Provision of proper temporary storage for hazardous waste</li> <li>• Waste segregation</li> <li>• Waste disposal by an appointed/accredited waste disposer company</li> </ul> <p>This shall be confirmed once year through Project O&amp;M HSE logbook, or interview with maintenance staff.</p>						
<b>Findings</b>	No finding raised						
<b>Conclusion</b>	<p>The sustainability monitoring plan is unambiguous &amp; has clearly stated who will monitor each of the parameter &amp; the monitoring frequency requirements. Validation team checked monitoring procedure given for each parameter and found that the monitoring plan is feasible during the crediting period</p> <p>For SDG13, the validation team confirms that the monitoring plan based on the approved monitoring methodology is included in the PDD and is correctly applied to the project. The monitoring plan has been found to be in compliance with the requirements of the applied methodology. The monitoring plan will give opportunity for real measurements of achieved emission reductions. The validation team considers that monitoring arrangements described in the monitoring plan in line with the existing monitoring plan already implemented in the site.</p>						

	As per the GS4GG requirements, the monitoring requirements provided in the PDD is in line the applied methodological requirement
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### D.9. Crediting period

<b>Means of validation</b>	<p>The validation team checked whether the PP specified the Start date &amp; duration of the 2<sup>nd</sup> crediting period which is in accordance with the applicable requirements in the GS requirements.</p> <p>The details provided in the PDD are:</p> <ul style="list-style-type: none"> <li>• Start date of crediting period: 01/12/2024</li> <li>• Length of crediting period: 3 years (considering the total crediting period of CDM &amp; GS shall not exceed 15 years)</li> </ul> <p>The end date of the 1<sup>st</sup> crediting period is 30/11/2024. Hence start date considered for 2<sup>nd</sup> crediting period for the project is appropriate.</p> <p>As per the GS4GG requirements, the request for renewal will be submitted to Gold Standard before the end of 1<sup>st</sup> crediting period. However, this project is submitted after the end of 1<sup>st</sup> crediting period. Hence FAR-01 is raised.</p>
<b>Findings</b>	CL-01 is raised and closed. FAR-01 is raised for 1 <sup>st</sup> verification.
<b>Conclusion</b>	The start date and the crediting period type & length have been validated and found to be in accordance with GS4GG Principles and Requirements, version 2.1. FAR-01 shall be addressed during the 1 <sup>st</sup> verification.

### D.10. Gold Standard Requirement on Design Certification Renewal

<b>Means of validation</b>	<p><u>(a) Changes in the Project as related to the General Eligibility Criteria:</u> The Project is already transitioned to the GS4GG standard. No specific changes in the project related to general eligibility criteria is observed. The assessment of general eligibility criteria is provided in section D.2 above.</p> <p><u>(b) Incorporation of any relevant updates to the Gold Standard Requirements</u> The project is already registered under the GS4GG standard. There are no any relevant updates to the Gold Standard Requirements has been included in the PDD.</p> <p><u>(c) Re-definition of Baseline Scenario and any impact of change on the Eligibility Principles, Criteria and Requirements</u> The assessment of re-definition of Baseline scenario as per the UNFCCC requirement has been provided in the section D.5 above. Validation team checked the revised baseline and found that the revised baseline does not have impact on change on the Eligibility Principles, Criteria and Requirements.</p> <p><u>(d) Any Gold Standard activity, product and methodology-specific Requirements</u> The project is already transitioned to the GS4GG standard. There is no change in Gold Standard activity or product requirement after the transition.</p> <p><u>(e) Demonstration of Ongoing Financial Need</u> The ongoing financial Need is demonstrated in section B.5.2 of the GS PDD. The Ongoing Financial Need (OFN) sheet is submitted by PD. This includes Information on the key categories and amounts or relative proportions (%) of project income and outgoings, including the relative proportion of certification related cost and revenue from the COD to year 2023 (till when the audited financials were available). The data provided is cross checked with audited financials and it is found to be correct. Hence the OFN is demonstrated against the in line with requirement of section 4.1.52 of Principles &amp; Requirements version 2.1.</p>
<b>Findings</b>	CAR-04 is raised and closed satisfactorily
<b>Conclusion</b>	The revised GS PDD is in compliance with Gold Standard Design Certification Renewal requirements specified in section 5.1.47 of GS4GG Principles Requirements v2.1.

### D.11. Assessment of safeguarding principles

<b>Means of validation</b>	<p>PP has provided the assessment of safeguarding principles in the Appendix 1 of GS PDD. As the safeguarding principles are assessed during validation, the same is not reassessed.</p> <p>The validation approach didn't reveal any situation that could lead to the violation of safeguarding principles and VVB has confirmed that the project activity fulfil GS Safeguarding Principles Requirements, version 2.1</p>
<b>Findings</b>	No finding raised
<b>Conclusion</b>	All supporting information & reference sources stated in the GS4GG PDD in order to support the assessment have been verified by the validation team & confirmed the assessment has been carried out based on accurate information. All of the Safeguarding Principles were evaluated and assessed as no risk. Hence no mitigation measure is proposed.

### D.12. Stakeholder consultation

<b>Means of validation</b>	<p>This is the renewal of crediting period. Hence, the stakeholder consultation is not applicable.</p> <p>Stakeholder consultation was conducted during the registration of the project activity. The same has been validated during the registration of the project activity.</p> <p>As per the GS requirements, a continuous input and grievance mechanism is in place for the PDD. Validation team checked the grievance registers and discussed with the PP regarding the grievance reporting mechanisms. Validation team also interviewed the end users during the site visit and confirmed the end users are aware of the grievance mechanism in place. Validation team finds that the grievance mechanisms in place are adequate and the stakeholders are aware of the grievance mechanisms.</p>
<b>Findings</b>	No finding raised
<b>Conclusion</b>	The stakeholder requirements are validated during the registration of project activity. The Continuous input and grievance mechanism in place is found be adequate and in line with the GS requirements.

### D.13. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents <sup>1</sup>	N	NA	NA
Corrections	N	NA	NA
Change to the start date of the crediting period	N	NA	NA
Inclusion of a monitoring plan	N	NA	NA
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	N	NA	NA
Changes to the project design	N	NA	NA
Changes specific to afforestation and reforestation project activities	NA	NA	NA

<sup>1</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).



## **SECTION E. Internal quality control**

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The validation report prepared by team leader is reviewed by an independent technical reviewer (having competence of relevant technical area himself/herself or through an independent technical area expert) to confirm the internal procedures established by 4KES are duly followed and the validation report/opinion is reached in an objective manner and complies with the applicable CDM and Gold Standard requirements.

The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the validation team. The independent technical reviewer(s) may approve or reject the draft validation report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before submit final report to UNFCCC. The final approval decision is taken by the Head of the VVB/Director.

The final decision is authorized by the Managing Director, 4KES, once the report is finalized by the Head of DOE/DOE Manager.

## **SECTION F. Validation opinion**

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4K Earth Science Private Limited has been contracted by “Kosher Climate India Pvt. Ltd” to undertake validation of renewal of crediting period of the Gold Standard CDM registered project ‘West Huaybong 3 wind farm project’ (GS Ref# GS7746) in Thailand for renewal of project activities period.

The validation was performed in accordance with the latest version of GS4GG Principles & Requirements, and related Standards/Guidance and host country criteria, UNFCCC criteria for the Clean Development Mechanism, latest version of Validation and Verification Standard, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The assessment included:

- Any impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant guidance from the Board with regard to renewal of the crediting period at the time of requesting renewal of crediting period;
- The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.
- Sustainability assessment as per GS4GG guidelines including stakeholder consultation, the Safeguard Assessment and SDG outcome assessment

In our opinion, the project meets all relevant GS4GG criteria, and all relevant host country criteria.

The review of the final PDD and the subsequently performed follow-up interviews with representatives of the project participant has provided the validation team with sufficient evidence to determine the validity of the original baseline and/or its update of the project. The PDD correctly applies the methodology ACM0002 “Grid-connected electricity generation from renewable sources” (Version 22). It is demonstrated that the project baseline scenario is not changed and also all necessary parameters are updated correctly for the 2<sup>nd</sup> crediting period.

The monitoring plan provides for the monitoring of the SDG outcomes including project emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design, and it is the validation team’s opinion that the project participates are able to implement the monitoring plan.

The ex-ante estimated SDG outcomes for the 2<sup>nd</sup> Crediting period are as below:

<b>SDGs</b>	<b>Estimated SDG Impact</b>
SDG 13	132,339 tCO <sub>2</sub> /annum emission reduction
SDG 7	232,500 MWh renewable electricity generation
SDG 8	40 no of jobs generation



In summary, it is validation team's opinion that the GS VER project 'West Huaybong 3 wind farm project' (GS Ref# GS7746) in Thailand meets all relevant GS requirements for the renewal of crediting period. Hence 4KES requests the renewal of the crediting period of the project.

## Appendix 1. Abbreviations

Abbreviations	Full texts
4KES	4K Earth Science Private Limited
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification request
COP	Conference of Parties
DNA	Designated National Authority
DR	Document Review
EB	Executive Board
EF	Emission Factor
ERs	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GS	Gold Standard
HCA	Host Country Approval

IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
KP	Kyoto Protocol
LSC	Local Stakeholder Consultation
LE	Leakage Emissions
LoA	Letter of Approval/Authorization
MNRE	Ministry of New & Renewable Energy
MOP	Meeting of Parties
MoC	Modalities of Communication
MoV	Means of Verification
MP	Monitoring Plan
NCV	Net Calorific Value
NRB	Non-Renewable Biomass
ODA	Official Development Assistance
PA	Project Activity
PDD	Project Design Document
PE	Project Emissions
PP	Project Participant
PS	Project Standard
PCP	Project Cycle Procedure
QA/QC	Quality Assurance/Quality Control
RCP	Renewal of Crediting period
SDG	Sustainable Development Goal
SSC	Small Scale
T&C	Technical & Certification
UNFCCC	United Nations Framework Convention on Climate Change
VVB	Validation and verification body
VVS	Validation & Verification Standard

## Appendix 2. Competence of team members and technical reviewers

<b><u>Certificate of Competence</u></b>							
<b>Name</b>	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Swati S Acharya					
<b>Qualification Procedure</b>	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GCC/GHG Projects.						
<b>Appointed to work as:</b>							
	<b>Validator/ Verifier</b>	<b>Team Leader</b>	<b>Trainee</b>	<b>Technical Expert</b>	<b>Technical Reviewer</b>	<b>Financial Expert</b>	<b>Approver</b>
<i>Appointed</i>	Yes	Yes	No	Yes	No	No	No
<i>Appointed Date</i>	05-12-2023						
<b>Authorized to work as Technical Expert for:</b>							
<i>Authorized Technical Area</i>	<b>Sectoral Scope</b>		<b>TA Code</b>		<b>Technical Area within the scope</b>		
	Energy industries (renewable - / non-renewable sources)		1.2		Renewables		
	Transportation		7.1		Transport		



<b>Authorized to work as Local Expert for:</b>	
Country/Countries	India
<b>Compliance check by:</b>	
Anand S R	

<b><u>Certificate of Competence</u></b>							
<b>Name</b>	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Sriram S					
<b>Qualification Procedure</b>	Fulfils the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GCC/GHG Projects.						
<b>Appointed to work as:</b>							
	<b>Validator/ Verifier</b>	<b>Team Leader</b>	<b>Trainee</b>	<b>Technical Expert</b>	<b>Technical Reviewer</b>	<b>Financial Expert</b>	<b>Approver</b>
Appointed	Yes	No	No	No	No	No	No
Appointed Date	25-07-2024						
<b>Authorized to work as Technical Expert for:</b>							
Authorized Technical Area	<b>Sectoral Scope</b>		<b>TA Code</b>		<b>Technical Area within the scope</b>		
	-		-		-		
<b>Authorized to work as Local Expert for:</b>							
Country/Countries	-						
<b>Compliance check by:</b>							
Anand S R							

<b><u>Certificate of Competence</u></b>							
<b>Name</b>	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Rakshita S Shetty					
<b>Qualification Procedure</b>	Fulfils the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GCC/GHG Projects.						
<b>Appointed to work as:</b>							
	<b>Validator/ Verifier</b>	<b>Team Leader</b>	<b>Trainee</b>	<b>Technical Expert</b>	<b>Technical Reviewer</b>	<b>Financial Expert</b>	<b>Approver</b>
Appointed	No	No	Yes	No	No	No	No
Appointed Date	15-07-2023						
<b>Authorized to work as Technical Expert for:</b>							
Authorized Technical Area	<b>Sectoral Scope</b>		<b>TA Code</b>		<b>Technical Area within the scope</b>		
	-		-		-		
<b>Authorized to work as Local Expert for:</b>							
Country/Countries	-						
<b>Compliance check by:</b>							
Anand S R							

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<b><u>Certificate of Competence</u></b>							
<b>Name</b>	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	<b>Chetan Swaroop Sharma</b>					
<b>Qualification Procedure</b>	<i>Fulfils the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GCC/GHG Projects.</i>						
<b>Appointed to work as:</b>							
	<b>Validator/ Verifier</b>	<b>Team Leader</b>	<b>Trainee</b>	<b>Technical Expert</b>	<b>Technical Reviewer</b>	<b>Financial Expert</b>	<b>Approver</b>
<i>Appointed</i>	Yes	Yes	No	Yes	Yes	Yes	Yes
<i>Appointed Date</i>	15-07-2023						
<b>Authorized to work as Technical Expert for:</b>							
<i>Authorized Technical Area</i>	<b>Sectoral Scope</b>		<b>TA Code</b>		<b>Technical Area within the scope</b>		
	Energy industries (renewable - / non-renewable sources)		1.1		Thermal energy generation		
	Energy industries (renewable - / non-renewable sources)		1.2		Renewables		
	Energy distribution		2.1		Energy distribution		
	Energy demand		3.1		Energy demand		
	Waste handling and disposal		13.1		Solid waste and wastewater		
	Waste handling and disposal		13.2		Manure		
<b>Authorized to work as Local Expert for:</b>							
<i>Country/Countries</i>	India, Mauritius, Vietnam, Senegal and Thailand						
<b><u>Compliance check by:</u></b>				Anand S. R.			

<b><u>Certificate of Competence</u></b>							
<b>Name</b>	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	<b>Siam Phoolcharoen</b>					
<b>Qualification Procedure</b>	<i>Fulfils the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GCC/GHG Projects.</i>						
<b>Appointed to work as:</b>							
	<b>Validator/ Verifier</b>	<b>Team Leader</b>	<b>Trainee</b>	<b>Technical Expert</b>	<b>Technical Reviewer</b>	<b>Financial Expert</b>	<b>Approver</b>
<i>Appointed</i>	No	No	No	No	No	No	No
<i>Appointed Date</i>	15-07-2024						
<b>Authorized to work as Technical Expert for:</b>							
<i>Authorized Technical Area</i>	<b>Sectoral Scope</b>		<b>TA Code</b>		<b>Technical Area within the scope</b>		
	-		-		-		
<b>Authorized to work as Local Expert for:</b>							
<i>Country/Countries</i>	Thailand						
<b><u>Compliance check by:</u></b>				Anand S. R.			

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	Kosher	GS Project Design Document	Version 07, dated 01/12/2024	Kosher
	Kosher	Revised GS Project Design Document	Version 8, dated 17/03/2025	Kosher
	Kosher	Revised GS Project Design Document	Version 9, dated 04/08/2025	Kosher
2	Kosher	ER Estimation sheet	Version 07	Kosher
	Kosher	Revised ER Estimation Sheet	Version 08	Kosher
	Kosher	Revised ER Estimation Sheet	Version 09	Kosher
3	UNFCCC	ACM0002: Grid-connected electricity generation from renewable sources	Version 22	Publicly available
4	Gold Standard	GS4GG Principles and Requirement	Version 2.1	Publicly available
5	Gold Standard	GS4GG Renewable Energy Activity Requirement	Version 1.4	Publicly available

6	IPCC	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	<a href="#">Web Link</a>	Publicly available
7	UNFCCC	Kyoto Protocol (1997)	<a href="#">Web Link</a>	Publicly available
8	UNFCCC	GS Project design document form	Version 1.5	Publicly available
9	Kosher	ODA declaration	-	Kosher
10	UNFCCC	Tool 11: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period	Version 3.0.1	Publicly available
11	UNFCCC	Tool 07: Tool to Calculate the Emission Factor for an Electricity System	Version 07	Publicly available
12	UNFCCC	Tool 3 Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion	Version 3.0	Publicly available
13	FKW	Power Purchase agreement between PP & EGAT	-	FKW
14	FKW	Commissioning Certificate	-	FKW
15	Thailand Greenhouse Gas Management Organisation (Public Organisation)	Report 'Thailand Grid Emission Factor for GHG Reduction Project/Activity' dated 28/09/2017	Year 2017	Publicly available
16	FKW	Technical specification of the WTG	-	FKW
17	Govt. of Thailand	Power Development Plan (PDP 2018–2037)	-	Publicly available
18	Govt. of Thailand	Alternative Energy Development Plan (AEDP 2018–2037)	-	Publicly available
19	Govt. of Thailand	National Energy Plan and Thailand's Long-Term Low Greenhouse Gas Emission Development Strategy (LTS)	-	Publicly available
29	EGAT	Monthly Energy meter reading statement	-	FKW
30	PEA	Monthly Import Electricity bill		
31	GS	GS4GG Validation and Verification Standard	Version 2.0	Publicly available

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

Table 1. CL from this Validation

<b>CL ID</b>	01	<b>Section no.</b>		<b>Date:</b> 15/03/2025
<b>Description of CL</b>				
In section C.2, PD mentioned the start date of the crediting period 01/12/2024 which is already over. Hence, this is no incompliance with the para 5.1.45 of GS Principles & requirements. Clarification is requested.				
<b>Project participant response</b>				<b>Date:</b> 17/03/2025
<i>We missed to start the renewal process before the end date of 1<sup>st</sup> crediting period as there was no reminder mechanism available..</i>				
<b>Documentation provided by project participant</b>				
-				



<b>VVB assessment</b>	<b>Date:</b> 30/03/2025
This is not compliance with para 5.1.45 of GS Principles & requirements and hence FAR-01 is raised. CL is closed as FAR-01 is raised.	

<b>CL ID</b>	02	<b>Section no.</b>		<b>Date:</b> 15/03/2025
<b>Description of CL</b>				
PD calculated grid emission factor based on the data pertaining to year 2014, 2015 & 2016 which was published on 28 <sup>th</sup> September 2017. PD shall clarify how this is appropriate for the current renewal.				
<b>Project participant response</b>				<b>Date:</b> 17/03/2025
<i>The emission factor was published by Greenhouse Gas Management Organisation (Government Organisation). The data published on 28<sup>th</sup> September 2017 is the latest data published by the organisation. No other data published post to this date. Hence, the same data is used in PDD for calculation of emission factor.</i>				
<b>Documentation provided by project participant</b>				
-				
<b>VVB assessment</b>				<b>Date:</b> 30/03/2025
As verified from TGO website, no latest emission factor is published that was calculated as per CDM tool 07. Hence it is acceptable. CL is closed.				

<b>CL ID</b>	03	<b>Section no.</b>		<b>Date:</b> 15/03/2025
<b>Description of CL</b>				
In Table 1 of PDD, PD shall mention the product (ie, VER) for SDG13 instead of unit				
<b>Project participant response</b>				<b>Date:</b> 17/03/2025
<i>The unit has been corrected to VER.</i>				
<b>Documentation provided by project participant</b>				
<i>Revised PDD</i>				
<b>VVB assessment</b>				<b>Date:</b> 30/03/2025
PD made necessary correction. CL is closed				

**Table 2. CAR from this validation**

<b>CAR ID</b>	01	<b>Section no.</b>		<b>Date:</b> 15/03/2025
<b>Description of CAR</b>				
In Section A.1 of the PDD, the Project Developer shall include details of the second crediting period under CDM, as it has already been renewed. Additionally, the sentence "Now PP is applying same for Gold Standard registration" should be corrected, as the project is already registered under the Gold Standard.				
<b>Project participant response</b>				<b>Date:</b> 17/03/2025
Section A.1 has been updated to include the details of the second crediting period under CDM. The sentence regarding Gold Standard registration has also been revised.				
<b>Documentation provided by project participant</b>				
<i>Revised PDD</i>				
<b>VVB assessment</b>				<b>Date:</b> 30/03/2025
PD made necessary correction. CAR is closed.				

<b>CAR ID</b>	02	<b>Section no.</b>		<b>Date:</b> 15/03/2025
<b>Description of CAR</b>				
In section B.4 of PDD, under Step 1.1, PD shall provide the list of relevant mandatory national and/or sectoral policies and assess the implication of the same in the baseline scenario of the project.				
<b>Project participant response</b>				<b>Date:</b> 17/03/2025
The details are included in section 1.1				
<b>Documentation provided by project participant</b>				
<i>Revised PDD.</i>				
<b>VVB assessment</b>				<b>Date:</b> 30/03/2025
Validation team checked the revisions and found satisfactory and hence CAR is closed.				

<b>CAR ID</b>	03	<b>Section no.</b>		<b>Date:</b> 15/03/2025
<b>Description of CAR</b>				
PD shall provide completed SDG tool for this project				



<b>Project participant response</b>	<b>Date:</b> 17/03/2025
<i>The SDG tool is submitted now.</i>	
<b>Documentation provided by project participant</b>	
<i>SDG Tool.</i>	
<b>VVB assessment</b>	<b>Date:</b> 30/03/2025
PD provided the SDG tool. CAR is closed.	

<b>CAR ID</b>	04	<b>Section no.</b>		<b>Date:</b> 15/03/2025
<b>Description of CAR</b>				
PD shall provide the OFN sheet with Information highlighting the key categories and amounts or relative proportions (%) of project income and outgoings, including the relative proportion of certification related cost and revenue.				
<b>Project participant response</b>				<b>Date:</b> 17/03/2025
<i>OFN sheet is submitted now</i>				
<b>Documentation provided by project participant</b>				
<i>OFN sheet</i>				
<b>VVB assessment</b>				<b>Date:</b> 30/03/2025
PD submitted OFN sheet now. CAR is closed.				

**Table 3. FAR from this validation**

<b>FAR ID</b>	01	<b>Section no.</b>		<b>Date:</b> 30/03/2025
<b>Description of FAR</b>				
As PD has not submitted the design review renewal request before the end date of 1 <sup>st</sup> crediting period, PD shall not claim VERs for the period from 01/12/2024 till the date of submission of design certification renewal.				
Verifying VVB shall check the same during the 1 <sup>st</sup> verification of 2 <sup>nd</sup> crediting period.				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
-				
<b>Documentation provided by project participant</b>				
-				
<b>VVB assessment</b>				<b>Date:</b> DD/MM/YYYY
-				

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