

TEMPLATE

VALIDATION REPORT FOR PROJECT ACTIVITIES (DESIGN CHANGE)

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Version **1.0**

Contact Details

The Gold Standard Foundation
International Environment House 2
Chemin de Balexert 7-9
1219 Châtelaine
Geneva, Switzerland
Tel: +41 22 788 70 80
Email: standards@goldstandard.org

SUMMARY

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KEY PROJECT INFORMATION

GS ID	GS1178
Title of Project	Gunaydin Hybrid Wind and Solar Power Plant
Version number of the Validation Report	1.3
Completion Date of Validation Report	21/02/2025
Version number and completion date of the PDD to which this report applies	Version 23, 23/01/2025
Date of listing	31/08/2012
Project Developer	Kavram Enerji Yatırım Üretim ve Ticaret A.Ş.
Project Representative	Net Zero Danışmanlık A.Ş.
Project Participants and any communities involved	Kavram Enerji Yatırım Üretim ve Ticaret A.Ş.
Host Country (ies)	Türkiye
Activity Requirements applied	☒ Renewable Energy Activity Requirements ☐ Community Services Activity Requirements ☐ Land-Use & Forests Activity Requirements ☐ New project types ☐ Others (<i>rules and requirements available in Principles and Requirements apply</i>)
Scale of the project activity	☐ Microscale ☐ Small scale ☒ Large scale ☐ Others
Methodology (ies) applied and version number	☒ Gold Standard approved methodology, including any specific Gold Standard applicability criteria. ☐ A project-specific methodology (Applicable to Microscale Project only)

	Title(s) of methodology (ies)	ACM0002
	The version number of the methodology (ies)	Version 20.0
Product Requirements applied	☒ GHG Emissions Reductions & Sequestration ☐ Renewable Energy Label ☐ Others <i>For all other Certification Statements, Certified SDG Impact Statements or Products.</i> Please specify: ☐ N/A	
Deviation applicable to the project (accepted and rejected both)	Deviation ID	NA
	Applicable section of validation report	NA
Project cycle	☒ Regular ☐ Retroactive	

VVB information

Name of the VVB	KBS Certification Services Ltd.
GS accreditation expiry date	19/03/2027
Is the VVB accredited for the applicable sectoral scope?	Yes
Name, position of the approver of the validation report	Mr. Praveen N Urs Director of Climate Change & Sustainability
Signature (Final version only)	

Table 1 – Validated Sustainable Development Contributions

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
13 Climate Action	Emission reductions	36,262	tCO2e GS VERs
7 Affordable and Clean Energy	MWh of renewable energy generated	65,700	MWh
8 Decent Work and Economic Growth	Number of employment generation	9	Number

8 Decent Work and
Economic Growth

Health and Safety
Training Records

Trainings will
be given to
the
employees

-

PART I – EXECUTIVE SUMMARY

Kavram Enerji Yatırım Üretim ve Ticaret A.Ş. has contracted KBS Certification Services Ltd. to perform the design change of the project activity “Gunaydin Hybrid Wind and Solar Power Plant” having GS4GG Ref no. 1178.

The project initially started as a wind energy project on 01/12/2012. A subsequent modification involved the addition of solar panels to complement the wind turbines. Kavram Enerji Yatırım Üretim ve Ticaret A.Ş. is expanding by investing in a solar power system that will be integrated with the existing wind project, creating a hybrid energy setup. In this system, wind energy will remain the primary power source, with solar energy providing additional support. This solar contribution ensures a steady flow of electricity to the grid without altering the plant's total installed capacity, as stated in the Production License. The electricity output following the integration of solar power is expected to reach 65.7 GWh (65,700,000 kWh) annually.

The scope of the design change is defined as an independent and objective review of the GS PDD, the project’s revisions, and other relevant documents. The information in these documents is reviewed against the following documents:

- GS4GG Principles & Requirements (version 1.2) /1/
- GS4GG Design Change Requirements (version 1.1) /4/
- GS4GG Renewable Energy Activity Requirements version 1.4 /8/
- GS4GG Validation and verification standard version 1.0 /5/

The design change report is based on an assessment of the proposed GS PDD executed through stakeholder consultations, the implementation of standard auditing techniques such as desk review, follow-up actions (e.g., remote audit), and an assessment of the applicable approved methodology ACM0002”, “Grid-connected electricity generation from renewable sources”, version 20.0 /9/ and relevant tools, guidance, and GS decisions.

The design change process was conducted using KBS's internal procedures. The design change consisted of the following three phases:

- i) A desk review of the project design, baseline, and monitoring plan.
- ii) Follow-up interviews with project implementers.
- iii) The resolution of outstanding issues and the issuance of the final validation report and opinion.

In summary, it is KBS’s opinion that the project activity “Gunaydin Hybrid Wind and Solar Power Plant”, as described in the proposed PDD version 23 meets the relevant GS4GG requirements for the design change of project activity and applied methodology, “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 20.0 /9/. Thus, KBS recommends GS4GG for design change of the proposed project activity “Gunaydin Hybrid Wind and Solar Power Plant” GS 1178.

PART II – VALIDATION TEAM, TECHNICAL REVIEW TEAM AND APPROVER

2.1 | Validation team member(s)

S.NO.	FULL NAME	ROLE(S)	TYPE OF RESOURCE	TYPE OF ACTIVITY(IES) CARRIED OUT
1	Tuğçe Kıratlı	Team Leader, Validator, Technical and Local Expert	IR	Desk/Document Review, Onsite Inspection, Interviews, Validation Findings
2	Ashwin Kumar K V	Validator, Technical Expert	IR	Desk/Document Review, Interviews, Validation Findings
3	Satya Prakash Goyal	Financial Expert	IR	Desk/Document Review

2.2 | Technical Reviewer(s) and approver(s) of the validation report

S.NO.	FULL NAME	ROLE(S)	TYPE OF RESOURCE	TYPE OF ACTIVITY(IES) CARRIED OUT
1	Rohit Badaya	Technical reviewer	ER	Technical Review of Documents
2	Margaret Francis	Manager Technical & Certification	IR	Technical Certification
3	Praveen N Urs	Approver	IR	Approver

PART III – MEANS OF VALIDATION

3.1 | Desk review/Planning

The report is based on the assessment of the proposed PDD, application of standard auditing techniques including but not limited to desk review, follow-up actions (e.g., electronic (telephone or e-mail, video) interviews) and also the review of the applicable approved methodological and relevant tools.

All the documents used for arriving inclusion are listed in Appendix 3 and referenced accordingly in the design change report.

3.2 | On-site inspection and list of interviewees

NA

3.3 | Remote audit (if applicable)

As per para 6.3.3 of validation and verification standard version 1.0 /5/, remote audit can be performed for the design change of project activity. Hence validation team has conducted the remote audit on 27/06/2024.

As referred to in sections 8.4 para 8.4.1(b) of the validation and verification standard, version 1.0, validation team performed remote audit on 27/06/2024.

According to the Site Visit and Remote Audit Requirements and Procedures – V2.0 /6/, remote audit was carried out by gathering all the people except Mr. Yücel at the project site and using video conferencing. Only the views of Mr. Yücel, the stakeholder, were obtained through the phone call. The site and monitoring equipment were also confirmed in the visuals.

This selected audit technique was not very different from face-to-face, but it was found appropriate since all supporting source documents were provided. Thanks to these techniques applied, no problems were experienced in closing the findings.

During the next audit, since the construction will be completed and the hybrid project will be put into operation, it will be more clearly understood whether the villagers experienced any problems during the process or not.

During on site visit, Mukhtar and stakeholder of Yayla village was interviewed. In the interviews, they stated that the solar power plant, which is currently under construction, is leaving the village under dust due to subcontractors. The Social Impact Expert confirmed that necessary measures such as watering the roads will be taken as a bridge between the villagers and the project manager upon this complaint. In addition, in the EIA meeting held to inform the stakeholders, the villagers were concerned that the project area would restrict animal grazing areas. Whether these concerns turn into complaints will be checked during the verification.

During interview, it is asked to the stakeholders and project employees if any legal contests or disputes have arisen during the monitoring period, and they confirmed that there is no legal contest or disputes have arisen.

DURATION OF REMOTE INSPECTION: 27/06/2024

NAME	ROLE	REMOTE AUDITING MEANS/METHODS	TOPICS COVERED
Ataberk Kerpiçi	Fiba Holding / Project Responsible	Videoconference	Project design
İrem Onat	NetZero / Consultant	Videoconference	project implementation & execution,
Aleyna Çelik	NetZero / Consultant	Videoconference	design change, new solar panel instructions,
Fulya Ekinci Özen	NetZero / Consultant	Videoconference	monitoring equipment and operation, revised generation of electricity and estimated emission reduction
Barış Zebil	Fiba Holding / Operation Manager	Videoconference	quality check & control, Monitoring of Gold Standard for Global Goal Parameters
Semra Erişmiş	Social Impact Expert	Videoconference	Additionality
			Benefit of the project to the village,

Selahaddin Başaran	Mukhtar / Yayla District	Videoconference	Receiving General Opinion of the local stakeholder about the project, Local Employment, Grievance Process Dust and noise pollution Animal grazing
Yücel Ahtım	Stakeholder / Yayla Village	Phone Call	

3.4 | Sampling approach

No sampling approach is applied.

PART IV - VALIDATION ASSESSMENT

4.1 | Validation of design changes - IF APPLICABLE

Type of design change applicable

☐	Corrections
☐	Changes to the start date of the registered crediting period
☐	Update and/or make permanent changes to registered monitoring plan
☒	Changes to the project design

4.7.1 | Corrections

ASSESSMENT QUESTIONS

1. Are the corrections made to the project information or parameters fixed at validation in compliance with the relevant requirements stated in Section 4 of Design Change Requirements ?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	No correction has occurred during the design change.	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
2. Is the corrected information an accurate reflection of actual project information; and/or the corrected parameters are in accordance with applicable standard documents i.e., methodology(ies) or applicable requirements?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
3. Does the corrected information accurately reflect the actual project information and/or does the corrected parameters reflect the application of the applied methodologies, the registered monitoring plan, the applied standardised baseline, and the other standard documents.		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
4. Are the proposed or actual changes to the project design in compliance with the Design Change Requirements ?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
5. Do the description of changes in revised PDD accurately reflect the implementation, operation, and monitoring of the modified project?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	

6. Is the revised PDD in compliance with all the requirements of the applied or updated methodologies, and all applicable regulatory documents?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
Findings		
☐ CL	No CL was raised for this section.	
☐ CAR	No CAR was raised for this section.	
☐ FAR	No FAR was raised for this section.	
Assertion statement		
No correction has occurred during the design change.		

4.7.2 | Changes to the start date of the crediting period

ASSESSMENT QUESTIONS

1. Is the proposed change in start date of crediting period in compliance with the relevant requirements stated in paragraph 3.1.3 of Design Change Requirements ?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	The first crediting period took place from 01/12/2012 to 30/11/2019 (inclusive). The second crediting period officially began on 01/12/2019; however, emission reductions were only claimed starting from 05/08/2020, which is the date of the renewal submission. This information is documented and verified in the Last Monitoring Report dated 16/08/2023 /14/. Thus, no change was made to the start date of the crediting period during the design change.	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
2. Are the proposed or actual changes to the project design in compliance with the Design Change Requirements ?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
3. Do the description of changes in revised PDD accurately reflect the implementation, operation, and monitoring of the modified project?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
4. Would the actual changes of the project design adversely affect the conclusions of the Validation Report of the registered PDD about additionality, applicability of the methodology(ies), compliance with the monitoring plan, scale of the project, stakeholder consultation, SDG, safeguarding assessment, or applicable legislation/host country regulations?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	

5. If investment analysis is used to demonstrate additionality, are key parameters only modified in the original spreadsheet calculations affected by the proposed or actual changes to the project?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
6. If barrier analysis is claimed to demonstrate additionality, are these still valid under the new circumstances?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
7. If positive list or standardised additionality is used, does the project comply with the positive list of the applied standardized baseline in the revised PDD?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
8. Is the revised PDD in compliance with all the requirements of the applied or updated methodologies, and all applicable regulatory documents?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
Findings		
☐ CL	No CL was raised for this section.	
☐ CAR	No CAR was raised for this section.	
☐ FAR	No FAR was raised for this section.	
Assertion statement		

The first crediting period took place from 01/12/2012 to 30/11/2019 (inclusive).

The second crediting period officially began on 01/12/2019; however, emission reductions were only claimed starting from 05/08/2020, which is the date of the renewal submission. This information is documented and verified in the Last Monitoring Report dated 16/08/2023 [/14/](#).

Thus, no change was made to the start date of the crediting period during the design change.

4.7.3 | Update and/or permanent changes to registered monitoring plan

ASSESSMENT QUESTIONS

1. Are the permanent changes or deviation to the monitoring plan in compliance with the relevant GS4GG requirements?	☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	The monitoring plan includes the following parameters: EGfacility, y, Air Quality, Quality of Employment, Water Quality and Quantity, Biodiversity, Soil Condition, waste oil, Quantitative employment and income generation, Balance of payments and investment. Since the parameters for the operation period of all renewable energy projects are available and there is no specific monitoring parameter for the added hybrid project (solar power plant), no changes were required in the monitoring plan.
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA
2. Are the permanent changes or deviation to the monitoring plan in compliance with the applied methodology (ies) and do not reduce the level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan?	☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA
3. Are the permanent changes or deviation to the monitoring plan likely to maintain or enhance the accuracy of the calculation of emission reductions and SDG Impacts?	☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA
4. Are there conservative assumptions or discount factors applied to the calculations to the extent required to ensure that emission reductions will not be over-estimated because of the permanent change or the permanent deviation?	☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA
5. Are the proposed or actual changes to the project design in compliance with the Design Change Requirements ?	☐ Yes ☐ No ☒ N/A

Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
6. Does the description of changes in revised PDD accurately reflect the implementation, operation, and monitoring of the modified project?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
7. Would the actual changes to the project design adversely affect the conclusions of the Validation Report of the registered PDD about additionality, applicability of the methodology(ies), compliance with the monitoring plan, scale of the project, stakeholder consultation, SDG, safeguarding assessment, or applicable legislation/host country regulations?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
8. If investment analysis is used to demonstrate additionality, are key parameters only modified in the original spreadsheet calculations affected by the proposed or actual changes to the project?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
9. If barrier analysis is claimed to demonstrate additionality, are these still valid under the new circumstances?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
10. If positive list or standardised additionality is used, does the project comply with the positive list of the applied standardised baseline in the registered PDD?		☐ Yes ☐ No ☒ N/A

Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
11. Is the revised PDD in compliance with all the requirements of the applied or updated methodologies, and all applicable regulatory documents?	☐ Yes ☐ No ☒ N/A	
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
Findings		
☐ CL	No CL was raised for this section.	
☐ CAR	No CAR was raised for this section.	
☐ FAR	No FAR was raised for this section.	
Assertion statement		
No changes were made to the monitoring plan.		

4.7.4 | Changes to project design

ASSESSMENT QUESTIONS

1. Are the permanent changes or deviation to the project design in compliance with the relevant GS4GG requirements?	☒ Yes ☐ No ☐ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	The capacity of the project activity is the same which are still 20 MWe when we compare it with the baseline situation as confirmed through the generation license /15/. The addition of the new technology is solar panels, however; this means the project activity has "the same technology/measures". There is no additional site and there will be no change in the project boundary. The solar panels will be located in the project area as allowed by Energy Market Regulatory Authority. The monitoring equipment will be the same and the generated electricity will be monitored with the same electricity meters for both wind and solar power plants. The only permanent changes will be the generated electricity and the associated reduction in emissions.
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	Permanent changes to the project design are in compliance with the GS4GG requirements as confirmed with the all-relevant guidelines, tools, methodology and requirements /1-9/.
2. In case of inclusion of new technology/measures, has the project developer(s) submitted the request for approval of design change to Gold Standard within one year of the start date of the proposed technology/measures?	☒ Yes ☐ No ☐ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	According to Design Change Requirements para 2.1.1, If a certified project includes a new technology or measure, it shall submit a request for approval of the design change to the certification body within one year of the proposed technology or measure's start date. The first real action for the hybrid project is the EPC agreement which was signed on 11/12/2023 /23/ and the project owner signed an agreement /16/ with VVB on 04/02/2024 for the approval of this design change. The design change process was completed in within one year. As a result of changes made in the cover letter /17/, project ownership, coordinator/manager organization (CME) and other issues after the request for design certification, the project developer/CME has submitted the valid revised document(s) signed by all relevant organizations to the certification body.
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	It has been confirmed by KBS that in case of incorporation of new technology/measures, the project developer(s) submits the design change approval request to Gold Standard within one year from the start date of the proposed technology/measures.

3. Are the permanent changes or deviation to the project design in compliance with the applied methodology (ies) and do not reduce the level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan?	☒ Yes ☐ No ☐ N/A
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Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	The project correctly applies the approved baseline and monitoring methodologies "ACM0002", "Grid-connected electricity generation from renewable sources", version 20.0 of 28/11/2019 /9/. In addition, the following methodological tools are applied in this PDD: • "Tool to calculate the emission factor for an electricity system" Version 07.0 /18/. • "Tool for the demonstration and assessment of additionality", Version 07.0 /19/. • "Tool to determine the remaining lifetime of equipment", Version 01.0 /20/. • "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", Version 03.0 /21/. The project initially started as a wind energy project on 01/12/2012. A subsequent modification involved the addition of solar panels to complement the wind turbines. Kavram Enerji Yatırım Üretim ve Ticaret A.Ş. is expanding by investing in a solar power system that will be integrated with the existing wind project, creating a hybrid energy setup. In this system, wind energy will remain the primary power source, with solar energy providing additional support. Since both measures are renewable energy which is specified as sectoral scope 1.2 under GS4GG, the same methodology continued to be used. The capacity of the project activity is the same which are still 20 MWe when we compare it with the baseline situation as confirmed through the generation license /15/. The addition of the new technology is solar panels, however; this means the project activity has "the same technology/measures". There is no additional site and there will be no change in project boundary. The solar panels will be located in the project area as allowed by Energy Market Regulatory Authority. The monitoring equipment will be the same and the generated electricity will be monitored with the same electricity meters for both wind and solar power plant. The only change will be the generated electricity and the associated reduction in emissions. KBS confirms that the selected baseline and monitoring methodologies have been previously approved by the CDM Executive Board and are applicable to the project, which complies with all the applicability conditions therein the selected versions are still valid at the time of submission of crediting period. It is also confirmed that the methodology is correctly applied by comparing them with the actual text of the applicable versions.
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Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	It is KBS's opinion that the monitoring plan is in accordance with the monitoring methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions. KBS has checked all the parameters presented in the monitoring plan against the requirements of the methodology and methodological tools. KBS confirms that the monitoring arrangements described in the monitoring plan, including the data management and quality assurance and quality control procedures, are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed GS4GG project activity can be reported ex post and verified. As a result, the appropriateness of the hybrid project in relation to the applied methodology "ACM0002", "Grid-connected electricity generation from renewable sources", version 20.0 of 28/11/2019 /9/ has been confirmed.
4. Are the permanent changes or deviation to the project design likely to maintain or enhance the accuracy of the calculation of emission reductions and SDG Impacts?	☒ Yes ☐ No ☐ N/A

Means of validation (MOV) Mention the means of validation (MoV) used to validate this information	The emission reduction calculation is based on the electricity production value given in the generation license /15/. The emission factor was selected based on the value verified during the re-validation process finalized on 04/03/2021, and no revisions were made. Therefore, the conservative assumptions and discount factors approved at the time are still valid. There will be no change in the operation of the project. The existing meters will measure the amount of electricity that both projects will produce, and there is no change in the responsibilities of the personnel responsible for the measurements. The main meter is EMH LZQJ-XC with serial number 5944140 and the backup meter is EMH LZQJ-XC with serial number 9798880. The meters have an accuracy of 0.5s as confirmed through the photos of the electricity meters /24/, First Index Protocol /27/, Last Index Protocol /28/, Meter Test Reports /25/, and Meter Change Protocol /26/. The accuracy class of the meters complies with the "Communiqué for Measurement Devices used in the Electricity Market" /23/. TEAIS is responsible for calibration and maintenance of the devices as per the registered revised PDD /10/. The project owner has no control on the meters since the meters are sealed by the TEIAS. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. The calibration of the main meter was made on 30/07/2017 as confirmed through the first index protocol /27/ and will be valid till 29/07/2027. The calibration of the back-up meter was made on 17/12/2020 as confirmed through the last monitoring report /14/ and will be valid till 16/12/2030. Also, ADM performed test of the electricity meters on 22/12/2020. All these issues also were confirmed via previous verification report /10/. Recalibration of these meters will be done in line with the equipment requirements and through the period defined by national metrology institutes country by country and for Turkey this period is defined as 10 years. The calibration of meters is deemed appropriate and in compliance with the national regulation /22/.
Justification of the MOV Justify how the used MoV was appropriate for the aspect validated.	It has been verified by KBS that permanent changes or deviations made to the project design are likely to maintain the accuracy of the calculation of emission reductions and SDG Impacts.
5. Are there conservative assumptions or discount factors applied to the calculations to the extent required to ensure that emission reductions will not be over-estimated because of the permanent change or the permanent deviation?	☒ Yes ☐ No ☐ N/A

Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	The emission reduction calculation is based on the electricity production value given in the generation license /15/. The emission factor was selected based on the value verified during the re-validation process finalized on 04/03/2021, and no revisions were made. Therefore, the conservative assumptions and discount factors approved at the time are still valid.	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	It has been verified by KBS that the conservative assumptions or discount factors applied to the calculations to the extent necessary to ensure that emission reductions are not overestimated due to permanent change or permanent deviation are still valid and that no changes have been made to these assumptions.	
6. Are the proposed or actual changes to the project design in compliance with the Design Change Requirements?		☒ Yes ☐ No ☐ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	The capacity of the project activity is the same which are still 20 MWe when we compare it with the baseline situation as confirmed through the generation license /15/. The addition of the new technology is solar panels, however; this means the project activity has “the same technology/measures”. There is no additional site and there will be no change in the project boundary. The solar panels will be located in the project area as allowed by Energy Market Regulatory Authority. The monitoring equipment will be the same and the generated electricity will be monitored with the same electricity meters for both wind and solar power plants. The only change will be the generated electricity and the associated reduction in emissions.	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	Proposed or actual changes to the project design have been verified by KBS to be compliant with the Design Change Requirements /4/.	
7. Do the description of changes in revised PDD accurately reflect the implementation, operation, and monitoring of the modified project?		☒ Yes ☐ No ☐ N/A

Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	There will be no change in the operation of the project. The existing meters will measure the amount of electricity that both wind and solar projects (hybrid) will produce, and there is no change in the responsibilities of the personnel responsible for the measurements. The main meter is EMH LZQJ-XC with serial number 5944140 and the backup meter is EMH LZQJ-XC with serial number 9798880. The meters have an accuracy of 0.5s as confirmed through the photos of the electricity meters /24/, First Index Protocol /27/, Last Index Protocol /28/, Meter Test Reports /25/, and Meter Change Protocol /26/. The accuracy class of the meters complies with the "Communiqué for Measurement Devices used in the Electricity Market" /23/. TEAIS is responsible for calibration and maintenance of the devices as per the registered revised PDD /10/. The project owner has no control on the meters since the meters are sealed by the TEIAS. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. The calibration of the main meter was made on 30/07/2017 as confirmed through the first index protocol /27/ and will be valid till 29/07/2027. The calibration of the back-up meter was made on 17/12/2020 as confirmed through the last monitoring report /14/ and will be valid till 16/12/2030. Also, ADM performed test of the electricity meters on 22/12/2020. All these issues also were confirmed via previous verification report /10/. Recalibration of these meters will be done in line with the equipment requirements and through the period defined by national metrology institutes country by country and for Turkey this period is defined as 10 years. The calibration of meters is deemed appropriate and in compliance with the national regulation /22/.
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	It has been verified by KBS that the description of the changes in the revised PDD accurately reflects the implementation, operation and monitoring of the modified project.
8. Would the actual changes of the project design adversely affect the conclusions of the Validation Report of the registered PDD about additionality, applicability of the methodology(ies), compliance with the monitoring plan, scale of the project, stakeholder consultation, SDG, safeguarding assessment, or applicable legislation/host country regulations?	☒ Yes ☐ No ☐ N/A

Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	Additionality: The main parameters of investment analysis used for the project activity have been verified by checking the document Günaydın Hybrid Financial Projection^{/29/} dated 22/09/2023 during remote interview. The difference of other parameters will not lead to the change of electricity generated by the project. As the electricity generated by the project will not change. therefore, the additionality of the project activity are not affected. The IRR after design change will not breach the Benchmark which is discussed in sensitivity analysis. It is confirmed the design change is in line with the real situation, this actual change complies with the relevant GS design change requirements v 1.1 related to changes to the project design of a registered GS project activity. <u>Applicability of the methodology(ies):</u> Since the added hybrid project remains within the same sectoral scope, there is no need for any methodological revision. Furthermore, nothing has changed regarding the applicability of the methodology. <u>Compliance with the monitoring plan:</u> The monitoring plan includes the following parameters: EGfacility, y, Air Quality, Quality of Employment, Water Quality and Quantity, Biodiversity, Soil Condition, waste oil, Quantitative employment and income generation, Balance of payments and investment. Since the parameters for the operation period of all renewable energy projects are available and there is no specific monitoring parameter for the added hybrid project, no changes were required in the monitoring plan. <u>scale of the project:</u> According to the amended license, the capacity of the project remains the same. Therefore, there is no change in the scale of the project. <u>Stakeholder consultation:</u> For the Environmental Impact Assessment (EIA) revision, stakeholders were notified, and their feedback was collected. According to the Design Change Requirements outlined in Section 4.5, no additional stakeholder consultation meeting under GS4GG was required because the project area remained unchanged, and local residents had been informed about the project before the addition of solar panels. The previously established complaint mechanism remains in effect. The regional headman has the contact details of the Günaydın Hybrid Wind and Solar Power Plant facility operator. A comment/complaint book, now updated with the title "Solar and Wind Project," is available for local residents, as confirmed during a field visit. To inform the public and gather input, advertisements were placed in a national newspaper (Yeni Mesaj Gazetesi, dated 24.01.2022) and a local publication (Manyasın Sesi Gazetesi, dated 25.01.2022). Local residents attended the meeting and
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	were briefed on the solar panel installation, with no objections raised. A Local Stakeholder Consultation (LSC) meeting was conducted on 04/02/2020 at 14:00 as part of the design change process. No negative feedback was reported during this meeting. Since the solar panel installation is confined to the existing project area, there is no need to reassess expropriation. The only stakeholder concern was the potential reduction in grazing areas. To address this, a FAR (Finding and Recommendation) was issued to ensure the topic is discussed during the validation process. <u>Applicable legislation/host country regulations:</u> There are unified regulations covering renewable energy in the host country requirements, so whether it is wind, solar or hydroelectric it will not change anything in terms of regulations.
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	
9. If investment analysis is used to demonstrate additionality, are key parameters only modified in the original spreadsheet calculations affected by the proposed or actual changes to the project?	☒ Yes ☐ No ☐ N/A

Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	Since the actual changes affect the additionality of the certified project activity, the validation team determined whether the actual changes impact on the additionality will be based on all original input data. To confirm that If the proposed or actual changes affect the additionality of the registered GS project activity: (a) If investment analysis has been used to demonstrate additionality, project participants have only modified the key parameters in the original IRR sheet affected by the proposed or actual changes to the project activity; (b) If only barriers have been claimed to demonstrate additionality, project participants have demonstrated that the barriers are still valid under the new circumstances. The Project developer has demonstrated additionality of the project activity in line with the "Tool for the demonstration and assessment of additionality"^{/9/} (Version 07.0). Further, the validation reveals that Project developer is not enforced by any legislation to invest in the proposed project activity and proposed project activity is in full compliance with host country rules and regulations. Project developer has obtained the required clearance from concerned authority which is verified through Generation License^{/15/} dated 04/01/2024. The project developer has used the investment analysis to demonstrate additionality during the initial validation of the project and design change. The validation opinion on additionality is detailed in this section. The validation team Raised CL 06 and closed. Refer Appendix 4 for the details.
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Justification of the MOV

Justify how the used MoV was appropriate for the aspect validated.

The input parameters of additionality estimated during the initial validation are discussed in the Initial validation report.

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

The project developer does not select for this option. Therefore, the project activity is not the first of its kind which is acceptable to the validation team as there are other wind and solar Hybrid projects exist in the host country.

Outcome of Step 0: The proposed project is not the first-of-its-kind.

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

Step 1a: Define alternatives to the project activity:

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

Alternative 1: The proposed project activity without GS benefit;

Alternative 2: Continuation of the current situation, i.e., electricity will continue to be generated by the existing grid connected power plants and by the addition new generation sources.

In the absence of the project, the same amount of electricity would be drawn from the grid only. Therefore, this is considered as realistic and credible alternative.

All other plausible and credible alternatives to the project activity that provide an increase in the power generated at the site, which are technically feasible to implement. Only alternatives available to project participants should be taken into account.

Step 1b: Consistency with mandatory laws and regulations:

The alternatives shall be in compliance with all applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g., to mitigate local air pollution. Both the alternatives are in

	compliance with all applicable legal and regulatory requirements as; • The implementation of project activity is a voluntary initiative and is not mandatory or a legal requirement. • The applicable environmental regulations do not restrict the use of wind and solar energy; and • There is no legal requirement on the choice of a particular technology. The below mentioned applicable laws and regulations identified for the project activity. 1. Electricity Market Law /33/ 2. Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Energy /34/ 3. Energy Efficiency Law /35/ 4. Forest Law /36/ 5. Environment Law /37/ Hence, both the alternatives identified above are found to comply with the mandatory laws and regulations considering the enforcement of the legislations in the region or country. Step 2: Investment analysis The project participant is required to determine whether the project activity is financially or economically less attractive than other alternatives without the revenue from the sale of GS carbon credits. To conduct the investment analysis, Project developer has followed the below sub-steps as per the applied methodology. Step 2a: Determine appropriate analysis method. Since the project activity generates financial and economic benefits other than VER revenues, the simple cost analysis (Option I) is not appropriate. Also, in the absence of the project activity grid electricity would have been the obvious choice for the Project which requires no investment. Hence investment comparison analysis method (Option II) is also not appropriate for the project activity; Therefore, Project developer has adopted benchmark analysis (Option III) to prove the additionality. Step 2b – Option III: Apply benchmark analysis. The project activity is electricity generation based on Wind and solar energy. The benchmark should thus be based on publicly available data sources. The project participant has
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selected Internal Rate of Return (post-tax Equity IRR) as financial indicator for investment analysis and benchmark analysis to demonstrate the additionality of the project activity. This indicator allows for effective comparison of the project returns with an appropriate benchmark. Therefore, the financial analysis is based on parameters that (a) are standard in the market and (b) consider the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. The benchmark represents the minimum implementation.

Equity IRR

The expected return on equity is estimated using world bank defined value for the similar project types which is 15% from the report /38/ dated 19th June 2017 (<https://documents1.worldbank.org/curated/en/799701498842988254/pdf/ICR00004069-06192017.pdf>). Therefore, the validation team confirms that the applicable Pre-Tax Equity-IRR benchmark i.e., 9.96% is appropriate and in accordance with the guideline provided in the "Methodological Tool: Investment analysis", version 12.0. Where an investment analysis is carried out in nominal terms and the available IRR benchmarks are in real terms. All input values were known before the investment decision date (20/12/2011) and can therefore be considered realistic and appropriate values to be used in the financial calculation of the proposed project activity.

The Key input Parameters used in the investment analysis are discussed in the below table.

Parameter	Source/Justification
Installation cost of Solar plant = 1,43,00,000 USD	The validation team verified the solar power plant installation cost of 1,43,00,000 USD from the document Günaydın Hybrid_Financial Projection ^{/29/} dated 22/09/2023 from Fiba Renewable Energy. Hence accepted by the validation team
Useful Life = 25 years	The validation team verified the useful life of the Solar PV project of 25 years from the document Günaydın Hybrid_Financial Projection ^{/29/} dated 22/09/2023 from Fiba Renewable Energy.

Equity = 23,00,000 USD	The validation team verified the value of Equity = 23,00,000 USD from the document Günaydın Hybrid_Financial Projection ^{/29/} dated 22/09/2023 from Fiba Renewable Energy. Hence accepted by the validation team
Bank Loan = 1,20,00,000 USD	The validation team verified the value of Bank Loan of 1,20,00,000 USD from the document Günaydın Hybrid_Financial Projection ^{/29/} dated 22/09/2023 from Fiba Renewable Energy. Hence accepted by the validation team
Electricity Generation = 65.7 GWhr / year	This is sourced from generation licence ^{/15/} issued for (multiple source electricity generation) wind and solar power plant (dated 04/01/2024). Hence accepted.
System Usage & Operation Fee (per MW) = 4.30 USD / year	This is sourced from Energy Market Regulatory Authority report ^{/30/} (https://www.teias.gov.tr/duyurular/2024-yili-sistem-kullanim-ve-sistem-isletim-tarifeleri) Hence the validation team verified and accepted.
Electricity Price = 7.70 USD/MWh	The validation team verified the Electricity Price 7.70 USD/MWh from EPIAŞ şeffaflık platform screenshot ^{/31/} submitted by the project developer (https://seffalik.epias.com.tr/electricity/electricity-markets/day-ahead-market-dam/market-clearing-price-mcp). Hence accepted by the validation team
Corporate Tax Rate = 25%	The validation team verified the value of 25% Corporate Tax Rate from the document Günaydın Hybrid_Financial Projection ^{/29/} dated 22/09/2023 from Fiba Renewable Energy. Hence accepted by the validation team

Sub-step 2c: Calculation and comparison of financial indicators

In accordance with paragraph 14 of the "Methodological Tool: Investment analysis", version 12.0, equity IRR is calculated as the discount rate that makes the present value of the future after-tax cash flows equal the investment outlay (only the

portion of investment costs which is financed by equity). The equation used for calculation of equity IRR is as follows:

$$\sum_i \frac{CF_i}{(1 + IRR)^i} = \text{Investment Outlay}$$

<i>CF_i</i>	The annual after-tax free cash flow to equity expected from the project activity in the year <i>i</i>
<i>Investment Outlay</i>	this includes all costs required to operational): land cost, pre costs (e.g., consultancy fees, license costs), equipment cost, construct

Based on the above equation post-tax equity IRR was calculated to be 9,96%, as confirmed from the submitted IRR sheet.

As the GS project activity has a less favorable indicator than the financial benchmark, hence the GS project activity cannot be considered as financially attractive for the Project developer.

Sub-step 2d: Sensitivity analysis

The Project developer has carried out the sensitivity analysis on the parameters which are likely to have material impact on Equity IRR. To check the robustness of calculation the following parameters have been selected.

1. Electricity income
2. Operating cost
3. Investment cost

The validation team confirms that the parameters that have been subjected to the sensitivity is in line with para 27 of the "Methodological tool: Investment Analysis, version 12.0". The sensitivity analysis covers a reasonable range of +10% and - 10%, which is in conformity with para 28 of the "Methodological tool: Investment Analysis, version 12.0".

Table -- Sensitivity analysis; impact of variations in assumptions on the IRR without carbon revenues

Parameters	IRR with -10% Variation	IRR with 0% Variation	IRR with +10% Variation
Electricity income	6.42%	9.96%	13.54%
Operating cost	10.66%	9.96%	9.26%
Investment cost	11.03%	9.96%	8.62%

The sensitivity analysis confirms that the pre-tax equity IRR without GS revenues is unlikely to meet the required benchmark of 15 % after design change.

Outcome of Step 2

Based on market trend in and document review, the validation team was able to establish that variation considered is appropriate on identified data/parameter to perform sensitivity analysis. The benchmark is treated as the reference at which the investment project is considered to be financially attractive. The IRR is lower than the benchmark after the addition of Solar PV units to the Existing wind project. Therefore, it can be stated that the Gunaydin Hybrid Wind and Solar Power Plant is unlikely to be financially/economically attractive (*since the Equity IRR i.e., 9.96% is lower than the benchmark i.e. 15%*). The validation team checked with the project developer and confirms that the addition of solar units is to achieve the committed electricity generation. The IRR decrease after the addition of solar units will be balanced and still the project is financially feasible considering the GS carbon revenue from carbon credit sales.

Step 3: Barriers analysis;

The Project developer has opted for the investment analysis; therefore, it is not required to elaborate on barriers analysis.

Step 4: Common practice analysis.

According to the methodological tool "Common Practice", Version 7.0, the step wise demonstration of common practice analysis is validated as follows:

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

The size of the project activity is 20 MWe, so the applicable output range as defined in the step is $\pm 50\%$ of the capacity of the proposed project activity. This output range will come in a capacity range of 10 MWe to 30 MWe.

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

- (a) The projects are located in the applicable geographical area (Turkey);
- (b) The projects apply the same measure as the proposed project activity (power generation based on renewable energy);
- (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 (wind).
- (d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas 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 (10 MWe to 30 MWe);
- (f) The projects started commercial operation before the project design document was published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

The Project developer has chosen the entire country as the geographical area for the purpose of common practice analysis. In this step, For the common practice analysis, the installed capacity of 20 MWe is used, and therefore the applicable range as $\pm 50\%$ of the capacity is 10 MWe to 30 MWe. The project participant aimed to list all wind power plants generating electricity within the capacity range of 10 MWe to 30 MWe.

Step 3: Within the projects identified in Step 2, identify those that are neither registered GS project activities, project activities submitted for registration, nor project activities

undergoing validation. Note their number, N_{all} .

In the similar project list, the project developer calculated N_{all} by excluding the VER projects. Therefore, $N_{all} = 4$

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

The project developer used all the options „a“ to „d“ to differentiate the project technology from other technologies. The validation team has observed that in the list of N_{all} , 1. BORES is a BOT type of power plant and also with its capacity of 10.2 MWe, it is considered as a different scale project. Hence, $N_{diff} = 4$

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.

$$F = 1 - N_{diff}/N_{all} = 1 - (4/4) = 0 \quad (< 0.200)$$

$$N_{all} - N_{diff} = 4 - 4 = 0 (< 3)$$

Outcome of Step 4:

Since proposed project activity is not regarded as "common practice" within the renewable power sector in the host country, Turkey. The proposed project activity is additional.

Conclusion:

The main parameters of investment analysis used for the project activity have been verified by checking the document Günaydın Hybrid Financial Projection^{29/} dated 22/09/2023 during remote interview. But the total installed capacity remains the same which are still 20 MWe which is in line with Generation license^{15/} dated 04/01/2024, The hybrid project is designed that wind is the main source and solar will be a feeder. The electricity with a steady capacity will get transferred to the grid. As a result, the installed capacity of the plant will not change. Therefore, the additionality of the project activity is not affected. The applicability of the approved methodology will not be changed as no change of the capacity and nature of the project activity.

The project developer installed additional solar units of 19,6614 MWm as an auxiliary source which is verified from generation license dated 04/01/2024. Solar panels have been added to the project to allow it to reach the generation capacity of 65.7 GWh/year stated in the production license. Before the design change, the Energy Assessment Report had determined the generation capacity as 55.5 GWh/year. Following the design change, the project will achieve the generation level of 65.7 GWh/year, in line with the license dated 04/01/2024. Hence, the solar units added to meet the electricity production and the Energy Market Regulatory agency issued the renewed license dated 04/01/2024. The validation team verified the latest generation license dated 04/01/2024 and found that the expected generation value of 65.7 GWh will be achieved considering the design change. The validation team calculated accordingly and found that the increase in electricity generation is 18.38%, which remains below the 20% threshold. The validation team verified the Registered PDD version 9 dated 02/06/2014 and compared the ER values.

Estimated ER Value as per Registered PDD version 9 dated 02/06/2014	Estimated ER Value as per PDD version 23 dated 23/01/2025 (after design change)	Increase in Estimated ER Value after design change
33,300 tCO ₂ e per year	36,262 tCO ₂ e per year	8.9%

Since the increase in estimated electricity generation value is 18.38% per year and increase in estimated ER value is 8.9% per year after the addition of solar units/design change which is less than the 20% threshold value of the value mentioned in the registered PDD for the large-scale project activity as per the Design Change Requirements v.1.1 para 3.1.5, page 7. Hence the validation team accepted.

It is confirmed the design change is in line with the real situation, this actual change complies with the relevant GS design change requirements v 1.1 related to changes to the project design of a registered GS project activity.

10. If barrier analysis is claimed to demonstrate additionality, are these still valid under the new circumstances?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
11. If a positive list or standardised additionality is used, does the project comply with the positive list of the applied standardised baseline in the registered PDD?		☐ Yes ☐ No ☒ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>	NA	
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>	NA	
12. Is the revised PDD in compliance with all the requirements of the applied or updated methodologies, and all applicable regulatory documents?		☒ Yes ☐ No ☐ N/A
Means of validation (MOV) <i>Mention the means of validation (MoV) used to validate this information</i>		
Justification of the MOV <i>Justify how the used MoV was appropriate for the aspect validated.</i>		
Findings		
☐ CL	(findings ID....)	
☐ CAR	(findings ID....)	
☐ FAR	(findings ID....)	
Assertion statement		

The Validation team checked the main parameters of investment analysis used for the project activity through the document Güneydın Hybrid Financial Projection^{/29/} dated 22/09/2023 during remote interview. But the total installed capacity remains the same which are still 20 MWe which is in line with Generation license^{/15/} dated 04/01/2024, The hybrid project is designed that wind is the main source and solar will be a feeder. As a result, the installed capacity of the plant will not change. Therefore, the additionality of the project activity is not affected. It is confirmed that the design change is in line with the real situation, this actual change complies with the relevant GS design change requirements v 1.1 related to changes to the project design of a registered GS project activity.

PART V – VALIDATION OPINION

Final opinion

☒ Positive
☐ Negative

KBS Certification Services Ltd. has been contracted by “Kavram Enerji Yatırım Üretim ve Ticaret A.Ş.” to perform the design change of the GS project activity “Gunaydin Hybrid Wind and Solar Power Plant” having GS reference no. 1178”.

The design change was performed in accordance with the GS4GG Validation and verification standard, version 1.0, GS4GG Design Change Requirements, version 1.1, GS4GG Principles & Requirements, Version 1.2, GS4GG Activity Requirements: Renewable Energy Activity Requirements, Version 1.4, CDM tools and requirements.

The GS program of activity will result in reductions of greenhouse gas (GHG) emissions that are real, and measurable and give long-term benefits to the mitigation of climate change. In our opinion, the project activity meets all relevant GS, CDM criteria and all relevant host country criteria.

The review of the PDD and the subsequent follow-up interviews have provided the validation team with sufficient evidence to determine;

- additionality of the project, applicability of the methodology(ies) and applicable requirement documents with which the project has been certified,
- compliance with the monitoring plan of applied methodology(ies),
- level of accuracy and completeness in the monitoring of the project compared with the requirements contained in the registered monitoring plan,
- scale of the project,
- Stakeholder Consultation,
- sustainable development impact assessment, including the application of the GS4GG SDG Impact Tool,
- safeguarding assessment, and
- compliance with applicable legislation/host country regulations.

The PDD correctly applies the methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 20.0”.

The management system provided in the proposed PDD is consistent with the design change requirement, version 1.1. It adequately includes all the roles and responsibilities of individuals involved in the implementation of the proposed project activity.

In conclusion, the validation team believes that the proposed project activity " Gunaydin Hybrid Wind and Solar Power Plant” having GS reference no 1178 meets all design change requirements and relevant GS requirements for submission of project activity to GS4GG for design change.

GHG emissions reductions and removals validated according to the design document (PDD):

* The first crediting period was conducted between the dates 01/12/2012 – 30/11/2019

YEAR	ESTIMATED BASELINE ANNUAL GHG EMISSIONS. (tCO ₂ e)	ESTIMATED PROJECT ANNUAL GHG EMISSIONS. (tCO ₂ e)	ESTIMATED AMOUNT OF ANNUAL GHG EMISSION REDUCTIONS OR GHG REMOVALS (tCO ₂ e)
05/08/2020 - 31/12/2020	13,755	0	13,755
2021	33,695	0	33,695
2022	30,632	0	30,632
2023	30,632	0	30,632
2024	32,745	0	32,745
2025	36,262	0	36,262
01/01/2026 – 30/11/2026	33,182	0	33,182
Total estimated ERs	210,902	0	210,902
Total number of crediting years	7*	7*	7*
Annual average over the crediting period	36,262	0	36,262

(both dates included). The start of second crediting period is 01/12/2019, however emission reductions has been claimed from 05/08/2020 which is the date of renewal submission as confirmed through the last monitoring report [/14/](#).

APPENDIX 1: ABBREVIATIONS

S.NO	ABBREVIATIONS	FULL TEXTS
1.	BE	Baseline Emissions
2.	CAR	Corrective Action Request
3.	CDM	Clean Development Mechanism
4.	CL	Clarification request
5.	CO2	Carbon dioxide
6.	DOE	Designated Operational Entity
7.	EF	Emission Factor
8.	EIA	Environmental Impact Assessment
9.	ER	Emission Reduction
10.	FAR	Forward Action Request
11.	GHG	Greenhouse gas(es)
12.	GWP	Global Warming Potential
13.	GS4GG	Gold Standard for Global Goals
14.	IPCC	Intergovernmental Panel on Climate Change
15.	KBS	KBS Certification Services Ltd.
16.	LSC	Local stakeholder consultation
17.	PE	Project Emissions
18.	PDD	Project Design Document
19.	QA/QC	Quality Assurance/Quality Control
20.	tCO2e	Tonnes of CO2 equivalents
21.	T&C	Technical & Certification
22.	UNFCCC	United Nations Framework Convention on Climate Change
23.	VVS	Validation & Verification Standard
24.	VVB	Gold Standard Validation and Verification Body

APPENDIX 2: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

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Personnel Name	Tuğçe Kıratlı
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Schemes	☐ CDM	☐ GCC	☒ GS	☒ VCS	☒ Other GHG Schemes (ICR, Cercarbono, ISO 14064)
Qualified to work as					
Team Leader			☒	Technical Expert	☒
Validator/Verifier			☒	Financial Expert	☐
Technical Reviewer			☒	Local Expert (Turkey)	☒
Area(s) of Technical Expertise					
Sectoral Scope			Technical Area		
SS 1: Energy industries (renewable/non-renewable sources)			TA 1.2. Renewable		
SS 13: Waste handling and disposal			TA 13.1. Solid waste and wastewater		
			TA 13.2. Manure		
Approved by (Manager Competence)			Dr. Rajesh Monga		
Approval date			05-10-2023		

Personnel Name		Mr. Ashwin Kumar K V			
Schemes	☐ CDM	☒ GCC	☒ GS	☒ VCS	☐ Other GHG Schemes (Cercarbono)
Qualified to work as					
Team Leader			☒	Technical Expert	☒
Validator/Verifier			☒	Financial Expert	☐
Technical Reviewer			☐	Local Expert	☒
Area(s) of Technical Expertise					
Sectoral Scope			Technical Area		
SS 1: Energy industries (Renewable / Non-Renewable Sources)			TA 1.2. Renewables		
SS 3: Energy Demand			TA 3.1: Energy Demand		
SS 9: Metal production			TA 9.1. Aluminum and magnesium production		
Approved by (Manager Competence & Training)			Mr. Dushyant Parashar		
Approval date			13-08-2024		

Personnel Name		CA Satya Prakash Goyal			
Schemes	☐ CDM	☐ GCC	☐ GS	☐ VCS	☐ Other GHG Schemes (mention here)
Qualified to work as					
Team Leader			☐	Technical Expert	
Validator/Verifier(trainee)			☐	Financial Expert	
Technical Reviewer			☐	Local Expert (India)	
Area(s) of Technical Expertise					
Sectoral Scope			Technical Area		
-			-		
Approved by (Manager Competency)			Shikha Sharma		
Date of Approval			13-01-2022		

Personnel Name		Mr. Rohit Badaya			
Schemes	☒ CDM	☒ GCC	☒ GS	☒ VCS	☐ Other GHG Schemes (mention here)
Qualified to work as					
Team Leader			☒	Technical Expert	
Validator/Verifier			☒	Financial Expert	
Technical Reviewer			☒	Local Expert (India)	
Area(s) of Technical Expertise					
Sectoral Scope			Technical Area		
SS 01: Energy industries (renewable/non-renewable sources)			TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
			TA 1.2: Energy generation from renewable energy sources		
SS 3: Energy demand			TA 3.1. Energy Demand		
SS 13: Waste handling and disposal			TA 13.1 Waste Handling and Disposal		
			TA 13.2 Manure		

Approved by (Manager Competence & Training)	Manager C & T
Approval date	16-10-2017

APPENDIX 3: DOCUMENTS/EVIDENCE REVIEWED OR REFERENCED

S.NO	AUTHOR	TITLE	REFERENCE TO THE DOCUMENT	PROVIDER
1.	Gold Standard	Principles and Requirements	Version 1.2 of 23/10/2019	Publicly available
2.	Gold Standard	Stakeholder consultation and engagement requirements	Version 2.1 of 14/06/2022	Publicly available
3.	Gold Standard	Safeguarding principles & requirements	Version 2.1 of 29/06/2023	Publicly available
4.	Gold Standard	Design change requirements	Version 1.1 of 14/04/2023	Publicly available
5.	Gold Standard	Validation and verification standard	Version 1.0 of 06/03/2023	Publicly available
6.	Gold Standard	Site visit and remote audit requirements and procedures	Version 2.0 of 30/05/2023	Publicly available
7.	Gold Standard	Validation & verification body requirements	Version 2.0 of 14/01/2021	Publicly available
8.	Gold Standard	Renewable energy activity requirements	Version 1.4 of 16/08/2021	Publicly available
9.	CDM Executive Board	ACM0002: Grid-connected electricity generation from renewable sources	Version 20.0 of 28/11/2019	Publicly Available

			version 9 of 02/06/2014 version 15 of 04/03/2021 version 19 of 18/09/2024 version 20 of 15/11/2024 version 21 of 20/11/2024 version 22 of 27/11/2024 version 23 of 23/01/2025	
10.	Günaydın WPP&SPP	Project Design Document		Project Participant
11.	Günaydın WPP&SPP	Emission Reduction excel sheet "Conf_CM_ER_Gunaydın 30.05.24"	version 01 of 30/05/2024	Project Participant
12.	Günaydın WPP&SPP	IRR excel sheet "Confidential Gunaydin Financial Model_final capacity_30.05.24"	version 01 of 30/05/2024	Project Participant
13.	Günaydın WPP&SPP	Common Practice excel sheet "Fiba Gunaydin Common Practice 30.05.24"	version 01 of 30/05/2024	Project Participant
14.	Günaydın WPP&SPP	Monitoring Report	version 5 of 16/08/2023	Project Participant
15.	Energy Market Regulatory Authority	Generation License EÜ/12325- 13/06052	Date of 04/01/2024	Project Participant
16.	Kavram Enerji	Agreement with VVB (KBS)	Date of 04/02/2024	Project Participant
17.	Kavram Enerji	Cover Letter	Date of 30/05/2024	Project Participant
18.	CDM Executive Board	Tool to calculate the emission factor for an electricity system version	Version 04.0 of 04/10/2013	Publicly Available
19.	CDM Executive Board	Tool for the demonstration and assessment of additionality	Version 07.0 of 23/11/2012	Publicly Available
20.	CDM Executive Board	Tool to determine the remaining lifetime of equipment	Version 1.0 of 16/10/2009	Publicly Available
21.	CDM Executive Board	Tool to calculate project or leakage CO2 emissions from fossil fuel combustion	Version 03.0 of 22/09/2017	Publicly Available
22.	The Ministry of Trade and Industry	Regulation of Metering and Testing of Metering Systems	date of 24/07/1994	Publicly available

23.	Energy Market Regulatory Authority	Communiqué for Measurement Devices used in the Electricity Market	date of 22/03/2003	Publicly available
24.	Kavram Enerji	Photos of the Electricity Meters	Submitted on 16/07/2024	Project Participant
25.	Nano Enerji	Test Reports of the Electricity Meters	Date of 25/08/2022	Project Participant
26.	TEIAS	Meter Change Protocol	Date of 10/05/2017	Project Participant
27.	TEIAS	First Index Protocol	Date of 30/07/2017	Project Participant
28.	TEIAS	Last Index Protocol	Date of 30/07/2017	Project Participant
29.	Fiba Renewable Energy	Günaydın Hybrid_Financial Projection	dated 22/09/2023	Project Developer
30.	Energy Market Regulatory Authority	Energy Market Regulatory Authority report (https://www.teias.gov.tr/duyurular/2024-yili-sistem-kullanım-ve-sistem-isletim-tarifeleri) -		Publicly available
31.	EPIAŞ	Evidence for Electricity price-EPIAŞ şeffaflık platform screenshot submitted by the project developer (https://seffaflik.epias.com.tr/electricity/electricity-markets/day-ahead-market-dam/market-clearing-price-mcp) -		Publicly available
32.	Zhejiang Orient Mühendislik ve Taahhüt A.Ş.	EPC Agreement	Dated 11/12/2023	Project Participant
33.	Minister of Energy and Natural Resources	Electricity Market Law	Dated 14/03/2013	Publicly available
34.	Ministry of Energy and Natural Resources	Law on Utilization of Renewable Energy Resources for the purpose of generating electricity energy	Dated 18/05/2005	Publicly available

35.	Ministry of Energy and Natural Resources	Energy Efficiency Law	Dated 18/4/2007	Publicly available
36.	General Directorate of Forestry	Forest Law	Dated 08/09/1956 Official Gazette Law no. 6831	Publicly available
37.	Ministry of Environment	Environment Law	Dated 11/8/1983	Publicly available
38.	World Bank	World Bank Document for IRR Benchmark.pdf (https://documents1.worldbank.org/curated/en/799701498842988254/pdf/ICR00004069-06192017.pdf)	Dated 19/06/2017	Publicly available
39.				

APPENDIX 4: FINDINGS

Section 1: CLs from the validation

CL ID	CL 1
Section no.	Key Project Information
Date	31/07/2024
Status	☐ Open ☒ Closed ☐ Turned to a FAR
Description of CL	In the e-mail sent to update the project name on the GS portal, the project name was specified as "Gunaydin Hybrid Wind and Solar Plant". Please make sure that the project name is this way in the entire report prepared.
Project developer response	A new e-mail was sent to Sustain Cert with the full name of the project, 'Gunaydin Hybrid Wind and Solar Power Plant.'
Documentation provided by PD	A screenshot of the e-mail dated 06/08/2024 sent to Sustain Cert for the project name update to be made within the scope of Design Change was provided.
VVB assessment	In the e-mail sent to update the project name on the GS portal, the project name was specified as "Gunaydin Hybrid Wind and Solar Power Plant". The report is revised accordingly. <u>Hence, CL 1 is closed.</u>

CL ID	CL 2
Section no.	A.1-A.5-B.7.1
Date	31/07/2024
Status	☐ Open ☒ Closed ☐ Turned to a FAR
Description of CL	The listed documentation should be provided: - It is stated that "a project introductory file (PIF) and a full Environmental and Social Impact Analysis (ESIA) were prepared for the project" in page 5 of the PDD. However, no PIF document is provided to VVB. - The technical characteristics of the solar panels could not be verified. Please send the entire EPC to verify which brand and model panel was purchased. - The calibration certificate or first index protocol should be provided for back up meter.
Project developer response	- The phrase "a project introductory file (PIF) and a full Environmental and Social Impact Analysis (ESIA) were prepared for the project" was included in version 15 of the PDD prior to the design change, and it is not a new addition to version 17 of the PDD, which was sent to the VVB with tracked changes. Both versions were provided before the audit. - Since the installation of solar panels is a turnkey contract, the information about the purchased solar panels is held by the contracting institution. The technical specifications of the solar panels are provided in the Technical Specification Document prepared by Nano Energy containing the information of the solar panels requested by the project developer. - The first index protocol of the backup meter could not be found by the project developer, but the calibration report dated 27/08/2020 from the EMH brand shows the information of the backup meter at number 19 (highlighted in the document). The test report of the backup meter dated 17/12/2020 by Nano Energy has also been provided for matching. At the same time, EMRA Commitment Letter for meters has been provided.
Documentation provided by PD	- Günaydin PDD w track change GS1178_v.18_06.09.2024 - Gunaydin WPP PDD Version 15 - Gunaydin- Hybrid Technical Specifications Document (Section 2 of the specification includes detailed information regarding the solar panels.) - EMH- Meter Test Report Document dated 27/08/2020 - 9798880 Backup Meter Test Report dated 17/12/2020 by Nano Energy - EMRA Commitment Letter
VVB assessment	- It is understood that there is no PIF for the hybrid project. The reference was given in first validation process of the project activity. - The technical characteristics of the solar panels could not be verified during the design change. A FAR is raised for this issue. - The calibration dates of the electricity meters are now revised and corrected. <u>Hence, CL 2 is closed and FAR 1 & FAR 2 are raised.</u>

CL ID	CL 3
Section no.	B.7.3
Date	31/07/2024
Status	☐ Open ☒ Closed ☐ Turned to a FAR
Description of CL	- It is written that "Global Tan Energy is responsible for calculating the emission reduction. This issue is not clear for VVB. Please clarify. - No additional information is given about monitoring system for solar panels in hybrid project.
Project developer response	- Global Tan Energy is a previous consultant to the project and the old version of the PDD includes this disclosure. This description was removed in the last version of the PDD. - There was no need to create a new monitoring plan for solar panels. This was stated in the section B.7.3. of the PDD version 18th.
Documentation provided by PD	- Günaydın PDD w track change GS1178_v.18_06.09.2024
VVB assessment	- Global Tan Energy, which is the previous consultant of the project activity is now removed from the revised PDD. - The necessary explanation is now added to Section B.7.3 of the PDD. <u>Hence, CL 3 is closed.</u>

CL ID	CL 4
Section no.	D.1
Date	31/07/2024
Status	☐ Open ☒ Closed ☐ Turned to a FAR
Description of CL	All miswriting such as "anddomestic", "tranported", "needen" should be corrected.
Project developer response	As can be seen in the document with tracked changes, these are typos in the previous version of the PDD, before the design change. Typos were corrected as requested by VVB.
Documentation provided by PD	Günaydın PDD w track change GS1178_v.18_06.09.2024
VVB assessment	Please kindly be informed that it is not important to us when the mistake was made. As VVB, we try to complete all the deficiencies we can find in the report we receive. It can be now confirmed that all miswritings are corrected. <u>Hence, CL 4 is closed.</u>

CL ID	CL 5
Section no.	E
Date	31/07/2024
Status	☐ Open ☒ Closed ☐ Turned to a FAR
Description of CL	As understood from what has been written, no new LCS meeting has been held regarding the hybrid project setup. However, stakeholders have been informed within the scope of the EIA meeting. - Please share clear information on the date of the EIA meeting. - It has been stated that stakeholders were informed in advance, but no evidence has been provided in this regard. There is no date in the "logbook delivery report" sent. - It is not clear whether there were any stakeholder comments regarding the hybrid project. It was stated in the statements made that there were no negative comments, but no evidence of this could be found in the EIA report. Please guide.
Project developer response	- The LSC meeting took place on 04/02/2020 at 14:00. The date of the meeting was clearly stated in the newspaper advertisements referenced in Section E.1 of PDD version 17. An additional clarification was provided in Section E.1 of PDD version 18 in response to the VVB's comment. - Evidence that stakeholders were informed in advance is provided by the LSC meeting. To ensure the validity of the grievance mechanism, the process was already tracked with a logbook in previous periods. Within the scope of design change, a new logbook with the new project name was delivered to the mukhtar. Logbook delivery report dated 08/07/2024 was provided. - In the previously provided EIA report, the handwritten remarks from participants wishing to provide comments are documented on pages 948 and 949, while the list of participants is included on page 950.
Documentation provided by PD	- Günaydın PDD w track change GS1178_v.18_05.09.2024 - Logbook Delivery Report dated 08/07/2024
VVB assessment	- A clear information is now presented about the date of the EIA meeting. - Logbook delivery report now contains date. - Stakeholder comments regarding the hybrid project is now clearly presented in the PDD. According to the comments given by stakeholders, a FAR is raised. <u>Hence, CL 5 is closed and FAR 3 is raised.</u>

CL ID	CL 06
Section no.	4.7.4 Changes to project design
Date	16/10/2024
Status	☐ Open ☒ Closed ☐ Turned to a FAR
Description of CL	The Validation team observed the Discrepancy of Loan interest rate value between different documents submitted by the project developer (I.e. IRR sheet, Financial Projection sheet). The Project developer to clarify the discrepancy between documents.
Project developer response	There is no discrepancy between the values; however, for clarity, the total value of 11.5%, which includes the 7% loan interest rate and the 4.5% SOFR rate from the Financial Projection Document, has been added to the Loan Payment_Solar 2 sheet of the IRR excel file with an explanatory note.
Documentation provided by PD	IRR Sheet
VVB assessment	The project developer clarified the details of interest rate mentioned in the IRR sheet and submitted the updated IRR sheet. The validation team verified and accepted the same. <u>CL 06 is Closed.</u>

Section 2: CARs from the validation

CAR ID	>>
Section no.	>>
Date	>>
Status	☐ Open ☐ Closed ☐ Turned to a FAR
Description of CAR	>>
Project developer response	>>
Documentation provided by PD	>>
VVB assessment	>>

Section 3: FARs from the validation

FAR ID	FAR 01
Section no.	A.5
Date	31/07/2024
Status	☒ Open ☐ Closed ☐ Turned to a FAR
Description of FAR	The number of inverters is defined as 59, however, there is no supporting document to verify this information. This issue should be checked and verified in the first verification.
Project developer response	>>
Documentation provided by PD	>>
VVB assessment	>>

FAR ID	FAR 02
Section no.	A.5
Date	11/09/2024
Status	☒ Open ☐ Closed ☐ Turned to a FAR
Description of FAR	The technical characteristics of the solar panels could not be verified during the design change. VVB should check the specifications of the solar panels during the first monitoring period.
Project developer response	>>
Documentation provided by PD	>>
VVB assessment	>>

FAR ID	FAR 03
Section no.	E.2
Date	25/09/2024
Status	☒ Open ☐ Closed ☐ Turned to a FAR
Description of FAR	During the EIA meeting, the villagers were concerned that the project area would restrict their animal grazing areas. Whether these concerns turn into complaints should be checked during verification.
Project developer response	>>
Documentation provided by PD	>>
VVB assessment	>>

DOCUMENT HISTORY

Version	Date	Description
1.0	DD/MM/YYYY	Initial adoption