

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

BASIC INFORMATION

Title of the GS4GG Project Activity	AY-YILDIZ 15 MW WPP
Reference number of the Project Activity	GS 634
Version number of the verification and certification report	2.1
Completion date of the verification and certification report	18/01/2023
Monitoring period number and duration of this monitoring period	5 th Monitoring period Duration: 12/04/2019 to 11/04/2022
Version number of the monitoring report to which this report applies	5.0 Dated: 26/12/2022
Crediting period of the project activity corresponding to this monitoring period	23/11/2017 - 22/11/2024
Project representative	Akenerji Elektrik Üretim A.Ş.
Host Party	Turkey
Applied methodologies and standardized baselines	Methodology: ACM0002 - Grid-connected electricity generation from renewable sources - Version 17.0.
Activity requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Mandatory sectoral scopes	Sector 1: Energy industries (renewable / non-renewable sources)
Product requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A

Sustainable Development Goals Targeted	SDG Impact	Estimated amount of annual average certified SDG impact (as per approved PDD)	Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	Units/Products
SDG 13 (Climate action)	Emission Reduction	168,682	142,695	tCO ₂ e
SDG 7 (Affordable and clean energy)	Net Electricity generation	296,370.41	250,817.01	MWh
SDG 8 (Decent work and economic growth)	Trainings imparted	5 employments & 1 Training	32 training & 15 Employments	Numbers
Name of the Gold Standard approved auditor (DOE)	Earthood Services Private Limited E-0066			
Name, position, and signature of the approver of the verification and certification report	 Dr. Kaviraj Singh Managing Director			

SECTION A. Executive summary

The Ay-Yıldız Wind Power Project is located inside the limits of Bandırma District of Balıkesir province of Turkey. The project has been commissioned on 01/09/2009 with 5 turbines having the total installed capacity of 15 MWe, each having 3 MWe capacity. The ministry of Energy and Natural Resources granted approval for the request to increase installed capacity to 28.2 MW on 20/01/2017, and the extended portion was put into service on 27/01/2017. As a result, it has been authorised to add four more turbines, each with a 3.3 MW capacity, increasing the total installed capacity up to 28.2 Mwe. The construction of the new turbines started in 2016 and commissioning of new turbines was approved in January 2017. In the final design of the project, total number of turbine installed are 9 turbines (5×3MWe+4×3.3MWe) with total installed capacity of 28.2 MWm/MWe. Total expected generation has increased from 51.32 GWh to 98.7 GWh after extension. With this extension, expected total emission reduction has increased from 30,997 tCO₂e to 56,176 tCO₂e. All these details were captured at the time of project renewal and are found appropriately reflected in the registered PDD.

According to the registered PDD/01/ the contract was signed on 29/04/2016, the Project areas have been rented for 30 years from the Bandırma Municipality. The area, which is a grassland owned by the municipality, has a total area of 6,320,237.09 m², out of which around 100,830 m² have been set aside for the project, or the entire boundary of the turbine.

During the current monitoring period from 12/04/2019 to 11/04/2022, the wind power plant has successfully delivered 250,817.01 MWh of electricity to the national grid under SDG 7, provided employment opportunities to a total of 15 employees and 32 trainings under SDG 8 and resulted in a reduction of 142,695 tCO₂e GHG emissions under SDG 13. The values for the SDG impacts achieved during the current monitoring period have been reported below:

Table 1: Sustainable Development contributions Achieved

Amount Achieved

Table 2: Product Vintage

Amount Achieved

SDG	Vintage				Total	Units/ Products
	12/04/2019 to 31/12/2019	01/01/2020 to 31/12/2020	01/01/2021 to 31/12/2021	01/01/2022 to 11/04/2022		
SDG 13 (Climate action).	31565	50624	48061	12,445	142,695	tCO ₂ e

SDG 7 (Affordable and clean energy).	55,483.00	88,982.10	84,477.195	21,874.71	250,817.01	MWh
SDG 8 (Decent work and economic growth: Number of jobs created).	23 Training & 15 employment s generated	6 Training & 15 employment s generated	3 Training & 15 employments generated	0 Training & 15 employment s generated	32 Trainings & 15 Employees	Number of employees

Scope of Verification

This verification is an independent and objective review and ex-post determination of the monitored SDG outcomes by the VVB. The verification addresses the implementation and operation of the GS PA and tests the data and assertions set out in the monitoring report based on the following:

- (i) The registered GS/CDM PDD and preliminary review feedback
- (ii) The approved methodology mentioned in the PDD.
- (iii) The registered monitoring plans.
- (iv) UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords
- (v) Latest GS4GG requirements
- (vi) CDM Validation and Verification Standard (VVS)
- (vii) Principles and Requirements for GS4GG
- (viii) Validation and Verification Body requirements, Product requirements and references relevant to the project activity's reported SDG outcomes

The verification has considered both quantitative and qualitative aspects on stated/reported SDG outcomes achieved as part of GS4GG. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by UNFCCC and GS4GG, as appropriate to the PA. The verification is not meant to provide any consulting or recommendations to the PP/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

Verification process

The verification process is conducted as per internal GS Quality Manual, which includes the following steps:

- a) Contract with PP and appointment of verification team and technical review team (refer Section B.1 and B.2 of this report).
- b) Desk review (refer Section D.1 of this report) of Monitoring Report and corresponding ER sheet by verification team and planning of remote interviews (including sampling approach (refer Section D.4 of this report) to be applied).
- c) Remote interviews (refer Section D.3 of this report) (physical implementation and interview with relevant stakeholders) by verification team.
- d) Reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report (refer Section D.5 of this report).
- e) Independent technical review (refer Section D of this report) of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences).

- f) Reporting and closure of TR comments/findings (refer Section D.5 of this report) (CARs/CLs/FARs) and final approval for the decision made (refer Section E and F of this report).
- g) Issuance of final verification report to contracted PP (or authorized representatives) and submission of request for issuance, as appropriate.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk / document review	On-site inspection *	Interviews	Verification findings
1.	Team Leader	IR	Guleria	Shifali	Central Office	Y	N	Y	Y
2.	Technical Expert (TA 1.2)	IR	Guleria	Shifali	Central Office	Y	N	Y	Y
3.	Methodology Expert	IR	Guleria	Shifali	Central Office	Y	N	Y	Y
4.	Local Expert	EI	Agriman	Kubra	Central Office	N	Y	Y	Y
5.	Trainee Verifier	IR	Vashisht	Sushant	Central Office	Y	N	Y	Y

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Mahala	Deepika	Central office
2.	Expert to TR	IR	Mahala	Deepika	Central office
3.	Approver	IR	Singh	Kaviraj	Central office

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human Error caused due to recording monitored data in main meter tabular report sheets	Low	The tabular reports are generated from SCADA system and then finalised by an independent division	All invoices and final tabular report issued by planification department were verified.
2.	Error in transferring the recorded data to ER sheet	Medium	The procedure for transferring in the final tabular report readings to the ER calculation sheet is manual, thus increasing the chances of error.	All invoices were cross-checked, and no such errors were identified.
3.	Error in applying the formulae in the emission reduction calculation sheet	Medium	The calculation method has been prescribed in the applied methodologies and further detailed in the registered PDD. The project involves large data, and the final emission reduction are a result of complex mathematical equations.	The emission reduction calculation sheet has been reviewed in detail by the assessment team. Each step for the calculation has been thoroughly checked to confirm the final numbers.

C.2. Consideration of materiality in conducting the verification

Monitored Parameter (Symbol / Description)	Reporting Frequency	Number of Discrete Data (Total)	Sample selected for verification Sample	Type of error identified	Impact on ERs	
					ERs impacted (Sample)	ERs impacted (Population based on extrapolation)
EG _{facility,y}	Monthly	37 (100%)	37 (100%)	No error	No impact	No impact

SECTION D. Means of verification

D.1. Desk / document review

The verification is performed primarily as a desk review of the documents submitted at various stages of assessments. The review is performed by assessment team using dedicated protocols (checklists). The assessment team cross checks the information provided in the documents (MR) and information from sources other than those used, if available, and conducts independent background investigations. Earthood conducted a desk review as under:

- a) A review of the data and information presented to verify their completeness.
- b) A review of the monitoring plan (as described in PDD) the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures.
- c) A review of calculations and assumptions made in determining the SDG outcomes.
- d) An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of SDG outcomes.

The list of documents reviewed during verification is provided under appendix 3 of this report.

D.2. On-site inspection

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

In the context of verification, the GS4GG principles and requirements version 1.2/08/, paragraph 5.1.26, requires the VVB to visit the site and determine the credibility of monitoring report as well as all supplementary materials that the project Developer provided to support conformity. However, the VVB may use the interim measures until 30/06/2022 in conditions where on-site monitoring cannot be executed adequately because of Covid-19 and travel restrictions due to the global pandemic (Covid Interims measures version 6.0/16/).

At the time of when the site-visit for this verification was being planned, India (where the VVB's office is located) was witnessing a new wave of COVID-19-infections, with over 43,045,527 confirmed cases as reported on 19/04/2022/31/. During this duration, i.e. 11/04/2022 when site-visit was to be conducted, members of the verification team, including the Team Leader, were also infected with Covid-19. Due to the global pandemic Covid-19 outbreak and the increased danger of exposure and contact via travel, as the infected cases in the country were spurting, the verification team decided not to undertake the on-site visit. Additionally, the PP acknowledged that postponing the verification procedure was not an option because a number of the PA's operational activities relied on the revenue generated by the ERs and significant delay was already caused in verification, leading to the unclaimable period three years before site visit to be conducted by verifying VVB. Covid interim measures were applicable at that time of remote audit which was conducted in April and validity of covid measure interims was till 30/06/2022

Therefore, for reasons provided above, and in line with GS4GG Covid-19 interim measures, the assessment team conducted the verification using alternative means as defined in the GS4GG Covid-19 Interim measures, ver. 6.0/16/, verification team applied standard auditing techniques for the verification, as discussed below:

Alternative means used by VVB:

The alternative means used by VVB for purpose of inspection and verification of project details are listed below:

1. Remote audit/23/ (via Microsoft Teams and through local expert visit) with the Project Participants and the O&M in charge to discuss the implementation of Project Activity and monitoring procedures for various parameters.
2. Review of supporting documentary and photographic evidence including independent checks. The entire list of documents reviewed for purpose of verification is available in Appendix 3 of this report.
3. Local Expert visited the project site at Ayyıldız Village, conducted an audit in line with local expert checklist provided by verification team and spoke to headman as well as Villagers who are being employed in the same project by PP.

These alternative methods were considered sufficient by the verification team for the current verification.

It is to be noted that PP submitted deviation request seeking "issuance of 3 years monitoring period retroactive from VVB site visit date" dated 08/12/2022. The deviation is found mentioned transparently in the Monitoring Report and submitted to the VVB after approval. The Deviation was approved by GS, which allows issuance of three years of MP through remotely conducted audit, provided the following conditions are met:

1. The duration of the GS monitoring period is not more than three years from the date of remote site visit by a VVB- The MP for the project is 12/04/2019 to 11/04/2019, thus meeting the condition.
2. Continuity in the Project's monitoring activities is maintained, and PD is able to justify that no monitoring gaps exist- The project continued to monitor its SDG contributions throughout the period under consideration and no gap had been identified. There are no such parameter which would require separate monitoring and these were monitored even for the duration which issuance is not being claimed for.
3. Document the deviation request, its implications, and GS' decision in the appropriate section of the GS Monitoring Report (for the relevant MP)- The deviation has been documented appropriately in the MR.

Additionally, all the requirements related to expert/external individual in Site Visit and Remote Audit Requirements and Procedures has been fulfilled by the VVB. The individual present on site is aware of basic validation and verification functions and now also works with VVB in multiple roles, including that of validator/ verifier. At the time of project site visit, she was working as Local Expert and Trainee Validator/ Verifier with the VVB and was virtually accompanied by TL/TA Expert throughout the audit. Considering these points, the required conditions are found to be met.

D.3. Interviews*

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Dogan	Isil	EKI	11/04/2022	ER calculations, calibrations, monitoring plan	Shifali Guleria, Kubra Agriman
2.	Aydın	Tibet	Akenerji Strategic Planning and Risk Specialist	11/04/2022	ER calculations, calibrations, monitoring plan	Shifali Guleria, Kubra Agriman
3.	Dede	Erdem Erkin	Plant Manager	11/04/2022	ER calculations, calibrations, monitoring plan	Shifali Guleria, Kubra Agriman
4.	Elçi	Osman	Operating Maintenance Manager	11/04/2022	ER calculations, calibrations, monitoring plan	Shifali Guleria, Kubra Agriman
5.	Akyol	Burak Can	Generation Performance Analysis Specialist	11/04/2022	ER calculations, calibrations, monitoring plan	Shifali Guleria, Kubra Agriman
6.	Tosun	Oğuz	EKI	11/04/2022	ER calculations, calibrations, monitoring plan	Shifali Guleria, Kubra Agriman
7.	Derman	Ali	Headman	11/04/2022	Project Grievances	Shifali Guleria, Kubra Agriman
8.	Çoban	Şaban	Villager	11/04/2022	Project Grievances	Shifali Guleria, Kubra Agriman
9.	Gezer	Davut	Villager	11/04/2022	Project Grievances	Shifali Guleria, Kubra Agriman
10.	Gölcük	Fatma	Villager	11/04/2022	Project Grievances	Shifali Guleria, Kubra Agriman

*The interviews and site-visit were conducted physically with help of LE (TL+TA expert present remotely).

D.4. Sampling approach

No sampling approach has been followed.

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

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	-	CAR 01,02 & CAR 05	-
Compliance of the project implementation and operation with the registered PDD	-	CAR 04	FAR#01
Post-registration changes	-	-	-
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	CAR 03	-
Compliance of monitoring activities with the registered monitoring plan	CL 02	-	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of SDG impacts	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Inconsistency of data	CL 01, CL 03	CAR 06	-
Total	03	06	01

SECTION E. Verification findings

E.1. Compliance of the monitoring report with the monitoring report form

Means of verification	The Gold Standard for Global Goals prescribes a template for MR. Therefore, PP has used the gold standards for global goals MR template form version 1.1 /09/ which has been issued by Gold Standards on 14/10/2020. The form has been filled in accordance with GS Monitoring report template guide/10/. In addition, all the GS4GG requirements are included in accordance with the principles and requirements/08/.
Findings	CAR#03, CAR#04 and CAR#05 were raised and resolved
Conclusion	The final monitoring report /17/ is found to be in compliance with the applicable latest monitoring report form/09/ and instructions contained in MR template guide/10/.

E.2. Remaining forward action requests from validation and/or previous verifications

FAR#01 was raised during the Design Review Round by GS. It is described in Appendix 4 of this Verification Report.

E.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	The Project Activity "AY-YILDIZ 15 MW WPP" is located at Ayyıldız Hill near the town of Bandırma in the province of Balıkesir. Project area has been rented from Bandırma Municipality for 30 years via the agreement dated 29/04/2016 with reference to registered PDD/01/. The land is grassland owned by Municipality and total area of the land is 6,320,357.09 m ² , out of which around 100,830 m ² has been allocated to the project which corresponds to total boundary of the turbine. Project
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location as mentioned in the table below was verified from the commissioning certificates/18/ and was found to be consistent with the information mentioned in the PDD/01/.

Site location	Longitude	Latitude
T1	574.923 E	4.467.686 N
T2	575.171 E	4.467.514 N
T3	575.482 E	4.468.079 N
T4	575.774 E	4.467.996 N
T5	576.023 E	4.467.825 N
T6	574.655 E	4.467.279 N
T7	575.542 E	4.468.554 N
T8	576.049 E	4.468.376 N
T9	576.361 E	4.468.359 N

The technical details of the project activity were confirmed by the assessment team while conducting the remote interviews and remotely conducted audit (with support of local expert) through the verification of nameplate of turbines, inverter's specifications, serial numbers of the electricity meters and the remotely available site records/23/.

Furthermore, the information about the inverters and transformers was checked and the verified details were found to be consistent with the PDD/01/.

The generated electricity from the wind power plant system has been fed to Turkish national grid.

At project start, meter 1 (Main meter) and meter 2 (Auxiliary meter) were installed and electricity generation data are being recorded continuously by two metering energy meters. These records provide the data for the monthly invoicing to TEIAS. Both meters are GYR E650 with accuracy class 0.2S (Main meter) & GYR E550 type with accuracy class 0.5S (Auxiliary meter). They have been successfully calibrated on 10/08/2015/06/. As per section B.7.1 of the registered PDD/01/, meters do not require calibration before 10 years./06/.

The details of the meters are given below:

Meter	Serial Numbers	Accuracy Class
Meter 1 (Main meter)	51255642	0.2s
Meter 2 (Auxiliary meter)	51222783	0.5s

The start date of crediting period is 23/11/2017 to 22/11/2024.

The assessment team has checked the Power purchase agreement/22/, electricity sales invoices/21/ and continuous electricity generation records/20/. During the remote interviews, verification team checked the implementation status of the project activity as defined in the registered PDD and MR along with the entire installed instrumentation mandatory for monitoring of emission reductions, thus comply with requirement of para 360 and 361 of VVS for PA/14/.

During the current monitoring period from 12/04/2019 to 11/04/2022, the following SDG goals have been targeted:

Sustainable Development Goals targeted	Amount achieved
SDG 13 Climate Change	142,695 tCO ₂ e
SDG 8 Decent work and economic growth	32 training & 15 Employments
SDG 7 Affordable and clean energy	250,817.01 MWh

Grievance Mechanism:

The Project Activity has an elaborate system for recording and processing

	any grievances that might arise at any stage of the Project Activity. There were no complaints made in person or conveyed via telephonic call. It was confirmed during the interviews with local stakeholders that no complaint was registered under the PA during the current monitoring period. Thus, it was confirmed that grievances of local stakeholders are appropriately recorded and addressed by the project developer. The VVB is able to confirm that there is no dispute regarding the Project Activity. This was followed by independent online research done by verification team to ensure if there is any media coverage on legalities around the functioning of the power plant. No such information was found. The CDM project activity implementation on ground was found consistent with the description provided in the registered PDD/1/. Interview of the personnel during remote interviews revealed that all the QA/QC procedures listed in the registered PDD has been applied during operation of the project activity.
Findings	CL#03 and CAR#02 raised and resolved.
Conclusion	The verification team confirms that: a) The project activity was found completely implemented as per the description given in the registered PDD. b) The actual operation conforms to the description in the registered PDD/1/. c) No operational parameter (information/data variable) was found deviating from the registered PDD. d) The SDG impacts for the monitoring period were found to be within the estimated quantity in the registered PDD.

E.4. Post-registration changes

E.4.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline.

Due to the delay in subsequent site visits by the VVB's for more than 3 years from the previous site visit date (conducted for 4th monitoring period of first crediting period), a gap between the two monitoring periods was identified during the current monitoring period from (23/11/2017 to 10/04/2019). As a conservative measure, the project owner considered a monitoring period of 3 years back from the present site visit date, and as a result, the VVB chose the option to verify a period of maximum 3 years prior to current site visit date. The mentioned deviation is considered and accepted as a conservative approach since the approach is resulting in likely under-estimation of actual emission reductions by claiming no emission reductions for the duration 23/11/2017 to 10/04/2019, thus ensuring that applied approach is conservative and not resulting in any possible over-estimation of ERs. Therefore, the temporary deviation is found acceptable and applied in line with GS4GG requirements.

E.4.2. Corrections

Not Applicable.

E.4.3. Changes to the start date of the crediting period

Not Applicable

E.4.4. Inclusion of a monitoring plan

Not Applicable.

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Not applicable.

E.4.6. Changes to the project design of approved project.

The project received a design revision that resulted in the addition of four more turbines, increasing its capacity to 28.2 MW and receiving GS approval in 2017.

E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	Based on this review it was found that the monitoring plan contained in the registered PDD/01/ includes all the required parameters to be monitored in the context of the PA design and description and allows proper determination of emission reductions in accordance with PDD/01/ and applied methodology ACM0002 Version 17.0 /02/
Findings	CAR#03 raised and resolved.
Conclusion	The monitoring plan is in accordance with the approved methodology, ACM0002 version 17.0 /02/ as included in the PDD/01/.

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	The values of ex-ante parameter can be found in the table given below:				
	Parameter(s) fixed ex-ante:				
	Relevant SDG Indicator	Parameter	Value in PDD		Assessment
	7.2.1. Renewable energy share in the total final energy consumption	EG _y	For 2013: 171,166,713 For 2014: 198,349,070 For 2015: 178,430,451. Net electricity generation between 2013-2015 is 547,946,234 MWh		The value has been calculated as per the “Tool to calculate the emission factor for an electricity system”/32/. The parameter is consistent with the PDD/01/ and is fixed for the entire duration of the crediting period.
	13.3.2. Number of countries that have communicated the strengthening of institutional, systemic	EF _{CO2,i,y}	FUEL SOURCE	(tCO ₂ /Tj)	IPCC default vales at lower limit of 95% confidence interval were used. Although, the actual emission reduction is expected to be higher due to high EF of fuels consumed in existing power plants, IPCC values have been used for
			Coal	89.5	
			Lignite	90.9	
			Fuel Oil	75.5	
			Diesel	72.6	
			LPG	61.6	

	and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions" and following target.		<table><tr><td>Naphtha</td><td>69.3</td></tr><tr><td>Natural Gas</td><td>54.3</td></tr></table>		Naphtha	69.3	Natural Gas	54.3	conservativeness as requested by the methodology/02/. The parameter is consistent with PDD/01/ & fixed for the entire duration of the crediting period.											
	Naphtha	69.3																		
	Natural Gas	54.3																		
	13.3.1. Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula	FC _{i,y} . Tons or 1000 m ³ for gases	Values applied and presented in Section B.6.3 of registered PDD (Page 25 & Table 5).		The value has been calculated as per the "Tool to calculate the emission factor for an electricity system"/32/. The parameter is consistent with the registered PDD version 12/01/ and is fixed for the entire duration of the crediting period. The values are sourced from https://teias.gov.tr/tr/turkiye-elektrik-uretim-iletim-istatistikleri/2015 /25/.															
13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula	NCV _{i,y} GJ/t or GJ/m3 (for gas)	<table><tr><td>Fuel Type</td><td>NCV GJ/t or GJ/1000 m³(for gas)</td></tr><tr><td>Hard Coal</td><td>23.95</td></tr><tr><td>Lignite</td><td>7.17</td></tr><tr><td>Fuel Oil</td><td>42.53</td></tr><tr><td>Diesel Oil</td><td>43.79</td></tr><tr><td>LPG</td><td>0.00</td></tr><tr><td>Naphta</td><td>0.00</td></tr><tr><td>Natura l gas</td><td>37.48</td></tr></table>	Fuel Type	NCV GJ/t or GJ/1000 m ³ (for gas)	Hard Coal	23.95	Lignite	7.17	Fuel Oil	42.53	Diesel Oil	43.79	LPG	0.00	Naphta	0.00	Natura l gas	37.48	The data has been sourced & verified from Grid Operator's (TEIAS) statistics. The calculation is done by dividing heating values of the fuel type I consumed over its quantity. Heating value of fuel consumed: https://teias.gov.tr/tr/turkiye-elektrik-uretim-iletim-istatistikleri/2015 / 26/. Quantity of fuel consumed: https://teias.gov.tr/tr/turkiye-elektrik-uretim-iletim-istatistikleri/2015 /27/.	
Fuel Type	NCV GJ/t or GJ/1000 m ³ (for gas)																			
Hard Coal	23.95																			
Lignite	7.17																			
Fuel Oil	42.53																			
Diesel Oil	43.79																			
LPG	0.00																			
Naphta	0.00																			
Natura l gas	37.48																			
The assessment team has checked that the ex-ante parameter was fixed at the level of PA and verified from the registered PDD/01/.																				
Findings	CAR#04 was raised and resolved																			
Conclusion	The value mentioned in the Monitoring Report /17/ and Emission Reduction Spreadsheet /03/ is consistent with the registered PDD/01/. The applied value is correct and justified.																			

E.6.2. Data and parameters monitored

E.6.2.1. SDG 7, indicator 7.2.1 and/or indicator 7.1.1: Renewable energy share in the total final energy consumption and/or Proportion of population with access to electricity

Parameter	EG _{facility,y} (Net electricity generated and delivered to the grid by the project in year y).	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring / Reading/ Recording Frequency	The parameter has been monitored by calculating the renewable energy share in the total final energy consumption. The parameter is monitored continuously for the estimation of GHG emission reductions. Metering devices used in power plants; monthly generation records were checked & verified/19/.
	Is measuring and metering frequency are in according with the monitoring plan and monitoring methodology? (Yes/No)	Yes, measuring and reporting frequency is in accordance with the monitoring plan /01/ and methodology/02/, which is Continuous measuring, and monthly recording/19/
	Monitoring equipment	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y is monitored through calibrated electricity meters (Main meter and auxiliary meter) and electricity generation data was recorded continuously by two metering energy meters. These records provide the data for the monthly invoicing to TEIAS. Both meters are GYR E650 & GYR E550 type with accuracy class 0.2S (Main) & 0.5S (Auxiliary). Both the meters were calibrated on 10/08/2015/06/. The information provided is in line with the Calibration certificate/06/ and hence, VVB has considered the information consistent and reliable.
	Is accuracy of the monitored equipment as started in the monitoring plan? If the monitoring plan does not specific the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacture's specifications?	Accuracy range of the equipment is Accuracy range: Class 0.2S for the Main meter & 0.5s for the Auxiliary meter which is in line with calibration certificate where the energy meters were replaced by the energy meter mentioned in the registered PDDPDD/01/ and consistent with calibration certificate/06/ as well.

Meter	Serial Numbers
Meter 1 (Main meter)	51255642
Meter 2 (Auxiliary meter)	51222783

	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to the different measuring ranges?	According to the monitoring plan/01/ and the manufacturer's specifications/24/, the accuracy is of class 0.2S (Main) & 0.5S (Auxiliary) is valid for the entire measuring range/06/.
	Calibration Frequency/interval:	In Accordance with the registered PDD/01/, new meters are obliged to have a technical lifetime of a minimum of 10 years without a need for calibration. The actual calibration was found to be conducted less than 10 years ago, and therefore, calibration frequency is met.
	Is the calibration of the measuring equipment carried out by an accredited person or institution?	As per the monitoring plan/01/, the meters have been calibrated at the time of manufacturing and are not required to be calibrated thereafter. The Calibration of both the new meters applicable for this monitoring period was carried out by the Başkent Elektrik Dağıtım A.Ş. which is an accredited institution.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, calibration is valid for the whole monitoring period. The data has been recorded continuously by two metering energy meters (Main meter Sr. No.: 51255642) & (Auxiliary meter Sr. No.: 51222783) the accuracy class for the Main meter is 0.2s and Auxiliary meter is 0.5s. The last calibration was carried out on 10/08/2015/06/ and the due date of calibration will be 09/08/2025. Hence VVB has cross verified the information with calibration certificate/06/ and registered PDD/01/ and found to be consistent and reliable.
	How were the values in the monitoring report verified?	The cumulative value of EG _y for the entire monitoring period is reported, and the monthly values are reported in the ER calculation sheet/03/. The values were verified from the monthly invoices/19/ & ER sheet/03/ produced by TEIAS. The value of this parameter for the current monitoring period was verified as follows /03/ For 2019: 55,483.0 MWh For 2020: 88,982.10 MWh For 2021: 84,477.195 MWh For 2022: 21,874.71 MWh Net electricity generation for the monitoring period is 250,817.01 MWh.
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG _y were further cross-checked with Meter reading records/20/and were found to be consistent.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the adequate QA/QC procedure were implemented by the PD. The two calibrated energy meter are Main and Auxiliary meter. Maintenance and calibration of these meters is done as per regulations of TEIAS/19/. No maintenance / calibration has been required during monitoring period. Meters used in the plant is with the accuracy of 0.2S (Main) & 0.5S (Auxiliary) class.

		The generation of the plant is primarily obtained from TEIAS/19/. Electricity generation is being cross checked by using the records of metering devices at project site and TEIAS records is being used for the emission reduction calculation.
	In case project participants have temporarily not monitored the parameter, has either (i) a deviation been approved by the CDM EB or (ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues have been observed.
Findings	CL#01 and CAR#04 was raised and resolved.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurements methods and procedure to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The assessment team is able to confirm that the project is implemented as per the registered PDD and there is no discrepancy observed between the actual monitoring system and the monitoring plan set out in the project description and the applied methodology outlined in the registered PDD/01/. The emission reduction calculation for the project activity is estimated based on the electricity generated based on the electricity supplied by the wind turbines. Monthly values of electricity generated inserted in the ER sheet/03/ was verified with the import and export TEIAS invoices provided by the PD/19/. Since 100% of the data was verified, the team can ascertain that the values taken for emission reduction calculations are free from material errors.	

E.6.2.2. SDG 8, Indicator 8.5.2: Unemployment rate, by sex, age and person with disabilities.

Parameter	Number of employments	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter has been monitored once in each monitoring period/17/.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes/ No)	Yes, measuring and reporting frequency in accordance with the monitoring plan
	How were the values in the monitoring report verified?	Assessment team confirms the value of parameter with the help of Employment & Training records provided by PD/28/. Review of these documents confirmed a total 32 trainings and 15 employments are being given in various departments

		of the project activity.
	If applicable, has the reported data been cross-checked with other available data?	Assessment team cross-checked the value of parameter from the social security system records of employee/30/ and Training certificates record provided by the PD/28/.
	Does the data management ensure correct transfer of data and reporting of SDG outcomes and are necessary QA/QC processes in place?	Yes, QA/QC procedures are in place.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/01/ (as per measurement methods and procedures to be applied) and applied methodology/02/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/01/. And the Training certificates provided by the PD/28/.	

E.6.2.3. SDG 8, Indicator 8.6.1 Proportion of youth (aged 15 - 24 years) not in education, employment or training.

Parameter	Number of trainings.	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter has been monitored once in each monitoring period/17/.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes/ No)	Yes, measuring and reporting frequency is in accordance with the monitoring plan/01/.
	How were the values in the monitoring report verified?	Assessment team confirms the value of parameter with the help of Employment and Training records provided by PD/28/. Review of these documents confirmed a total 32 trainings, and 15 employments are being given in various departments of the project activity.
	If applicable, has the reported data been cross-checked with other available data?	Assessment team cross-checked the value of parameter from the social security system records of employee/30/ and Training certificates record provided by the PD/28/.
	Does the data management ensure correct transfer of data and reporting of SDG outcomes and are necessary QA/QC processes in place?	Yes, QA/QC procedures are in place.
Findings	No findings were raised.	

Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/01/ (as per measurement methods and procedures to be applied) and applied methodology/02/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/01/. And the Training certificates provided by the PD/28/.
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E.6.2.4. SDG 13 Indicator 13.3.2. Number of countries that have communicated the strengthening of institutional, systemic and individual capacity- building to implement adaptation, mitigation and technology transfer, and development actions.

Parameter	Emission Reduction by to the project activity in year y(tCO ₂ e/year)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Yes, the parameter is recorded annually.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes/ No)	N. A
	How were the values in the monitoring report verified?	Net electricity generated and the emission factor for the grid, 0.5690 tCO ₂ /MWh and records of TEIAS invoices are being used as reference in calculation of the emission reduction/19/
	If applicable, has the reported data been cross-checked with other available data?	Not Applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management and QA/QC procedures were found to be in place as per the registered PDD/01/.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/01/ and applied methodology/02/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/01/.	

E.6.3. Implementation of sampling plan

Means of verification	No sampling plan has been reported in the registered PDD/01/.
Findings	Not Applicable.
Conclusion	Not Applicable.

E.7. Comparison of monitored parameters with last monitoring period

Means of verification	This section is not applicable for non-community service activities as per GS4GG guidelines
Findings	Not Applicable
Conclusion	Not Applicable

E.8. Assessment of data and calculation of SDG impacts

E.8.1. Calculation and assessment of SDG outcomes

Means of verification

For SDG 7 & SDG 13:

The baseline emissions are calculated as per provisions indicated in the registered PDD and applied methodology/02/.

Baseline emissions are calculated as follows:

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

Where:

BE_y = Baseline emission in year y (tCO₂/yr)

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

$EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (t CO₂/MWh)

$BE_y = 250,817.01$ MWh (Round Down) * 0.5690 tCO₂/MWh

$BE_y = 142,695$ tCO₂e

Calculations were checked in the emission reduction sheet/03/ against the registered monitoring plan/01/ and the calculations were found to be appropriately applied.

Leakage:

As per section 5.6 of the applied methodology/02/, there is no leakage associated with the project activity.

Project emissions:

As per para 36 of the applied methodology/02/, there are no project emissions involved as this project is a wind power plant and as per the methodology no project emissions are associated.

SDG 8:

Baseline estimate	Estimated value	Actual value achieved during the monitoring period
No provision for employment opportunities and training programs at the project site	5 employments & 1 Training	32 Training & 15 employees

As confirmed by the training certificates/28/, a total no. of Trainings were 32 and 15 employees have been hired in the Project facility during the current monitoring period.

SDG 7:

Baseline estimate	Estimated value	Actual value achieved during the monitoring period
No renewable energy generated and exported to the	296,370.41 MWh	250,817.01 MWh

	national grid		
	The actual values for the electricity exported to the national grid have been monitored continuously through the electricity meters installed on the project site. All the data was made available and have been monitored as per required monitoring frequency. The baseline emissions are calculated as per the applied methodology and is in accordance with the registered PDD/01/.		
Findings	CAR#06 raised and resolved.		
Conclusion	Calculations of baseline GHG emissions was found to be satisfactory. The assessment team confirms that: (a) The monitored data was available in accordance with the registered monitoring plan/01/. (b) The monthly reported data was cross-checked, as prescribed in the registered PDD/01/, with the invoices /19/ and was found consistent. (c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals have been followed. (d) The assumptions, emission factors and default values that were applied in the calculations have been justified. (f) The first day in which CERs are being claimed has been correctly specified, where applicable.		

E.8.2.Calculation of leakage GHG emissions

Means of verification	The PA is a renewable wind energy project which involves no leakage emissions. This is found to be in line with the applied methodology ACM0002 Version 17.0/02/.
Findings	No findings.
Conclusion	No project emissions were required to be calculated

E.8.3.Comparison of actual SDG impacts with estimates in approved PDD

Means of verification	The table below gives a comparison between the values estimated in the registered PDD/01/ and the values achieved during the current monitoring period in the MR/17/:		
	SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values achieved during this monitoring period
	SDG 13 (Climate action)	171,760 tCO ₂ e	142,695 tCO ₂ e
	SDG 7 (Affordable and clean energy)	547,946,234 MWh	250,817.01 MWh
	SDG 8 (Decent work and economic growth)	5 employment & 1 Training	32 Training & 15 employments generated
Findings	No findings were raised.		
Conclusion	The verification team confirms that a) The complete data was available and is duly reported. b) As indicated above, the description with respect to cross-check of reported data is included under respective parameter (refer - 'data and parameters monitored') section of this report. c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and		

	leakage emissions were followed. d) Appropriate emission factors, IPCC default factors and other reference values were correctly applied. e) There is no pro-rata approach that was applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol. The total number of VERs achieved during the current monitoring period is 142,695 tCO ₂ e.
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E.8.4. Actual SDG impacts

Means of verification	Earthhood Services Private Limited is able to certify that the SDG outcomes from the project activity GS 634 - "AY – YILDIZ 15 MW WPP" in Bandırma District of Balıkesir province of Turkey during the period 12/04/2019 to 11/04/2022 (including both the days) amounts is as follows:		
	SDG	SDG impact	Net benefit
	SDG 13 (Climate action)	Emission reduction	142,695 tCO ₂ e
	SDG 7 (Affordable and clean energy)	MWh of renewable energy generated	250,817.01 MWh
	SDG 8 (Decent work and economic growth)	Employment	32 Trainings & 15 Employments generated.
Findings	No findings were raised.		
Conclusion	The SDG outcomes were calculated fairly using the latest GS4GG principles and requirements/08/.		

E.9. Assessment of reported Global stakeholder consultation

E.9.1.1. Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations

Means of verification	The stakeholder consultation was conducted at the time of registration of the Project Activity under CDM. As verified during the remote audit, and by the site visit conducted by local expert on 11/04/2022/23/ the Project Activity has an elaborate grievance mechanism in place to record any inputs or feedback from the stakeholders. The Project Participants have maintained a grievance register at the project site with village head, wherein all the local stakeholders can submit their feedback or complaints. The stakeholders also have the option to submit their feedback via telephone or mail. However, local expert has confirmed the information through site visit and noted that there was no grievance recorded during the current monitoring period.
Findings	No findings
Conclusion	The grievance mechanism has been reported in line with the latest requirements of GS4GG principles and requirements/08/.

E.9.1.2. Report on any stakeholder mitigations that were agreed to be monitored

Means of verification	There were no stakeholder mitigations that were agreed to be monitored during the current monitoring period.
Findings	No findings.
Conclusion	Not Applicable.

E.9.1.3. Details of any legal contest that has arisen with the project during the monitoring period

Means of verification	There were no legal disputes that have arisen with the Project during the current monitoring period.
Findings	No findings.
Conclusion	Not Applicable.

E.10. Safeguards reporting

Means of verification	As per the safeguarding Principal Assessment approved in Transition Annex/07/ of the project, there are no safeguarding principles which are to be included in the monitoring plan/01/ or hold any relevance to the project activity. There are no impact (positive/negative/slightly) for any mitigation measures, being applicable to any of the safeguarding principles. Hence, this section is not relevant.
Findings	-
Conclusion	The project implementation is not harming the project in any safeguarding Principal. Therefore, no mitigation measure is required.

SECTION F. Internal quality control

The draft verification report that is prepared by verification team is reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by Earthood were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable CDM rules/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 verification team.

During the technical review process additional findings may be identified or the closed-out findings may be opened, which needs to be satisfactorily resolved before the request for issuance is submitted to Gold Standard. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that needs to be resolved by the verification team. The decision taken by the Technical Reviewer is final and is authorized on behalf of Earthood Services Private Limited.

SECTION G. Verification opinion

Earthood Services Private Limited (Earthood), contracted by Akenerji Elektrik Üretim A.Ş., has performed the independent verification of the emission reductions for the GS project activity 634 "AY – YILDIZ 15 MW WPP" for the monitoring period 12/04/2019 – 11/04/2022 (including both days) as reported in the Monitoring Report (public) Version 4.0 dated 18/08/2022.

Earthood commenced the verification based on the baseline and monitoring methodology ACM0002 Version 17.0, the monitoring plan contained in the PDD Version 12 dated 30/05/2018 and transition annex, Monitoring Report (public) Version 4.0 dated 18/08/2022.

Earthood's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. Earthood planned and performed the verification by obtaining evidence and other information and explanations that Earthood considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

The assessment team confirms that:

- The project activity was found completely implemented as per the description given in the registered PDD.
- The actual operation conforms to the description in the registered PDD.

SECTION H. Certification statement

It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity.

In our opinion the GHG emissions reductions reported for the project activity for the period 12/04/2019 – 11/04/2022 (including both days) are fairly stated in the Monitoring Report Version 4.0 (Final) dated 18/08/2022. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002 Version 17.0, and the monitoring plan contained in the PDD Version 12 dated 30/05/2018 and transition annex.

Earthood Services Private Limited is able to certify that the emission reductions from the GS project activity 634 “AY – YILDIZ 15 MW WPP” during the period 12/04/2019 – 11/04/2022 (including both days) amount to GS VERs is 142,695 tCO₂e.

GS Emission Reductions (VERs)	Verified	Estimated amount of annual average certified SDG impact (as per approved PDD)	Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	Units/ Products
Certified SDG 13 Impacts		168,682	142,695	tCO ₂ e

Verified and certified SDG outcomes as per commitment period:

SDG 13: 142,695 tCO₂e (VERs)

SDG 7: 250,817.01 MWh.

SDG 8: 32 training & 15 employees.

Appendix 1. Abbreviations

Abbreviations	Full texts
General	
ACM	Approved Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology for SSC Projects
BE	Baseline Emission
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CH4	Methane
CL	Clarification Request
CM	Combined Margin
CME	Coordinating/Managing Entity
CO2	Carbon di oxide
CP	Crediting Period
CPA DD	Component Project Activity Design Document
DNA	Designated National Authority
DR	Desk Review
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
GS4GG	Gold Standard for the Global Goals
GW	Giga Watt
GWh	Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
kW	kilo Watt
kWh	kilo Watt hour
LoA	Letter of Approval/Authorization
LSC	Local Stakeholder Consultation Process
MoC	Modalities of Communication
MoEFCC	Ministry of Environment, Forest and Climate Change
MoV	Means of Validation
MP	Monitoring Plan
MW	Mega Watt
MWh	Mega Watt hour
N2O	Nitrous Oxide
OM	Operating Margin
PCP	Project Cycle Procedure
PDD	Project Design Document
PE	Project Emission
PLF	Plant Load Factor
PoA DD	Programme of Activities Design Document
PP	Project Participant
PS	Project Standard
RFR	Request for Registration
tCO2e	Tonnes of Carbon di oxide equivalent
TPH	Tonnes Per Hour
UNFCCC	United Nations Framework Convention on Climate Change

V	Version
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Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Shifali Guleria		
Education	M.Sc. (Environmental Studies and Resource Management), TERI University		
Experience	3+ year		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	YES (AMS-I.A., AMS-II.G., AMS-II.E., AMS-III.A.V., AMS-I. D, ACM0002)		
Local expert	YES		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (1.2, 3.1)		
Reviewed by	Deepika Mahala	Date	16/02/2022
Approved by	Ashok Gautam	Date	18/02/2022

Competence Statement			
Name	Deepika Mahala		
Country	India		
Education	M. Sc. (Environment Management), GGSIP University B.Sc. Hons. (Chemistry), Sri Venkateshwar College, DU		
Experience	6 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	ACM0002, AMS.I.D., AMS.I.A, AMS.III.AV, AMS.II.G, AMS-II.C		
Local expert	YES (India, Bangladesh)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2 & TA 3.1)		
Reviewed by	Shifali Guleria (QM)	Date	28/04/2022
Approved by	Kaviraj Singh (MD)	Date	28/04/2022

Competence Statement	
Name	Kubra Agriman

Country	Turkey		
Education	BS Environmental Engineering		
Experience	2 years		
Field	Environmental Engineering		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	Yes (Turkey)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert	NO		
Reviewed by	Deepika Mahala	Date	28/06/2021
Approved by	Ashok Gautam	Date	01/07/2021

Competence Statement			
Name	Sushant Vashisht		
Education	M.Sc. Environmental science and Technology		
Experience	6 months		
Field	Environment science and technology		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Trainee	YES		
Reviewed by	Shifali Guleria (Quality Manager)	Date	10/05/2022
Approved by	Deepika Mahala (Technical Manager)	Date	10/05/2022

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	PD	Registered PDD	Version: 12 Dated:30/05/2018	Others
2	UNFCCC	Methodology: ACM0002: Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable	Version 17.0	Others

		sources		
3	PD	ER Calculation Spreadsheet	Version 4.0 20/07/2022	PD
4	UNFCCC	CDM project standard for project activities	Version 3.0	Others
5	UNFCCC	UN Web page https://cdm.unfccc.int/Projects/DB/R_WTUV1493712660.23/view	-	Others
6	PD	Calibration certificates	Dated: 10/08/2015	Others
7	PD	Transition Annex	Version 1.0	PD
8	GS4GG	Principles and Requirements	Version 1.2	PD
9	GS4GG	MR template	Version 1.1	Other
10	GS4GG	MR template guide	Version 1.1	Other
11	GS4GG	Site Visit and Remote audit requirements and procedures	Version 1.0 Date: 17/11/2021	Others
12	ESPL	3 rd Verification report when the OSV was conducted (MP duration: 01/07/2018 to 30/09/2019)	Version 2.0 14/06/2021	Others
13	UNFCCC	Tool for the demonstration and assessment of additionality http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf	Version 7	Others
14	GS4GG	VVS for PA	Version 3.1	Others
15	GS4GG	PS for PA	Version 3.1	Others
16	GS4GG	Gold Standard Covid-19 Interim Measures	Version 6.0 Date: 14/06/2022	Others
17	PD	Final Monitoring Report	Version: 4.0 18/08/2022	PD
18	PD	Commissioning Certificate	-	PD
19	PD	TEIAS invoices	-	PD
20	PD	Meter Reading records	-	PD
21	PD	Electricity sales invoices	-	PD
22	PD	Power Purchase Agreement	-	PD
23	PD	Remote site records	11/04/2022	PD
24	PD	Manufacturer's specification	-	PD
25	PD	(TEIAS) statistics Türkiye Termik Santrallerinde Kullanılan Yakıt Miktarlarının Üretici Kuruluşlara Dağılımı (2006-2015) https://teias.gov.tr/tr/turkiye-elektrik-uretim-iletim-istatistikleri/2015	-	PD
26	PD	(TEIAS) statistics Quantity of fuel consumed. Türkiye Termik Santrallerinde Kullanılan Yakıtların Isı Değerlerinin Üretici Kuruluşlara Dağılımı (2006-2015). https://teias.gov.tr/tr/turkiye-elektrik-uretim-iletim-istatistikleri/2015	-	PD
27	PD	(TEIAS) statistics Quantity of	-	PD

		fuel consumed Türkiye Termik Santrallerinde Kullanılan Yakıt Miktarlarının Üretici Kuruluşlara Dağılımı (2006-2015).		
28	PD	Employment and training Records	-	PD
29	PD	Excel sheet – WW Removal Records	-	PD
30	PD	Security system records	-	PD
31	WHO	"India situations report 112" by WHO. https://cdn.who.int/media/docs/default-source/wrindia/situation-report/india-situation-report-112.pdf?sfvrsn=f702fe4a_2	-	WHO
32	UNFCCC	Tool to calculate the emission factor for an electricity system	Version 06	Others

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

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

FAR ID	01	Section no.	E.2.	Date : DD/MM/YYYY
Description of FAR				
FAR from Design review:				
Forward Action Request # 1: Verifying DOE to clarify the monitoring equipment of the project activity with respect to the registered electricity meter specifications and the locations.				
Project participant response				Date : DD/MM/YYYY
Since the installed capacity of the power plant was increased, current transformers were changed and the main counter was replaced with a spare counter. The main counter has become a spare counter and its internal multiplier has been changed and continues from the indexes on it. These changes can be seen from the submitted meter change report officially created by Uludağ Elektrik Dağıtım A.Ş. on 04/11/2016 under the "Explanations" section.				
Since the meter change procedures and retaining the specifications of meters is under the purview of EPIAS which is a government agency, hence the project owner is not having a control over it.				
Documentation provided by project participant				
VVB assessment				Date: DD/MM/YYYY
VVB confirms that PD has submitted the evidence where the spare counter of the transformer was used to replace the main counter and VVB has received the report by Uludağ Elektrik Dağıtım A.Ş. dated 04/11/2016. The evidence is satisfactory and hence, the finding is closed.				
FAR#01 is closed				

Table 2. CL from this verification

CL ID	01	Section no.	E.6.2.1	Date : 10/05/2022
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Description of CL	
In ER sheet, From Nov 2019 to May 2020, there are variation in values of electricity generation between Column H (Net Electricity) and column I (net electricity delivered to the grid). The basis behind the variation of values of net electricity delivered to grid is not clear. It has been entered manually. PD is requested to clarify.	
Project participant response	Date : 03/06/2022
This difference was occurred by the difference between TEİAŞ and EPİAŞ records. Even though there are variations between net electricity generation and the net electricity delivered to grid, lowest value was taken for emission reduction calculations.	
Documentation provided by project participant	
Invoices provided	
VVB assessment	Date: 14/06/2022
The verification team have reviewed the invoices records provided by PD. The values in ER sheet mentioned in column I (net electricity delivered to the grid) found to be inconsistent with the invoices provided.	
CL#01 is open	
Project participant response	Date : 20/07/2022
The values in the ER Sheet has been made consistent as per the invoices provided to the DOE	
Documentation provided by project participant	
Revised ER Sheet Invoices for monitoring period	
VVB assessment	Date: 01/08/2022
The values have been updated in the ER sheet. The revisions are found to be accurately updated in line with the invoices for electricity generation for this monitoring period. Therefore, CL#01 is closed.	

CL ID	02	Section no.	E.4.1	Date : 10/05/2022
Description of CL				
The monitoring period number and duration of the monitoring period of the current monitoring report is 05 and 12/04/2019 to 11/04/2022, respectively. As per the previous verification report retrieved from GS impact registry (GS634), Last verification duration of the project is 01/09/2013 to 31/08/2016 i.e for 4 th monitoring period. The verification team has identified a gap in monitoring period from (23/11/2017 to 10/04/2019).				
Project participant response				Date : 03/06/2022
Due to delay in subsequent monitoring, as a conservative approach PP has considered a period of 3 years back from the onsite visit to fix the present monitoring period. GS2468 project which has a similar situation and approved by DOE can be checked as an example. ¹				
Documentation provided by project participant				
VVB assessment				Date: 14/06/2022
The monitoring period is not consecutive to the previous monitoring period. However, PP has clarified the reason for gap. The gap in monitoring period is not resulting in any over-estimation of emission reductions and therefore, accepted by the verification team. CL#02 is closed.				

CL ID	03	Section no.	E.3	Date : 01/08/2022
Description of CL				

¹ <https://platform.sustain-cert.com/public-project/381>

The location marked in Blue are the coordinates mentioned in the MR report.
The location marked in red circle is location where the WTG is actually installed.
PP shall clarify.

Date :04/08/2022

Legislation in Turkey requires the use of a national coordinate system for energy license. It is TURKEY_ED50 6 degree coordinate system. (EPSG code: 23035) Google earth uses Universal Mercator coordinate system (EPSG: 4037) the two system has difference cause of datum.

License coordinate system:



Screenshot from CAD program. (UTM 6 degree coordinate system)

Documentation provided by project participant

Screenshot from CAD program. (UTM 6 degree coordinate system)

Date: 05/08/2022

The inconsistency was found due to different coordinate system used. PP has used National coordinate system European Datum 1950 (ED 50), however VVB used World geodetic system 1984 (WGS 84). Hence VVB will consider the ED 50 coordinate system because the project location is in Turkey and the Datum used is more appropriate and accurate for the Project location. Therefore CL#03 is closed.

Table 3. CAR from this verification

CAR ID	1	Section no.	E.1. & E.4.	Date : 10/05/2022
Description of CAR				
In Key project information, on page 2 of Monitoring Report:				
1. In section "version number of the PDD applicable to this monitoring report" found to be inconsistent with the recent PDD version 12.				
2. In section "date of project design certification", date mentioned found to be inconsistent with the recent PDD version 12.				
PD is requested to take the corrective action				
Project participant response				Date : 03/06/2022
Updated.				
Documentation provided by project participant				
VVB assessment				Date: 14/06/2022
1. The Version number of PDD applicable to this monitoring report is updated. The verification team confirms that the PDD version updated is appropriate. Closed.				
2. The verification team reviewed the MR ver. 2. The verification team found that the date updated is still inconsistent. Open				
Project participant response				Date : 07/07/2022
2.The GS Registration date has been corrected in the MR as requested.				
Documentation provided by project participant				
gs634_Verification Report_monitoring period_01-03-2012 to 31-08-2013_v03				
VVB assessment				Date: 18/07/2022
The date has been updated and is found to be now consistent with the registered PDD. Therefore, CAR#01 is closed.				

CAR ID	2	Section no.	E.3	Date : 10/05/2022
Description of CAR				
Following inconsistencies are found in section A of the MR:				
1. In section A.2, on page 5 of the MR, the coordinates in the table 2 found to be inconsistent with coordinate mentioned on the PDD ver.12, page 3.				
2. On page 6 of MR, in section A.4, The date of first crediting period mentioned found to be inconsistent with the date given in page 3 of PDD ver12.				
PD is requested to take the corrective action.				
Project participant response				Date : 03/06/2022
Updated.				
Documentation provided by project participant				
Updated project description				
VVB assessment				Date: 14/06/2022
1.The verification team have reviewed the revised MR. The coordinate updated found to be consistent with co-ordinate mentioned in PDD VER.1.				
2. Pd has updated date of first crediting period. Verification teams conformed that the date updated found to be consistent with date mentioned in PDD ver 12.				
CAR is closed				

CAR ID	3	Section no.	E.5	Date : 10/05/2022
Description of CAR				

In section A.3 Reference of applied methodology:	
1. PD is requested to use the same Methodology version mentioned in the PDD. PD is requested to take this corrective action through the monitoring report. 2. The 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 is not included in section A.3 of monitoring report.	
PD is requested to take the corrective action	
Project participant response	Date : 03/06/2022
Updated.	
Documentation provided by project participant	
Updated PD	
VVB assessment	Date: 14/06/2022
1. PD has updated the methodology version. The Updated version found to be consistent with the version mentioned in The PDD version 12. Closed 2. PD has included methodology “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, The methodology updated found to be consistent and appropriate. Closed	
CAR03 closed	

CAR ID	04	Section no.	E.6.1 & E.6.2.1	Date : 10/05/2022
Description of CAR				
In section D “Data and Parameters” of monitoring report,				
1. In section D.1, page 11 of MR, In Parameter $FC_{i,j,y}$, the value applied is found to be inconsistent with value given in PDD page 25. 2. In section D.2, In parameter $EG_{facility,y}$, The meters mentioned in measurement methods and procedure are found to be inconsistent with the meter mentioned in appendix 1 of monitoring report.				
PP is requested to take corrective action.				
Project participant response				Date : 03/06/2022
1. Provided values are consistent with the values given in PDD ver12 pg 25 and its appendix-4. 2. Updated.				
Documentation provided by project participant				
1.closed				
2.closed				
VVB assessment				Date: 14/06/2022
1. The verification team have reviewed the updated MR. The Values are consistent with PDD ver 12. Closed 2. PD has updated the meter mentioned in section D.2, The updated meter found to be consistent and appropriate. Closed				
CAR04 closed				

CAR ID	05	Section no.	E.1	Date : 10/05/2022
Description of CAR				

In section E, of Monitoring Report,	
1. In section E.1, on page 17 of Monitoring report, the formula for BE_y found to be inconsistent with the formula mentioned in PDD. 2. In section E.4, on page 18 of Monitoring Report, the baseline estimate and project emission found to be inconsistent. 3. In section E.5, on page 19 of Monitoring Report, The values mentioned in table for "Values estimated in ex ante calculation of approved PDD for this monitoring period" found to be inconsistent with value given in PDD. 4. In section E.5.1, the number of days covered and value of SDG7 and SDG 13 found to be inconsistent.	
PD is requested to take the corrective action.	
Project participant response	Date : 03/06/2022
1. Updated. 2. Updated. 3. Updated. 4. Updated.	
Documentation provided by project participant	
VVB assessment	Date: 14/06/2022
1. PD has updated the formula of BE_y, the verification team confirms that the formula updated found to be consistent with the formula mentioned in the PDD. Closed 2. The verification team reviewed updated MR. PD have taken corrected the project estimate for SDG 8. However, SDG 13 and 7 found to be inconsistent. Open 3. PD has updated the Value estimated in ex-ante calculation in section E.5. The value updated found to be consistent and appropriate. Closed 4. PD has updated the number of days covered. The number of days covered now found to be consistent with monitoring period. Closed	
Project participant response	Date : 07/07/2022
The MR has been corrected as per the VVB comment	
Documentation provided by project participant	
Revised MR	
VVB assessment	Date: 18/07/2022
The revised MR has been reviewed and for all SDG parameter values it is found that baseline estimates and project estimates have been accurately reported in line with ER sheet and transition document. CAR#05 is closed.	

CAR ID	06	Section no.	E.8	Date : 10/05/2022
Description of CAR				
PD is requested to address the following issues in the ER sheet:				
1. In accordance with GS4GG requirements, please add a new tab in ER sheet and add the estimated amount of annual average certified SDG impact (as per approved PDD) and total amount of certified SDG impact achieved in this Monitoring period for parameters SGD 8 and SDG 7. 2. In ER calc and generation sheet, the value for April 2022 is not included.				
PD is requested to take the corrective action.				
Project participant response				Date : 03/06/2022
1. Updated. 2. Updated.				
Documentation provided by project participant				
VVB assessment				Date: 14/06/2022

1. The verification team reviewed the ER sheet provided. The estimated amount of annual average certified SDG impact (as per approved PDD) for all SDG parameters are not included. Open 2. PD has updated the ER sheet and included the value for April 2022. The value updated found to be consistent with the invoices provided for April 2022.Closed.	
Project participant response	Date : 07/07/2022
The estimated amount of annual average certified SDG impact has been included in the ER Sheet as requested.	
Documentation provided by project participant	
VVB assessment	Date: 18/07/2022
The estimated amount of annual average certified SDG impact are now included in the ER sheet. The calculations have been assessed and are found to be appropriately and accurately demonstrated. CAR#06 is closed.	

CAR ID	07	Section no.	E.6.2.1	Date : 15/07/2022
Description of CL				
It has been observed that in the section D.2, the value of Domestic wastewater removal is 131,000 Liters for the current monitoring Period. But as per the evidence provided by PP does not include one entry of the date (22/03/2019) where 13 tons of wastewater was recorded and is not mentioned in the ER sheet "WW Removal Records". PP is requested to address the exclusion of record.				
Project participant response				Date : 20/07/2022
The entry of 22/03/2019 was excluded since MP starts on 12/04/2019, which is after 22/03/2019.				
Documentation provided by project participant				
VVB assessment				Date: 01/08/2022
The entry of 13 tons of wastewater dated (22/03/2019) in Section D.2 found to be prior to start date of monitoring period (12/04/2019), Hence VVB closed the finding. Closed.				

Table 4. FAR from this verification

FAR ID	XX	Section No.		Date : DD/MM/YYYY
Description of FAR				
Project participant response				Date : DD/MM/YYYY
Documentation provided by project participant				
VVB assessment				Date: DD/MM/YYYY