

TEMPLATE

MONITORING REPORT

PUBLICATION DATE 14.10.2020

VERSION v. 1.1

RELATED SUPPORT - **TEMPLATE GUIDE Monitoring Report v. 1.1**

This document contains the following Sections

Key Project Information

SECTION A - Description of project

SECTION B - Implementation of project

SECTION C - Description of monitoring system applied by the project.

SECTION D - Data and parameters

SECTION E - Calculation of SDG Impacts

SECTION F - Safeguards Reporting

SECTION G - Stakeholder inputs and legal disputes

KEY PROJECT INFORMATION

GS ID (s) of Project (s)	GS576
Title of the project (s) covered by monitoring report	Kuyucak 25.6 MW Wind Farm Project, Turkey
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	0.8
Version number of the monitoring report	0.4
Completion date of the monitoring report	12/12/2023
Date of project design certification	15/04/2011 CP1 16/06/2023 CP2
Date of Last Annual Report	na
Monitoring period number	4 th (1 st of CP2)
Duration of this monitoring period	02/05/2019-01/05/2022 (Both days are included)
Project Representative	Alize Enerji Elektrik Üretim A.Ş. Rüzgar Karbon ve Enerji Danışmanlık Sanayi Ticaret Limited Şirketi
Host Country	Turkey
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Methodology (ies) applied and version number	ACM0002: Grid connected electricity generation from renewable electricity generation - Version 20.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 7: Affordable and Clean Energy	T: 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix I: 7.2.1 "Renewable energy share in the total final energy consumption	02/05/2019 to 31/12/2019: 43,730.863 01/01/2020 to 31/12/2020: 74,700.324 01/01/2021 to 31/12/2021: 75,833.646 01/01/2022 to 1/05/2022: 24,864.506 Total of 02/05/2019 to 1/05/2022: 219,129.340	MWh
SDG 8: Decent Work and Economic Growth	T: 8.5 By 2030 achieve full and productive employment and decent work for all 8.5.2 Unemployment rate, by sex, age and persons with disabilities	The project provides 8 employees	People
SDG 8: Decent Work and Economic Growth	T: 8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious 8.8.2 Increase in national compliance of labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status	8 people trained on health and safety issues during this monitoring period	All

SDG 13: Climate Action	13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning 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" and following	02/05/2019 to 31/12/2019: 28,372 01/01/2020 to 31/12/2020: 48,465 01/01/2021 to 31/12/2021: 49,200 01/01/2022 to 1/05/2022: 16,132 Total of 02/05/2019 to 1/05/2022: 142,169	tCO ₂ e
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Table 2 – Product Vintages

Start Dates	End Dates	VER
02/05/2019	31/12/2019	28,372
01/01/2020	31/12/2020	48,465
01/01/2021	31/12/2021	49,200
01/01/2022	01/05/2022	16,132

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

The Kuyucak 25.6 MW Wind Farm Project, Turkey, hereafter referred to as the project, involves a grid-connected onshore wind farm project in the Demirtaş village, Kırkağaç-Kuyucak district of Manisa Province. And this Kuyucak 25.6 MW Wind Farm Project, Turkey belongs to Alize Enerji Elektrik Üretim A.Ş.

The project consists of 12 wind turbines with an installed capacity of 2000 kW (E70) each and 2 wind turbines with an installed 800 kW (E44) each. With a total installed power generation capacity of 25.6 MW, the project is estimated to supply grid as 112,763 MWh and 71,578 tCO₂-eq per annum and which total to reduction of 501,047 tCO₂-eq over these first 7-year crediting period according to registered PDD.

The Project aims to generate electricity from wind energy and feed it to the national electricity grid.

The project is estimated to supply grid as 74,006.983 MWh¹ and expected annual emission reductions of the project is approximately 48,015 tCO₂/year during for this 2nd crediting period. The average production is 74,006.983 and it is around 25% lower than estimated value. Therefore, carbon revenues are crucial for the project. The income of the GS VER is very important for the financial performance of the project. The Project Proponent has been granted a 49-year generation license by the Turkish Energy Market Regulatory Authority for the proposed Project under the provisions of Law No. 4628 governing the electricity market in the Republic of Turkey.

The purpose of the project activity is to produce renewable electricity using wind as the power source and to contribute to Turkey is growing electricity demand through a sustainable and low carbon technology. The project displaces the same amount of electricity generated by the grid dominated with fossil fired power plants.

The project activity produces positive environmental and economic benefits through the following aspects:

- Displacing the electricity generated by fossil fuel fired power plants by utilising the renewable resources to avoid environmental pollution and GHG emissions,
- Contributing the economic development of the region by providing sustainable energy resources,
- Increasing the income and local standard of living by providing job opportunities for the local people.

¹ The average value of Alize Kuyucak WPP's electricity generation between 2011 and 2021. (11 years). This is approved by GS during the CP renewal process.

- Production of pillar and other equipment in Turkey indirectly cause the know-how transfer and empower the local industry.

The project area belongs to the Ministry of Environment and the proposed project activity has been the installation of a grid-connected renewable power plant/unit. In the absence of the project activity, the electrical energy would have been delivered to the grid through a mix of existing power generation resources.

The project's capacity was increased to 50.1 MW in 2017 as added 24.5 MW capacity extension with 9 turbines with 5 of them each 2.3 MW capacity and 4 of them each 2.35 MW capacity. The capacity addition has not added as GS project because of delay timeline of one-year rules of Gold Standard. Accordingly, PP can use only 25.6 MW capacity's electricity generation for the purpose of emission reduction calculations. For this, the ratio between the electricity generations of 25.6 MW and of 50.1 MW capacities; namely, the ratio between the actual electricity generation of the initial (existing) capacity against the electricity generation of the total capacity has been calculated as everydetail can be seen in ER excel calculation sheet.

Formulation: The following equation has been used to calculate the the quantity of net electricity generation supplied to the grid by the project plant that has been added under the project activity:

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

Where:

$EG_{PJ,y}$ = Design Certified Quantity of net electricity generation supplied to the grid in year y by the project plant/units that has been used under the 25.6 MW project activity (MWh/yr)

$EG_{facility,y}$ =Quantity of total net electricity generation supplied to the grid in year y by the facility [the Project Activity's existing capacity (50.1 MW) and capacity addition (24.5MW)] and measured by the TEİAŞ_y meters (MWh/yr)

$EG_{RATIO,y}$ =Ratio between electricity generation of the plans/units of the Project Activity (25.6MW) and the total gross generation of the 50.1MW facility in year y (%) calculated as per SCADA.

The ratio value has been calculated for each month and transparently be shown for each monitoring period. It is expected that monthly ratio values are not significantly different from each other. The ratio value is examined for any statistically significant deviation.

The net electricity supplied by the Wind Farm (including the existing and additional capacity) to the national grid is measured by TEIAS₂ metering devices. As well, the electricity generation of each wind energy converter (wind turbine) under Kuyucak 25.6 MW Wind Farm Project (the existing capacity and added capacity) has been measured continuously with a SCADA system. Using the SCADA data, the total amount of electricity generated from the existing capacity under the proposed project activity and the added capacity has been measured on monthly basis and has been used to calculate the ratio of electricity generation. The PP can use the ratio for monitoring.

PP has applied to GS and taken approval for verification between 02/05/2019 and 01/05/2022 (PP has made on site visit with VVB on 2/05/2022 and second crediting period start on 11/11/2017 and finish 10/11/2024. PP cannot claim credits between 11/11/2017 and 02/05/2019.

- The project applies methodology ACM0002 Version 20.0, which is an approved methodology under Gold Standard.
- The project type is wind which is an eligible project type as it is in accordance with Eligible Project Types & Scope under Renewable Energy Activity Requirements.
- The project activity results in displacement of electricity from thermal power stations while contributing to sustainable development of Turkey. Hence, the project contributes to the Gold Standard vision and mission.
- Wind is an approved project type and does not require approval from Gold Standard.
- This project activity is not associated with geo-engineering or energy generated from fossil fuel or nuclear, fossil fuel switch, nor does it enhance or prolongs such energy generation.

Time schedule of the project activity may be seen in table 3 as followed:

Table 3: Time schedule of the project activity

Event	Actual / Expected	Date
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Commissioning date of the T8,T12,T13 and T14 wind turbines (8 MW=4*2.0 MW)*	Actual	11/11/2010
Commissioning date of the T1 to and T11 wind turbines (17.6 MW=8*2.0 MW+2*0.8 MW)*	Actual	9/12/2010
Start and end of first crediting period (CP1)	Actual	11/11/2010-10/11/2017
Gold Standards registration of Project Activity	Actual	15/04/2011
First Monitoring Period	Actual	11/11/2010-31/12/2011
Second Monitoring Period	Actual	01/01/2012-31/12/2012
Third Monitoring Period	Actual	01/01/2013-31/03/2014
Commissioning date of the T19to T24 wind turbines (15,1 MW=12*0.3 MW +5*2,3 MW)	Actual	12/09/2015
Commissioning date of the T15 and T18 wind turbines (4,7 MW=2*2.35 MW)	Actual	27/07/2017
Commissioning date of the T16 and T17 wind turbines (4,7 MW=2*2.35 MW)	Actual	25/08/2017
Start and end of Second crediting period (CP2)	Actual	11/11/2017-10/11/2024*
Fourth Monitoring Period	Actual	02/05/2019-01/05/2022

*Registered turbines for CP1 and CP2.

A.2. Location of project

The Kuyucak 25.6 MW Wind Farm Project, Turkey is located in Demirtaş village, Kırkağaç-Kuyucak district of Manisa province, Marmara Region. The geographical location of the Project covers an area around 39° 17' N, 27° 53' E approximately. Please see below the maps showing the location of the project activity in Turkey

Figure 1 The location of the project activity in Turkey

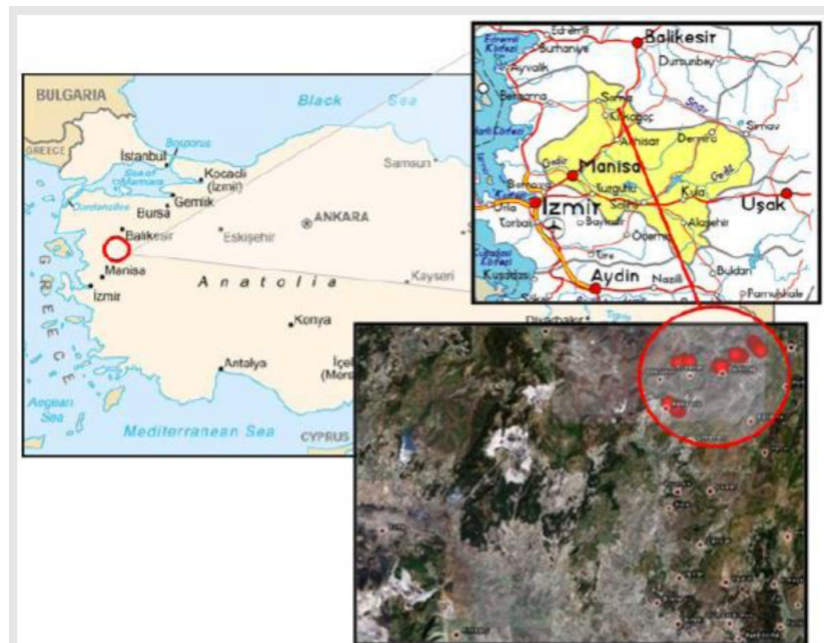
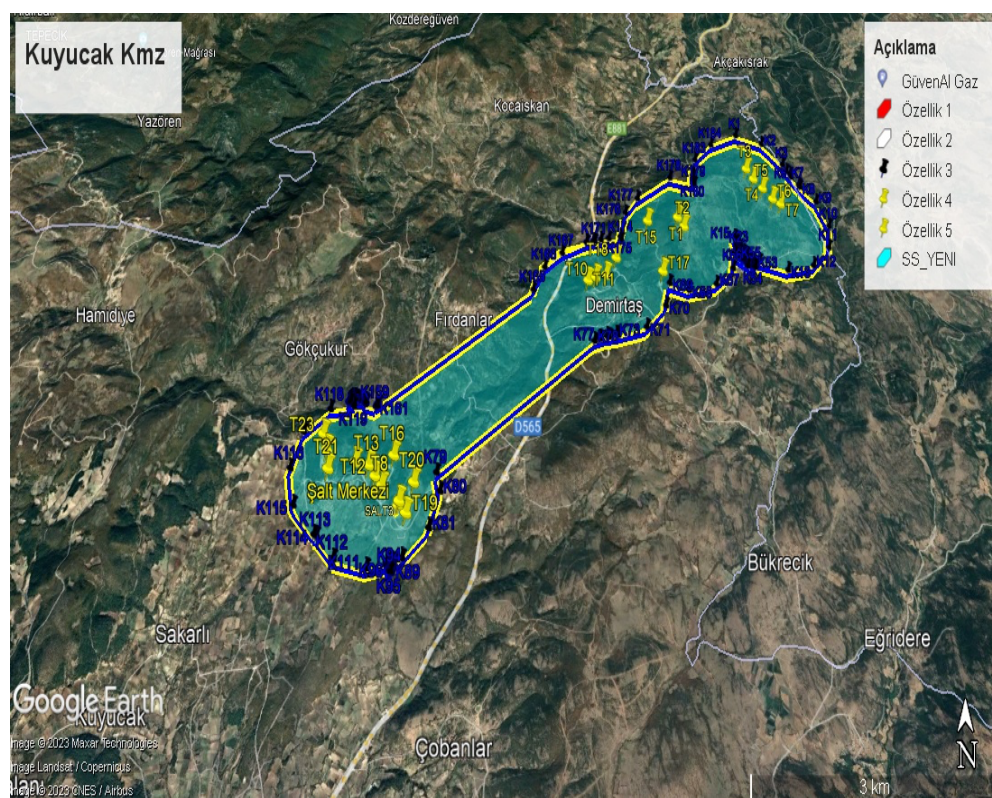


Figure 2 The kmz map of Kuyucak WPP with indicating turbine



The nearest place is Demirtaş village 1.5 km from Kuyucak 25.6 MW Wind Farm Project.

Table 4: Registered Turbine Coordinates²

	E	N	E	N
Turbine Nr	UTM Coordinates		Longitude / Latitude	
T1	580524	4351573	27° 56' 02"	39° 18' 35"
T2	580612	4351382	27° 56' 06"	39° 18' 29"
T3	581936	4352619	27° 57' 02"	39° 18' 09"
T4	582033	4352407	27° 57' 05"	39° 19' 02"
T5	582174	4352226	27° 57' 12"	39° 18' 56"
T6	582315	4352010	27° 57' 17"	39° 18' 49"
T7	582446	4351920	27° 57' 23"	39° 18' 46"
T8	575661	4347256	27° 52' 38"	39° 16' 17"
T9	579189	4350599	27° 55' 06"	39° 18' 04"
T10	579009	4350576	27° 54' 59"	39° 18' 03"
T11	578880	4350549	27° 54' 53"	39° 18' 03"
T12	575551	4347387	27° 52' 33"	39° 16' 21"
T13	575434	4347540	27° 52' 28"	39° 16' 26"
T14	575230	4347589	27° 52' 20"	39° 16' 28"

Please find below the 9 turbine coordinates which is unregistered turbine for the Kuyucak 25.6 MW WPP for CP2. The electricity generation values of these turbines have not been included during the monitoring periods of CP2.

Table 5: Unregistered Turbine Coordinates for CP2

T15	580007	4351633
T16	575795	4347704
T17	580170	4350635
T18	579394	4350964
T19	576045	4346915
T20	576127	4347321
T21	574833	4347489
T22	574784	4347743
T23	574699	4347960

A.3. Reference of applied methodology

The project applies CDM-EB approved "ACM0002: Grid-connected electricity generation from renewable sources - Version 20.0"³

² Generation License

³

https://cdm.unfccc.int/filestorage/A/G/0/AG07ZJO3EXD42LT5YV9HR16M8KINPO/EB105_repan03_ACM0002.pdf?t=cG58cXR0YmdpfDBPAQ9cKPO77zmZZiIlanUw

The methodology refers to:

- "Tool for the demonstration and assessment of additionality", Version 07.0.⁴
- "Combined tool to identify the baseline scenario and demonstrate additionality", Version 07.0⁵
- "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", Version 03.0⁶
- "Tool to calculate the emission factor for an electricity system", Version 07.0.⁷
- "Tool to determine the remaining lifetime of equipment", Version 01⁸

A.4. Crediting period of project

Type of crediting period: Renewable

Date of the first crediting period: 11/11/2010-10/11/2017

Date of the second crediting period: 11/11/2017-10/11/2024

Length: 7 years and 0 months, which is planned to be renewed. (21 years) This is second crediting period.

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The Project Activity involves the generation of renewable energy from wind. It thereby displaces grid electricity that is partly generated from fossil fuel fired power plants. The wind-driven blades are connected to an electricity generator, which produces electrical energy and supplies it to the grid without storage. Within the scope of the project, all precautions have been taken for the environment during the design phase and the project has been implemented in line with the environmental law and related regulations.

⁴ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁵ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v7.0.pdf>

⁶ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v3.pdf>

⁷ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

⁸ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf>

Enercon, a German turbine manufacturer, has been selected as technology provider due to the quality of its products in terms of high reliability, grid friendliness, low maintenance requirements and low noise levels. The turbines have been delivered from Germany to the project site. Blades and masts have been produced in Turkey.

The Project have been composed of gearless, variable speed, variable pitch control wind turbines with a total installed capacity of 25.6 MW. The Project includes 12 units of E70 turbines with an output of 2000 kW and a rotor diameter of 71 m and 2 E44 unit with an output of 800 kW.

This Kuyucak WPP has been connected to the 154 kV high-voltage transmission lines to the Soma transformer station. The metering has been done at substation before electricity is fed into the grid.

The Project reduces greenhouse gas emissions by displacing electricity from grid connected fossil fuel fired power plants, thereby contributing to climate change mitigation along with other environmental benefits. The lifetime of the project activity has been supposed as 25 years.

The main equipment used in the Project is wind turbines with the following specifications.

Table 5: Technical specifications of the Enercon E44- E70 turbines⁹

Parameter	Value
Rated Power	800 kW-E 44
Rotor Diameter	44 m
Number of blades	3
Swept Area	1,521 m ²

⁹ <https://en.wind-turbine-models.com/turbines/827-enercon-e-70-e4-2.000>
https://www.enercon.de/fileadmin/Redakteur/Medien-Portal/broschueren/EC_Datenblaetter_WEA_en_082019.pdf

Rotational speed	14.0 - 33.1 rpm
Cut in wind speed	2.5 m/s
Cut out wind speed	34 m/s
Remote monitoring:	Enercon SCADA

Parameter	Value
Rated Power	2,000 kW-E 70
Rotor Diameter	71 m
Number of blades	3
Swept Area	3,959 m ²
Rotational speed	6.0 - 20.5 rpm
Cut in wind speed	2.5 m/s
Cut out wind speed	34 m/s
Remote monitoring	Enercon SCADA

The line diagram shows the connection points of Kuyucak 25.6 MW Wind Farm Project with the national grid. The wind farm is connected to Soma-B transformer station on 154 kV high voltage level. Two electricity meters are installed at Kuyucak 25.6 Wind Farm project. These meters are working in parallel.

B.1.1 Forward Action Requests

FAR # 1: In-line with GS4GG Principles and Requirements, delay in the completion of re-validation beyond the last date of current certification cycle shall result in a reduction of any issuance of Certified Products and/or Impact Statements available during following certification cycle. Thus, PD cannot claim credits during the delay period from 10/11/2017 to 08/10/2022. At the time of performance review for second crediting period, VVB shall check the start date of monitoring period in accordance to the date of the onsite verification date.

PP Response # 1: PP has made an on-site visit physically with VVB on 02/05/2022 and PP can claim the credits between 02/05/2019 to 01/05/2022 and continue to issue until 10/11/2024 since PP has obtained approval by GS and SC team with deviation form it has included the rule of issuance of the VERs 3 years beginning of on-site visit 02/05/2022 from the 2nd crediting renewal period rule.

B.2. Post-Design Certification changes

B.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline

There is no request for deviation applied during this monitoring period

B.2.2. Corrections

There are no corrections applied during this monitoring period.

B.2.3. Changes to start date of crediting period

There are no changes to start date of crediting period.

B.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

There are no permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline.

B.2.5. Changes to project design of approved project

During this monitoring period, the following changes have been occurred in meters.

Changes in meters

The primary meter has changed as with 8923676 serial number on 27/10/2019 instead of 401681 with serial number and secondary meter has changed as with 8923677 serial number on 14/12/2019 instead of 401680 with serial number. All official documents related with meters have been provided to the VVB during the site visit.

OLD meters

Serial Number	Device Model	Manufacturer	Date of Installation	Accuracy
401681 Main-Primary	A1500	ELSTER	12/11/2010	0.2s active 2 re-active
401680 Back Up- Secondary	A1500	ELSTER	12/11/2010	0.2s active 2 re-active

NEW meters

Serial Number	Device Model	Manufacturer	Date of Installation	Accuracy
8923676 Main-Primary	LZQJ-XC- P2FB	EMH	27/10/2019	0.2s active 0.5s re-active
8923677 Back Up- Secondary	LZQJ-XC- P2FB	EMH	14/12/2019	0.2s active 0.5s re-active

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

According to the Turkish Law and Regulations, the methods of monitoring the net electricity fed to the grid and quality control and assures are explained below:

Data processing and archiving: Monitoring data is collected in accordance with the agreement done between the project owner and TEIAS Electricity Distribution Company (TEIAS) which provides the infrastructure for the connection to the national grid. The metering system is defined in the agreement as two groups: main meter and secondary meter. The design of the metering system is checked and approved by TEIAS before commissioning of the plant. The technical specifications of the power meters should be in line with Measure and Metering Devices Regulation by Ministry of Industry and Trade. In addition, the Communique for Power Meters announced by Energy Market Regulations Authority (EMRA) requires all meters to be in line with either Turkish Standards Institution or International Electro Technical Commissions Standards. The meters are placed at the point the electricity is fed to the grid and sealed on behalf of both parties. This prevents any intervention and assures the accuracy and quality of the measurements. All requirements and specifications of the meters have been done according to Communique on the counter to be used in the Electricity Market by Energy Market Regulatory Authority on 22/04/2011. The Enercon SCADA system also stores various data (e.g. electricity generated by each turbine, energy supplied etc.) electronically.

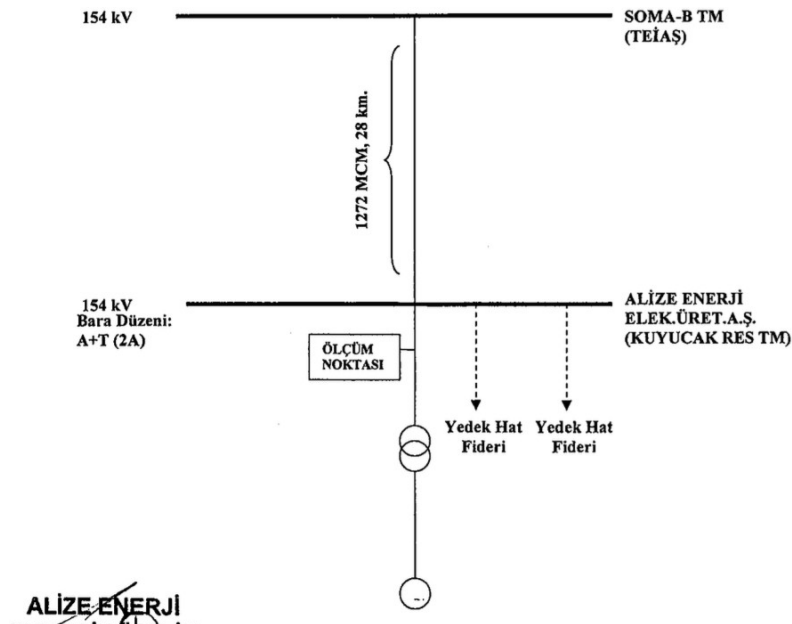
Data has been stored electronically, during the crediting period and at least two years after the last issuance of credits for the wind farm project activity in the concerning crediting period. The project participants also archived a hardcopy of meter reading protocols, scanned them, and stored them. The invoices are kept by the Project owner

as hardcopies. Furthermore, the EPIAS system stores the reports electronically, which is accessible to the Project owner whenever necessary.

The project's capacity was increased to 50.1 MW from 25.6 MW but monitoring is very easy. The project's capacity was increased to 50.1 MW in 2017 as a capacity extension. Accordingly, PP can use only 25.6 MW capacity's electricity generation for the purpose of emission reduction calculations. For this, the ratio between the electricity generations of 25.6 MW and of 50.1 MW capacities; namely, the ratio between the actual electricity generation of the initial (existing) capacity against the electricity generation of the total capacity has been calculated.

The net electricity supplied by the Wind Farm (including the existing and additional capacity) to the national grid is measured by TEİAŞ metering devices. As well, the electricity generation of each wind energy converter (wind turbine) under Kuyucak 25.6 MW Wind Farm Project (the existing capacity and added capacity) has been measured continuously with a SCADA system. Using the SCADA data, the total amount of electricity generated from the existing capacity under the proposed project activity and the added capacity has been measured on monthly basis and has been used to calculate the ratio of electricity generation. The PP can use the ratio for monitoring. By applying this ratio to net electricity amount supplied to the national grid, the emission reduction project GS576 under the project activity has been calculated. The following figure represents the line diagram of the project activity:

Figure 3: Line Diagram of Kuyucak 25.6 MW Wind Farm Project

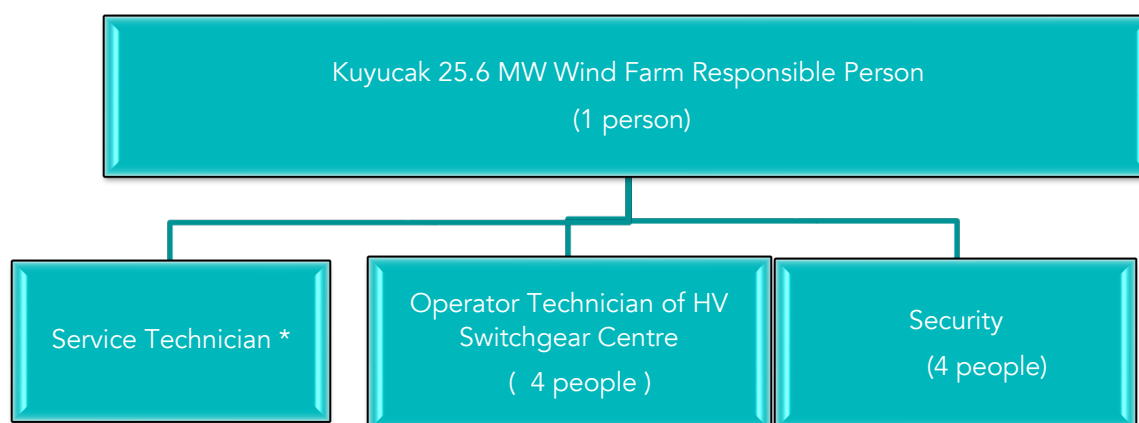


QA/QC procedures: The main and secondary meter readings are recorded monthly and cross-checked whether calibration is required. The capacity of the transmission line connected is to 154 kV, the accuracy class for power meters have been defined in the Communiqué for Power Meters. The calibration frequency of the meters is 10 years. It is under the responsibility of TEIAS. Since TEIAS meters are sealed by TEIAS, the project proponent cannot intervene with the devices.²⁷ The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. Data measured by meters have been crosschecked with the EPIAS records.

Roles and responsibilities: The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the project proponent. PP proposed the following structure for data monitoring, collection, data archiving and calibration of equipment's for this project activity.

Plant engineer is responsible for the information flow and monitoring procedures in the name of the Project owner. These responsibilities include proper implementation of the monitoring plan, ensuring the information flow between the Project owner company and the VVB and management of the monitoring and verification procedures. The Electrical Engineer of Kuyucak WPP, responsible for monitoring issues on site.

The internal control procedures maintain the reliability and accuracy in the data transfer and calculations. The plant personal records the data on regular basis from both meters and compares the values for consistency. The responsible engineer performs regular checks of this procedure each month and controls the monthly data of main and second meters. If any difference occurs between the two meters, TEIAS has to be informed for further actions. Reliability and accuracy of monthly values is reached by comparative readings both from the project participant and TEIAS, where high accuracy is guaranteed and needed by the requirements of billing purposes.



*The Service Technician can be changed according to their work schedule. And Alize Enerji Elektrik Üretim A.Ş. has only responsible of wind farm electrical engineer, HV Switchgear Operators, Security personals and forest officer. (8 people).

SECTION D. DATA AND PARAMETERS

D.1. Data and parameters fixed ex ante or at renewal of crediting period

I: 7.2.1 "Renewable energy share in the total final energy consumption"

Data/parameter	$EF_{CO_2,i,y}$
Unit	tCO ₂ /MWh
Description	Combined margin CO2 emission factor for the project electricity system in year y
Source of data	Republic of Turkey Ministry of Energy in Emission Factor 2020
Value(s) applied	0.6488 ¹⁰
Choice of data or Measurement methods and procedures	Calculate baseline emission
Purpose of data	Calculation of baseline emissions - to demonstrate contribution to SDG7- 7.2.1 Renewable energy share in the total final energy consumption

¹⁰<https://enerji.gov.tr//Media/Dizin/EVCED/tr/ÇevreVeİklim/İklimDeğişikliği/TUESEmisyonFktr/Belgeler/Bform2020.pdf>

D.2 Data and parameters monitored

SDG 7: Affordable and Clean Energy

7.2.1 Renewable energy share in the total final energy consumption

Data / Parameter	EG _{Pj, grid,y}																			
Unit	MWh/yr																			
Description	Quantity of electricity generated and supplied by the project power plant to the grid in year y																			
Source of data	EPIAS Records (Same with Electricity Meter)																			
Value(s) applied	Net electricity generation between 02/05/2019-31/12/2019: 43,730.863 MWh Net electricity generation between 01/01/2020-31/12/2020: 74,700.324 MWh Net electricity generation between 01/01/2021-31/12/2021: 75,883.646 MWh Net electricity generation between 01/01/2022-1/05/2022: 25,864.506 MWh Total net electricity generation between 02/05/2019-1/05/2022: 219,129.340 MWh																			
Measurement methods and procedures	The net electricity generation supplied to the grid has been measured continuously by TEAIS meters (both main and spare) and recorded monthly.																			
Monitoring frequency	Continuous measurement and at least monthly recording. (Automatic meter reading system-OSOS) OLD METERS <table border="1"> <tr> <td></td><td>Electricity Meter (Primary)</td><td>Electricity Meter (Secondary)</td></tr> <tr> <td>Manufacturer</td><td>ELSTER</td><td>ELSTER</td></tr> <tr> <td>Model</td><td>A 1500</td><td>A 1500</td></tr> <tr> <td>Serial number</td><td>401681</td><td>401680</td></tr> <tr> <td>Date of installation</td><td>12/11/2010</td><td>12/11/2010</td></tr> <tr> <td>Date of last test by TEIAS</td><td>22/04/2017</td><td>22/04/2017</td></tr> </table>			Electricity Meter (Primary)	Electricity Meter (Secondary)	Manufacturer	ELSTER	ELSTER	Model	A 1500	A 1500	Serial number	401681	401680	Date of installation	12/11/2010	12/11/2010	Date of last test by TEIAS	22/04/2017	22/04/2017
	Electricity Meter (Primary)	Electricity Meter (Secondary)																		
Manufacturer	ELSTER	ELSTER																		
Model	A 1500	A 1500																		
Serial number	401681	401680																		
Date of installation	12/11/2010	12/11/2010																		
Date of last test by TEIAS	22/04/2017	22/04/2017																		

The accuracy of meters	0.2s active 2 re-active	0.2s active 2 re-active
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The primary meter has changed as with 8923676 serial number on 27/10/2019 and secondary meter has changed as with 8923677 serial number on 14/12/2019. All official documents related with meters have been provided to the VVB during the site visit.

CURRENT METERS

	Electricity Meter(Primary)	Electricity Meter (Secondary)
Manufacturer	EMH	EMH
Model	LZQJ-XC-P2FB	LZQJ-XC-P2FB
Serial number	8923676	8923677
Date of installation	27/10/2019	14/12/2019
Date of initial calibration	20/08/2019	20/08/2019
Date of last test by TEIAS	07/08/2021	07/08/2021
The accuracy of meters	0.2s active 0.5s re-active	0.2s active 0.5s re-active

Calibration frequency: According to the Article 9 of the relevant regulation , periodical inspections of “gauges for electric, water, coal gas, natural gas and, current and voltage measuring transformers has been made once in 10 years”¹¹. This is in line with the monitoring plan and national requirements. TEIAS is deciding when to carry out the next calibration. The Project owner has no control over or access to the measurement devices and is not entitled to perform any type of maintenance or calibration.

Date of initial calibration: The calibration of the monitoring equipment was carried out according to the information provided in the PDD. The PDD mainly includes the following obligation for the calibration of the appropriate meters:

¹¹ Measurement and Measuring Tools Inspection Regulation”, Date: 24/07/1994, Official Gazette Number: 22000 <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6381&MevzuatTur=7&MevzuatTertip=5>

	"TEIAS is responsible for calibration and maintenance of the devices. If any difference occurs between primary and secondary device TEIAS performs necessary calibration"
QA/QC procedures	- Measurements are undertaken using energy meters. - Concerning metering system accuracy, project participant has to comply with relevant national legislation. The project must ensure that the metering devices are in line with the technical requirements which are set out by the Communiqué for Metering Devices to be used in the Electricity Market¹², which describes the minimum accuracy requirement the metering devices have to fulfil, which are categorized according to the installed capacity. - Maintenance and calibration of TEIAS meters have been carried out according to the System Usage Agreement. Since meters are sealed by TEIAS the project proponent cannot intervene with the devices¹³. - The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. Data measured by meters have been crosschecked with the EPIAS records.
Purpose of data	Baseline/emission reductions calculations
Additional comment	-

SDG 8: Decent Work and Economic Growth

8.5.2. Unemployment rate, by sex, age and persons with disabilities

Data / Parameter	Number of employment generation
Unit	Number
Description	Number of people employed directly due to the project activity
Source of data	SGK Records
Value(s) applied	The project provides 8 employments

¹² [Measurement and Measuring Tools Inspection Regulation", Date: 24/07/1994, Official Gazette Number: 22000](https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6381&MevzuatTur=7&MevzuatTertip=5)
<https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6381&MevzuatTur=7&MevzuatTertip=5>

¹³ <http://www.mevzuat.gov.tr/MevzuatMetin/1.5.3516.doc>

Measurement methods and procedures	The total number of persons working in the plant would be calculated based on the SGK Records
Monitoring frequency	Once for each monitoring period
QA/QC procedures	Social insurance registries of employees have been provided annually.
Purpose of data	-
Additional comment	-

Relevant SDG Indicator	8.8.2 Increase in national compliance of labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status.
Data / Parameter	Health and Safety Training Records
Unit	Number of people per monitoring period
Description	Number of people trained on health and safety issues during per monitoring period
Source of data	Training Records or Certificates
Value(s) applied	The project has been provided 1 health and safety training to employees per year
Measurement methods and procedures	The total number of Health and Safety training based on Training Records or Certificates
Monitoring frequency	Once for period each monitoring
QA/QC procedures	Training records or certificates have been provided
Purpose of data	Monitoring the health and safety trainings of employees to demonstrate contribution to SDG8-8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

Additional
comment

n.a

Name/Surname	Position	Training given by	Subject	Training Date	Record	Content
MURAT ANDIÇ	High voltage Switch gear operators	Altınbaşak OSGB	General occupational health and safety	16.07.2019 14.07.2020 06.02.2021	Certificate or Attendance List	Basic Training about General Occupational Health and Safety
HÜSEYİN KOCABAŞ	High voltage Switch gear operators	Altınbaşak OSGB	General occupational health and safety	13.03.2019 14.07.2020 06.02.2021	Certificate or Attendance List	Basic Training about General Occupational Health and Safety
AHMET TOPAÇ	High voltage Switch gear operators	Altınbaşak OSGB	General occupational health and safety	16.07.2019 14.07.2020 4-7.09.2021	Certificate or Attendance List	Basic Training about General Occupational Health and Safety
HASAN UYAN	High voltage Switch gear operators	Altınbaşak OSGB	General occupational health and safety	13.03.2019 14.07.2020 06.02.2021	Certificate or Attendance List	Basic Training about General Occupational Health and Safety
MUSTAFA SEZGİN	Security Personnel	Altınbaşak OSGB	General occupational	13.03.2019 14.07.2020 06.02.2021	Certificate or	Basic Training about

			health and safety		Attendance List	General Occupational Health and Safety
YALÇIN ARTIŞ	Security Personnel	Altınbaşak OSGB	General occupational health and safety	16.07.2019 14.07.2020 4-7.09.2021	Certificate or Attendance List	Basic Training about General Occupational Health and Safety
İLYAS BAYIK	Security Personnel	Altınbaşak OSGB	General occupational health and safety	16.07.2019 14.07.2020 06.02.2021	Certificate or Attendance List	Basic Training about General Occupational Health and Safety
VEFA KENT	Security Personnel	Altınbaşak OSGB	General occupational health and safety	13.03.2019 14.07.2020 06.02.2021	Certificate or Attendance List	Basic Training about General Occupational Health and Safety

SDG 13 Climate Action

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” and following

Data / Parameter	ER _y
Unit	tCO ₂ /y
Description	Emission Reductions in year y (t CO ₂ /yr) As per ACM0002 V 20.0, the baseline emissions (emission reductions) are calculated as the net electricity generated by

	the project activity, multiplied with the baseline emission factor for the project grid.
Source of data	Measured and calculated. (The emission reduction value the emission factor of the grid to which the project exports electricity (0.6488 tCO ₂ /MWh) and net electricity generated)
Value(s) applied	2019: 28,372 tCO ₂ 2020: 48,465 tCO ₂ 2021: 49,200 tCO ₂ 2022: 16,132 tCO ₂ Total: 142,169 tCO ₂
Measurement methods and procedures	Please see B.6.2 for more detailed description of the monitoring plan.
Monitoring frequency	Once for each monitoring period
QA/QC procedures	Republic of Turkey Ministry of Energy in Emission Factor 2020 ¹⁴
Purpose of data	-
Additional comment	-

D.3. Comparison of monitored parameters with last monitoring period

Not applicable

D.4. Implementation of sampling plan

Not applicable

SECTION E. CALCULATION OF SDG IMPACTS

E.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

SDG 7: Affordable and Clean Energy

¹⁴

<https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/TUESEmisyonFktr/Belgeler/Bform2020.pdf>

The baseline for the project is no project, thus leading to generation in the relevant grid which is dominated by fossil fuel. The clean energy generated by the project is calculated based on the amount of electricity generated by the project per annum.

Net Generation (MWh) = Electricity Supplied to the Grid (MWh)– Electricity Consumption from the Grid (MWh)

The net generation and internal consumption identified and approved by authorized EPIAS.

SDG 8: Decent Work and Economic Growth

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project provides employment to 8 people during the operation phase.

The project contributes to the following indicators 8.5.2 “Unemployment rate, by sex, age and persons with disabilities” and following target: “8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value”

The target has been monitored by the number of full-time employees with the SGK records during the verification process. Because of the social conditions of the project area, employment of woman and persons with disabilities is not possible.

SDG13: Climate Action:

The project contributes to the following indicators 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” and following target 13.3 “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning”

The baseline emissions are calculated as follows:

$$BE_y = EG_y * EF_{CO_2,i,y}$$

Where:

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

$EG_{facility,y}$ = Net quantity of electricity generated and delivered to the grid by power facility in year y (MWh)

$EF_{CO_2,i,y}$ = CO₂ emission factor of fuel type i in year y (t CO₂/MWh)

Hence,

$$BE_y = 219,129.340 \text{ MWh} \times 0.6488 \text{ tCO}_2/\text{MWh}$$

Vintage	EG Net electricity supplied to the grid [MWh]	EF [tCO₂/MWh]	Baseline emission: BE = EG * EF [t CO₂-eq]
2019 (02/05/2019-31/12/2019)	43,730.863	0.6488	28.372
2020	74,700.324	0.6488	48,465
2021	75,883.646	0.6488	49,200
2022 (01/01/2022-01/05/2022)	24,864.506	0.6488	16,132
TOTAL (02/05/2019-01/05/2022)	219,129.340	0.6488	142

E.2. Calculation of project value or estimation of project situation of each SDG Impact

SDG 7: Affordable and Clean Energy

The baseline for the project is no project, thus leading to generation in the relevant grid which is dominated by fossil fuel. The clean energy generated by the project is calculated based on the amount of electricity generated by the project per annum.

Vintage	(A) Electricity supplied to the grid [MWh]	(B) Electricity consumption from the grid [MWh]	(C) = (A) - (B) EG Net electricity supplied to the grid [MWh]
2019 (02/05/2019-31/12/2019)	43,746.470	15,607	43,730.863
2020	74,723.296	23,390	74,700.324
2021	75,849.517	15,871	75,883.646
2022 (01/01/2022-01/05/2022)	24,869.140	4,633	24,864.506
TOTAL (02/05/2019-01/05/2022)	219,188.841	59,501	219,129.340

SDG 8: Decent Work and Economic Growth

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project has been provided employment of 8 people.

This helps to achieve SDG 8 with indicators 8.5.2 "Unemployment rate, by sex, age and persons with disabilities" and following target: 8.5 "By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value". 8 people has taken 1 health and safety training per year.

SDG 13 Climate Action

The project contributes to the following indicators 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" and following target 13.3. Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

E.3. Calculation of leakage

Leakage emission is considered as "0" as suggested in ACM0002 Version 20.0

E.4. Calculation of net benefits or direct calculation for each SDG Impact

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
7	Affordable and Clean Energy	0	219,129.340 MWh	219,129.340 MWh
8	Decent Work and Economic Growth	0	8 people employed	8 people employed
8	Decent Work and Economic Growth	0	All employed has taken 1 Health and Safety Training per year	All employed has taken 1 Health and Safety Training per year
13	Climate Action	142,169 tCO2	0	142,169 tCO2

E.5. Comparison of actual SDG Impacts with estimates in approved PDD

SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values achieved during this monitoring period
7	222,020.949 MWh	219,129.340 MWh
8	8 people employed	8 people employed

8	All employed has been trained during the monitoring period	All employed has taken 1 Health and Safety Training
13	144,044 tCO ₂	142,169 tCO ₂

E.5.1. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period

The expected electricity generation value is 222,020.949 MWh and emission reduction are 144,044 tCO₂ according to registered PDD for 2nd crediting period for this monitoring period. PP has monitored 1095 days (between 02/05/2019 and 01/05/2022) and so PP has calculated 142,169 tCO₂ emission reduction from 219,129.340 MWh electricity generation of 4th monitoring period.

E.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

The monitoring period covers the approximately three years operation.

The comparison shows that the actual emission reduction is 142,169 tCO₂ a lower (approximately 1.30%) than the expectation 144,044 tCO₂ according to the registered PDD. And the comparison shows that the actual net electricity generation is 219,129.340 MWh a lower (approximately 1.30%) than the expectation generation 222,020.949 MWh according to the registered PDD of 2nd crediting period.

SECTION F. SAFEGUARDS REPORTING

There is no negative impact because of project related with Safeguarding Principles Assessment during this monitoring report. The project takes a precautionary approach regarding environmental challenges and is not complicit in practices contrary to the precautionary principle.

Relevant SDG Indicator/Safeguarding Principle	Safeguarding Principle 9.4: Release of pollutants
Data / Parameter	Water Quality and Quantity (Disposal of the waste water)
Unit	N/A
Description	During the construction and operation phases, domestic wastewater produced by workers collected in impermeable septic tanks. This wastewater are collected by vacuum trucks of the Municipality of Manisa and disposed according to Regulation on Waste Water Control.

Source of data	Records of transfer of waste water from power plant by vacuum truck
Value(s) applied	4 invoices (official records) of transfer of wastewater from power plant by vacuum truck (19/03/2019;10/10/2019; 28/05/2020;17/05/2021)
Measurement methods and procedures	N/A
Monitoring frequency	Once for each monitoring period
QA/QC procedures	N/A
Purpose of data	To monitor compliance to Safeguarding Principle 9.4 (Release of pollutants)
Additional comment	-

Relevant SDG Indicator/Safeguarding Principle	Principle 9.10 High Conservation Value Areas and Critical Habitats
Data / Parameter	Birds observation
Unit	N/A
Description	Ensuring that the project creates no disturbance to the regional habitat
Source of data	Regular site vetting for bird/bat nests and carcasses and recording on logbook by appointed personnel
Value(s) applied	There is no bird/bat nests and carcasses and recording on logbook by appointed personnel until now
Measurement methods and procedures	Observations around the project area have been done for monitoring birds and carcass
Monitoring frequency	Once for each monitoring period
QA/QC procedures	Records of regular observations have been kept
Purpose of data	To monitor compliance to Safeguarding Principle 9.10
Additional comment	-

SDG 3 Principle has already assessed as SDG8, so there is no need to add this principle in this section of MR.

Principles	Way of Monitoring-When / Mitigation Measures added to the Monitoring Plan	Chosen Data/ Parameter
Principle 1- Human Rights	Not Required	Not Required
Principle 2- Gender Equality	Not Required	Not Required
Principle 3-Community Health, Safety and Working Conditions	Not Required	Not Required
Principle 4-Cultural Heritage, Indigenous Peoples, Displacement and Resettlement	Not Required	Not Required
Principle 4.1- Sites of Cultural and Historical Heritage	Not Required	Not Required
Principle 4.2 Forced Eviction and Displacement	Not Required	Not Required
Principle 4.2 Forced Eviction and Displacement	Not Required	Not Required
Principle 4.3 Land Tenure and Other Rights	Not Required	Not Required
Principle 5. Corruption	Not Required	Not Required
Principle 6.1 Labour Rights	Not Required	Not Required
Principle 6.2 Negative Economic Consequences	Not Required	Not Required
Principle 7.1 Emissions	Not Required	Not Required
Principle 7.2 Energy Supply	Not Required	Not Required
Principle 8.1 Impact on Natural Water Patterns/Flows	Not Required	Not Required
Principle 8.2 Erosion and/or Water Body Instability	Not Required	Not Required
Principle 9.1 Landscape Modification and Soil	Not Required	Not Required
Principle 9.2 Vulnerability to Natural Disaster	Not Required	Not Required
Principle 9.3 Genetic Resources	Not Required	Not Required
Principle 9.4 Release of pollutants	During the operation phases, domestic wastewater	Water Quality and Quantity (Disposal of

	produced by workers collected in impermeable septic tanks. This wastewater is collected by vacuum trucks of the Municipality of Balikesir and disposed according to Regulation on Wastewater Control.	the waste water) /Once for period each monitoring
Principle 9.5 Hazardous and Non-hazardous Waste	Not Required	Not Required
Principle 9.6 Pesticides & Fertilisers	Not Required	Not Required
Principle 9.7 Harvesting of Forests	Not Required	Not Required
Principle 9.8 Food	Not Required	Not Required
Principle 9.9 Animal husbandry	Not Required	Not Required
Principle 9.10 High Conservation Value Areas and Critical Habitats	Observations around the project area have been done for monitoring birds and carcass	Birds Observation/Once for period each monitoring
Principle 9.11 Endangered Species	Not Required	Not Required

SECTION G. STAKEHOLDER INPUTS AND LEGAL DISPUTES

G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations

This is the fourth monitoring period and there is no input received via the Continuous Input and Grievance Mechanism during the approximately thirteen years. The PP has meet with the stakeholders and talk with them and there is no negative feedback or comment on the grievance mechanism notebook. Furthermore, the stakeholders reach the PP whenever they want to talk related with the project or request about everything.

G.2. Report on any stakeholder mitigations that were agreed to be monitored

They were agreed no SDG monitoring parameter to be monitored when the PP asked the stakeholder during the 2nd crediting renewal period which has approved on 16/06/2023 by GS. And there are no changes during this 4th monitoring period of this project

G.3. Provide details of any legal contest that has arisen with the project during the monitoring period

No legal contest that has arisen with the project during this monitoring period.

Revision History

Version	Date	Remarks
1.1	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Section for POA monitoring Forward action request section Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on safeguard reporting Clarity on design changes Leakage section added for VER/CER projects Addition of Comparison of monitored parameters with last monitoring period Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.0	10 July 2017	Initial adoption