

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

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KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	GS854
Title of the project (s) covered by monitoring report	Balıkesir Susurluk 45 MW WIND FARM PROJECT
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	8
Version number of the monitoring report	4
Completion date of the monitoring report	30/05/2023
Date of project design certification	25/06/2012
Date of Last Annual Report	28/12/2022
Monitoring period number	3
Duration of this monitoring period	16/09/2021 – 31/03/2023
Project Owner	Eksim Enerji A.Ş.
Project Representative	Sekans Enerji Ltd. Şti.
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 sources", 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
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SDG 7 Ensure access to affordable, reliable, sustainable and modern energy for all	MWh of renewable energy generated	226,060.45	MWh
SDG 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all Decent Work and Economic Growth	Number of employments	19	Employees
SDG 13 Take urgent action to combat climate change and its impacts	Emission reductions	146,531	tCO2

Table 2 – Product Vintages

		Amount Achieved
Start Dates	End Dates	VERs
16/09/2021	31/12/2021	30,928
01/01/2022	31/12/2022	93,511
01/01/2023	31/03/2023	22,092

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

The “Balıkesir Susurluk 45 MW Wind Farm Project”, which is developed by Susurluk¹ Enerji A.Ş. (hereafter referred to as the “project owner”) is a grid-connected onshore wind farm project located in Susurluk District in Balıkesir Province of Turkey.

¹ The company has been grouped under Eksim Enerji A.Ş. by the same project owner. (In the remaining part of the monitoring report, the project owner is expressed as “Eksim Enerji A.Ş.”.)

The purpose of the project is to produce renewable electricity and to contribute to Turkey's growing electricity demand through a sustainable and low carbon technology. The project displaces the same amount of electricity generated by fossil fired power plants; thereby helping reduce the weight of electricity generation by fossil-fired power plants in the national grid. The annual emission reduction estimated by the project is 79,040 tonnes of CO₂eq.

The Project has been implemented and operated by Eksim Enerji A.Ş. The Project aims to generate electricity from wind energy and feed it to the national electricity grid.

The total installed capacity of the project is 45.0 MW. The project activity includes eighteen Nordex branded turbines², each with a capacity of 2.5 MW. Fifteen of the turbines are Nordex N100 and three are Nordex N90 type. The electricity is transmitted to substation Balıkesir SEKA TM, 154 kV and the generated electricity will be supplied to Turkey's national electricity grid.

Table 3 – The start dates of turbines included in capacity

Phase	Date	Capacity	Turbines
1 st	13/02/2011	12.5 MW	T1, T2, T3, T7, T8
2 nd	25/03/2011	10.0 MW	T4, T5, T6, T9
3 rd	22/04/2011	12.5 MW	T13, T14, T15, T16, T18
4 th	20/05/2011	10.0 MW	T10, T11, T12, T17

As the generation license has been revised for capacity extension, eleven turbines were added to the project on 16/07/2013, 13/09/2013 and 30/05/2017. The installed capacity of the project has been raised to 75 MWm/72.5 MWe with the revision. As the registered capacity of the project is considered, the electricity generation and the emission reduction of the added units are ignored for this monitoring period.

² <https://www.nordex-online.com/en/>

For the aim of reaching the actual values derived from the registered capacity, the generation of the added turbines taken from SCADA system of the project activity will be subtracted from the total generated amount which could be monitored through EPIAS records. Thus, baseline emissions will be based on the "adjusted net electricity supplied to the grid". This value will be calculated as below:

$$\begin{array}{lcl} \text{Adjusted net} & & \text{Generation of} \\ \text{electricity supplied to} & = & \text{added capacity} \\ \text{the grid [MWh]} & & \text{taken from the} \\ & & \text{SCADA System} \\ & & \text{[MWh]} \end{array} \quad \text{Equation (1)}$$

The new turbine numbers are T19, T20, T21, T22, T23, T24, T25, T26, T27, T28, T29. The newly added turbines types are Nordex N100 2.5 MW for T19, T20, T21, T22, T23 and T24; N117/3.0 MW for T25, T26, T27, T28 and T29. The commissioning dates of the newly added turbines are as below:

Table 4 – The start dates of newly added turbines

Phase	Date	Capacity	Turbines
5 th	16/07/2013	7.5 MW	T19, T20, T21
6 th	13/09/2013	7.5 MW	T22, T23, T24
7 th	30/05/2017	15.0 MW	T25, T26, T27, T28, T29

Please see below the technical specifications of the installed turbines of the registered capacity:

Table 5 - Technical specifications of the installed turbines³

Parameter	Nordex N90 2.5 MW	Nordex N100 2.5 MW	Nordex N117 3.0 MW
Manufacturer	Nordex	Nordex	Nordex
Number of units	3	21	5

³ Please see the registered PDD.

Rotor Diameter	90 m	99.8 m	116.8 m
Rated Power	3 x 2.5 MWm/ 2.5 MWe	21 x 2.5 MWm/ 2.5 MWe	4 x 3.0 MWm/ 3.0 MWe + 1 x 3.0 MWm/ 0.5 MWe
Rated Wind Speed	13.5 m/s	12.0 m/s	12.5 m/s
Hub Height	80 m	80 m	91 – 120 m
Operating wind	3.0 - 25.0 m/s	3.0 - 20.0 m/s	2.5 – 12.5 m/s

The estimated annual electricity generation of the project is 121,939 MWh and the estimated amount of GHG emission reduction is 79,040 tonnes CO₂e per year in the registered PDD. During its operation during this monitoring period, the actualized net electricity generation is 226,060.45 MWh. The actual emission reduction has been calculated as 146,531 tonnes CO₂ for this monitoring period.

The project has produced positive environmental benefits as displacing the electricity generated by fossil fuel fired power plants by utilising the renewable resources to avoid environmental pollution and GHG emissions.

Important milestones of the project activity are summarized as follows:

Table 6 – Milestones

24/07/2008	EMRA issues production license for the project.
27/04/2009	Exemption from EIA received from Balıkesir Province Directorate of Environment and Forestry.
03/05/2010	The land permit was granted to Alentek by Susurluk Forestry Regional Directorate.
18/08/2010	Wind turbine purchase agreement with Nordex. This date is also the project activity start date and the construction start date.
13/02/2011	Preliminary acceptance of 5 turbines
25/03/2011	Preliminary acceptance of 4 turbines
22/04/2011	Preliminary acceptance of 5 turbines
20/05/2011	Preliminary acceptance of 4 turbines
13/02/2011	Start date of the 1 st crediting period
23/08/2016	Generation License amendment (capacity Increase to 75 MW)
13/02/2011	Start date of the 1 st monitoring period
31/05/2013	End date of the 1 st monitoring period

26/09/2016	Start date of the 2 nd monitoring period
12/02/2018	End date of the 2 nd monitoring period
12/02/2018	End date of the 1 st crediting period
13/02/2018 – 12/02/2025	Start and end dates of the 2 nd crediting period
16/09/2021	Start date of the 3 rd monitoring period
31/03/2023	End date of the 3 rd monitoring period

A.2. Location of project

The project location is near Ömerköy and Demirkapı Villages, Susurluk District in Balıkesir Province, in Marmara Region of Turkey. Province of Turkey. The coordinates of the turbines are given below:

Table 7 - Turbine Coordinates⁴

Turbine #	E	N
1	585396,000	4407734,000
2	585581,000	4407620,000
3	585776,000	4407618,000
4	587012,000	4407398,000
5	587414,000	4407261,000
6	587596,000	4407171,000
7	586043,00	4407017,000
8	586271,000	4407013,000
9	586479,000	4406949,000
10	587602,000	4406225,000
11	587786,000	4406150,000
12	587929,000	4405990,000
13	588389,000	4405776,000

⁴ The Generation License

14	588041,000	4405807,000
15	588897,000	4405675,000
16	589212,000	4406158,000
17	589419,000	4406105,000
18	589632,000	4406106,000
19	586459,000	4407709,000
20	586618,000	4407583,000
21	586659,000	4406830,000
22	589957,000	4406843,000
23	590124,000	4406644,000
24	590319,000	4406572,000
25	587519,000	4406471,000
26	588184,000	4407144,000
27	588347,000	4407004,000
28	588495,000	4406847,000
29	589841,000	4406009,000



Figure 1. Project Location on Turkey Map Site Layout

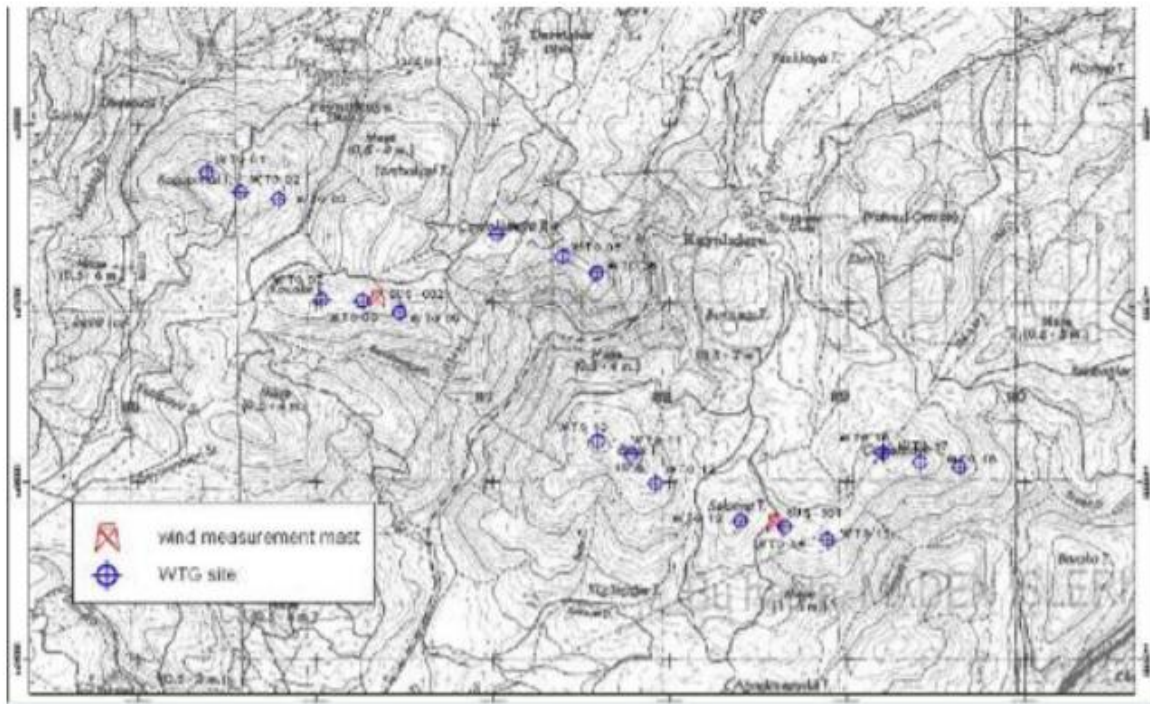


Figure 2. The locations of the turbines in the project area

A.3. Reference of applied methodology

Applied approved baseline and monitoring methodologies:

- Methodology: Large-scale Consolidated Methodology, ACM0002: Grid-connected electricity generation from renewable sources - Version 20.0⁵

Used tools:

- Tool to calculate the emission factor for an electricity system, Version 07.0⁶
- Tool for the demonstration and assessment of additionality, Version 07.0.0⁷
- Tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period", Version 03.0.1⁸

⁵ <https://cdm.unfccc.int/methodologies/DB/HF3LP6041YY0JIP1DK6ZRJO9RSCX3S>

⁶ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

⁷ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁸ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf>

A.4. Crediting period of project

The project was registered on 13/02/2011 with a renewable crediting period. The first crediting period is 7 years.

The first crediting period was between 13/02/2011 - 12/02/2018.

The second crediting period is between 13/02/2018 – 12/02/2025.

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The proposed project activity involves the installation of 18 units of wind turbines with a total installed capacity of 45.0 MW. The annual estimated electricity generation of the project is 121,939 MWh/year.

The newly added turbine numbers are T19, T20, T21, T22, T23, T24, T25, T26, T27, T28, T29. The newly added turbines type is Nordex N117/3000. Six of the turbines have a capacity of 2.5 MWm/2.5 MWe, four have a capacity of 3.0 MWm/3.0 MWe and one has a capacity of 3.0 MWm/0.5 MWe. The commissioning dates of the newly added turbines are 16/07/2013 (T19, T20, T21), 13/09/2013 (T22, T23, T24) and 30/05/2017 (T25, T26, T27, T28, T29).

The baseline emissions are based on the adjusted net electricity supplied to the grid. The adjusted net electricity is 226,060.45 MWh and the baseline emissions are 146,531 tCO₂ for this monitoring period. These values represent the generation and emission reduction of the power plant excluding the generation of turbines newly added in respect of capacity extension. For the aim of reaching the actual values derived from the registered capacity, the generation of the added turbines taken from SCADA system of the project activity were subtracted from the total generated amount which could be monitored through EPIAS records.

The 'adjusted net electricity supplied to the grid' is calculated as below:

$$\begin{array}{rcl} \text{Adjusted net} & & \text{Generation of} \\ \text{electricity supplied to} & = & \text{added capacity} \\ \text{the grid [MWh]} & & \text{taken from the} \\ & & \text{SCADA System} \\ & & \text{[MWh]} \end{array}$$

The grid connection point is Transformer Station. The connection voltage is 154 kV. The wind turbines of the plant are to be supplied from Nordex⁹. The technology used in the plant includes first hand wind turbines and its auxiliary equipment with extensive automatization. The project does not need extensive initial training and maintenance efforts to work as presumed during the project period. Necessary trainings to the plant staff will be delivered by the supplier in line with the agreement between the project owner and the supplier. In addition, according to EMRA, the average lifetime of wind turbines is between 20 and 25 years and it is accepted as 20 years for financial analysis of proposed project to be conservative side.

The Nordex N100 type turbine models were selected for fifteen turbines and Nordex N90 type turbines were selected for three turbines of the project. The turbines are 3 bladed with a horizontal axis. The hub height of all turbines is 80 m. The diameters of the blades are 99.8 m by N100 turbines and 90 m by N90 turbines.

Both main meter and backup meter are EMH brand (LZQJ-XC type) and accuracy class is 0.5S. The serial number of the main meter is "9674603" and the serial number of the backup meter is "9674604". The last test date of the meters is 02/11/2020.

The other entity involved in the Project has been Sekans Danışmanlık since the second monitoring period.

B.1.1. Forward Action Requests

FAR #1:

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

⁹ Reference: www.nordex-online.com

Statements available during following certification cycle (for example, a delay of 1 year beyond the first cycle shall mean that no Certified Impact Statements shall be issued for the period of delay). Thus, PD can only claim VERs from 16 Sep 2021 (the date of complete documents uploaded on SC App for crediting period renewal) in CP2.

Answer: In accordance with the rules, the monitoring period started from 16 Sep 2021.

FAR #2:

As there has been a gap in verification, next verification VVB please check OFN with numerical evidence.

Answer: Invoices for the VERS sales have been submitted to VVB.

B.2. Post-Design Certification changes

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

There are no project or methodology deviations 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 applied to the start date of the crediting period during this monitoring period.

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

There isn't any permanent change.

B.2.5. Changes to project design of approved project

There are no changes to project design during this monitoring period.

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

The objective of the monitoring plan is to ensure the complete, consistent, clear, and accurate monitoring and calculation of the emission reductions during the whole

crediting period. The Project Owner is responsible for the implementation of the monitoring plan.

The Project Owner is responsible for the overall management of the monitoring procedures including recording, data collection, calculating emission reductions and project emissions.

Please see below the management structure for the plant operation:

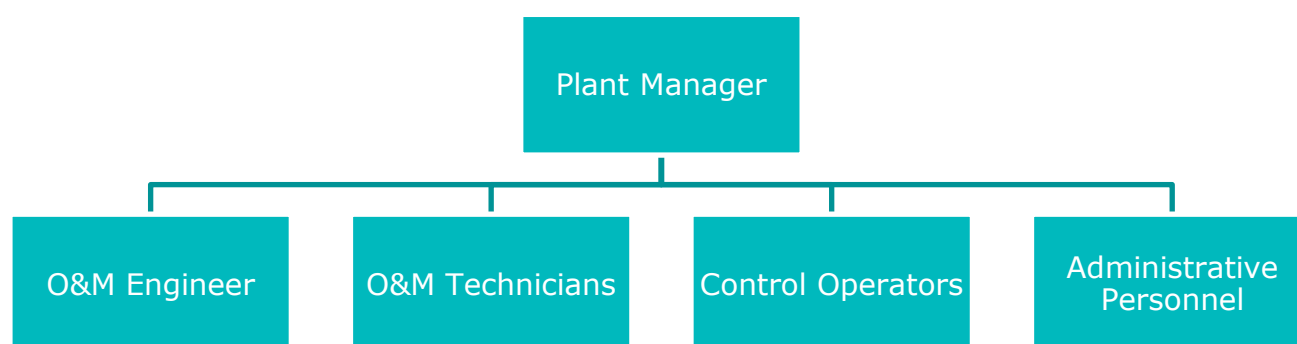


Figure 3. The management structure for the plant operation

The Plant Manager is responsible for the whole management of the Project Activity. For the operation of the project activity, there are seven O&M technicians, four control operators, one O&M engineer, one administrative personnel, one Nordex personnel and four security guards working for the project activity. In total, there are 19 employees working for Project Owner at the site. 10 personnel are from the local region.

Two power meters are installed at the grid interface of the project. One is the main meter, and the other is spare meter of the main meter for cross-checking. Both meters are jointly inspected and sealed to be protected from interference by any of the parties. Both the main and secondary meters are owned and installed by the grid operator (TEIAS).

Both meters are EMH branded (LZQJ-XC type) and the accuracy class of them is 0.5S. The serial number of the main meter is "9674603" and the serial number of spare meter

is "9674604". The latest test date of the meters is 02/11/2020¹⁰ and 07/03/2022. The meters are calibrated every ten years. Additionally, the meters are tested every two years¹¹.

The grid operator is the only one authorized to deal with fixing, calibrating, or changing the meters, which are done either by the grid operator or by a company authorized by the grid operator. During this monitoring period, there were no records of meter failure. In case of any urgent case TEIAS contacts the Operations Manager. Since the meters are within TEIAS' province, TEIAS executes all the procedures for handling non-conformities. Therefore, the Project Owner does not have any internal auditing for this purpose.

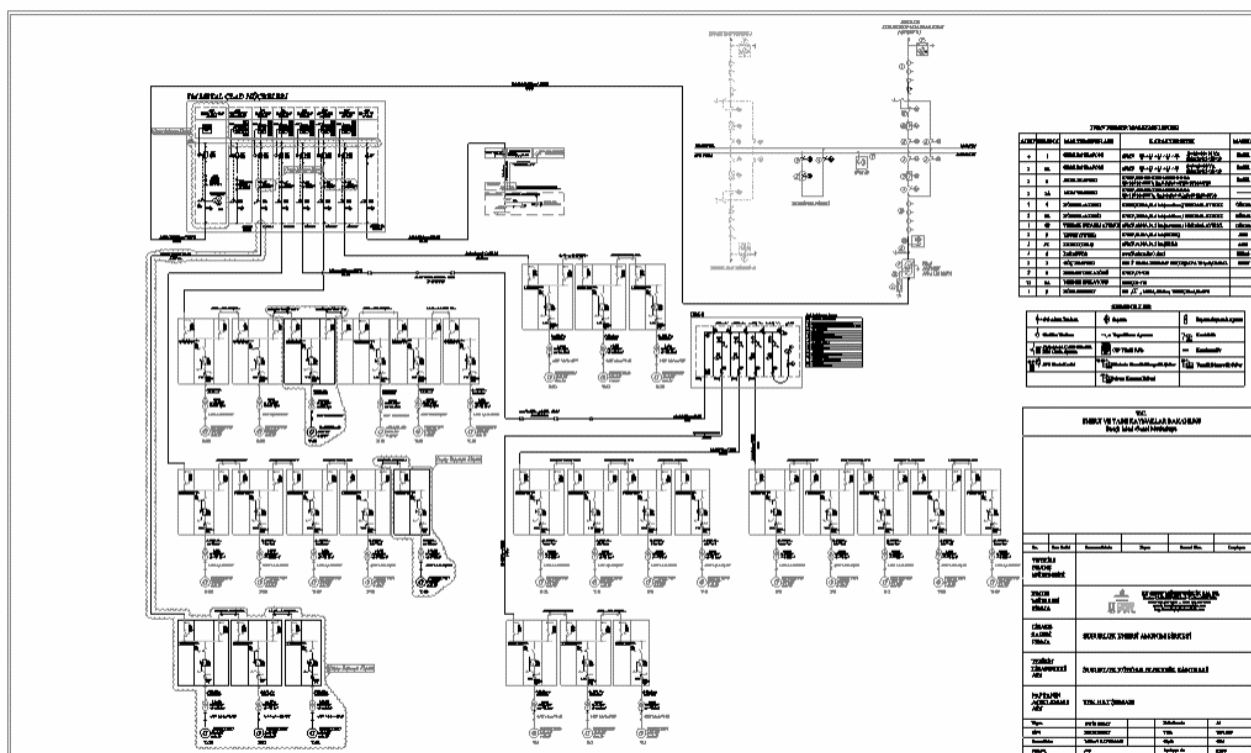


Figure 4. The single line diagram of the Project Activity

¹⁰ On 02/11/2020, the old power meters (Main meter with serial number "416275" and the spare meter with the serial number "416274") have been changed with the current ones.

¹¹ Please see Clause 9: [Measuring instruments directive](#)

TEIAS is performing remote reading of the meters and monthly power meter readings are the basis for monitoring net electricity fed into the grid. A measuring protocol is prepared including day, peak and night hour electricity generation by the project owner and approved by governmental officers at the end of each month.

The primary source is the EPIAS records. Net electricity exported is crosschecked with Meter Reading Forms. EPIAS is the financial settlement center of TEIAS. The Meter Reading Forms are filled in by the project owner and approved by the governmental officers. Additionally, remote reading by the governmental body is also available. The website of EPIAS is accessible to Project Owner with their unique user ID and password. Once accessed, the Project Owner is able to call electricity generation and Owner for invoicing TEIAS. The electricity generation data is reported on a monthly basis.

During the monitoring period, there isn't any change with the registered monitoring plan in terms of data aggregation.

Data is 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 Owner is responsible for storage of data received from the measuring devices. The site manager is responsible for data aggregation.

SECTION D. DATA AND PARAMETERS

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

Data/parameter	EF_{grid, CM, y}
Unit	tCO ₂ /MWh
Description	Emission factor of the Turkish grid determined ex-ante. It's been published by the Ministry of Energy for 2019 on 06/10/2021.
Source of data	Ministry of Energy. Please see: https://enerji.enerji.gov.tr/Media/Dizin/BHIM/tr/Duyurular/Bilgi_Formu_Web_Sitesi_2019_202110071443.pdf
Value(s) applied	0.6482
Choice of data or Measurement methods and procedures	Official data

Purpose of data	Calculation of the baseline emissions-to demonstrate contribution to SDG Target 13.3.: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Additional comment	-

D.2. Data and parameters monitored

Data / Parameter	ER_y								
Unit	tCO ₂ /y								
Description	Emission reductions by the project activity in year y (t CO₂/yr) In accordance with ACM0002, baseline emissions include CO₂ from electricity generation in powerplants that are displaced due to the project activity. And baseline emissions correspond to emission reductions and are calculated as the net electricity generated by the project activity, multiplied with combined margin CO₂ emission factor for grid connected powergeneration in year y.								
Source of data	Both measured and calculated. Emission reductions will be calculated as considering the EPIAS records for the net electricity generated and the emission factor for the grid, 0.6482 tCO₂/MWh, published by the Ministry of Energy								
Value(s) applied	<table border="1"> <thead> <tr> <th>Vintages</th><th>Achieved emission reductions</th></tr> </thead> <tbody> <tr> <td>16/09/2021 – 31/12/2021</td><td>30,928 tCO₂</td></tr> <tr> <td>01/01/2022 – 31/12/2022</td><td>93,511 tCO₂</td></tr> <tr> <td>01/01/2023 – 31/03/2023</td><td>22,092 tCO₂</td></tr> </tbody> </table> The achieved emission reductions for this monitoring period (16/09/2021 – 31/03/2023) is 146,531 tCO₂.	Vintages	Achieved emission reductions	16/09/2021 – 31/12/2021	30,928 tCO ₂	01/01/2022 – 31/12/2022	93,511 tCO ₂	01/01/2023 – 31/03/2023	22,092 tCO ₂
Vintages	Achieved emission reductions								
16/09/2021 – 31/12/2021	30,928 tCO ₂								
01/01/2022 – 31/12/2022	93,511 tCO ₂								
01/01/2023 – 31/03/2023	22,092 tCO ₂								
Measurement methods and procedures	Methodology ACM0002, Version 20.0								
Monitoring frequency	Once for each year of operation								

QA/QC procedures	- According to the methodology applied, the electricity supplied to the national grid by the project and the electricity consumed by the project activity shall be monitored. The net electricity is the difference of the electricity supplied and consumed by the project and shall be taken into account for emission reduction calculations. - Two power meters are installed at the grid interface of the project. One is the main meter and the other is the back-up meter of the main meter for cross-checking. Both meters are jointly inspected and sealed to be protected from interference by any of the parties.
Purpose of data	Calculation of combined margin CO2 emission factor and thus the baseline emissions-to demonstrate contribution to SDG Target 13.3.: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Additional comment	-

Data / Parameter	EGPJ, grid, y
Unit	MWh/yr
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Source of data	Direct measurement (EPIAS, formerly PMUM)
Value(s) applied	The net electricity generation during this monitoring period is 226,060.45 MWh. 47,713.96 MWh in 2021 144,263.05 MWh in 2022 34,083.45 MWh in 2023
Measurement methods and procedures	The net electricity is measured continuously by a power meter at the grid interface and recorded monthly. EPIAS records are the source of the exact electricity generation of the project and the imports from the grid. The quantity of net electricity delivered to the grid is crosschecked with the meter reading forms which are provided to the company by TEIAS.
Monitoring frequency	The net electricity is measured continuously by a power meter at the grid interface and recorded monthly. EPIAS records are the source of the exact electricity generation of the project and the imports from the grid. The quantity of net electricity delivered to the grid is cross checked with the meter reading records (OSF forms-OSOS) which are provided to the company by TEIAS.

	Net electricity generation supplied by the project plant to the grid [MWh] Electricity supplied to the grid [MWh] Electricity consumption from the grid [MWh] = -		
	Meters' information:		
	Specifications	Main meter	Spare Meter
	Manufacturer	EMH	EMH
	Serial No	9674603	9674604
	Latest calibration date of the meter	07/03/2022	07/03/2022
	Accuracy Class	0.5S	0.5S
	The latest test dates are 02/11/2020 and 07/03/2022.		
	Meters that were changed on 02/11/2020:		
	Specifications	Main meter	Spare Meter
Manufacturer	ELSTER	ELSTER	
Serial No	416275	416274	
Accuracy Class	0.2S	0.2S	
QA/QC procedures	The calibration is be implemented in accordance with the related standard procedures (IEC-EN 62053-22 and 62053-23) by either Turkish Electricity Transmission Corporation (TEIAS) or the provider company in the name of TEIAS. The meters are calibrated every ten years. Additionally, the meters are tested every two years ¹² .		
Purpose of data	Calculation of emission reductions SDG 7.2. By 2030, increase substantially the share of renewable energy in the global energy mix		
Additional comment	-		

Data / Parameter	Number of employments
Unit	Number
Description	Number of people permanently working for the operation of the project

¹² Please see Clause 9: [Measuring instruments directive](#)

Source of data	Social Security System (SGK)
Value(s) applied	19 personnel are working for the project activity. • 1 Plant Manager • 1 O&M Engineer • 7 O&M Technicians • 4 Control Operators • 1 Administrative Personnel • 1 Nordex Personnel • 4 Security Staff (Subcontractor-GLM Security) 10 personnel are from local region.
Measurement methods and procedures	Social Security System (SGK) records
Monitoring frequency	Once for each monitoring period
QA/QC procedures	SGK records of employees are provided during each monitoring period.
Purpose of data	SDG 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
Additional comment	-

Data / Parameter	a) Number of employees to be trained for the construction and operation of the plant b) Fair wage, working hours and occupational injuries											
Unit	a) Number b) N/A											
Description	a) Number of training sessions held b) The social security conditions provided to the employees											
Source of data	a) The number of trainings and attendance of employees have been monitored by documents (Training Records). b) Social Security Records											
Value(s) applied	a) Training and attendance certificates have been provided to the VVB. Please see the list of the latest trainings which were given to the employees as below: <table><tr><td>Date</td><td>Training</td></tr><tr><td>18/01/2022</td><td>Fire Protection, Evacuation and Rescue</td></tr><tr><td>15/03/2022</td><td>Occupational Health and Safety</td></tr><tr><td>07/06/2022</td><td>Turbine Training</td></tr><tr><td>10/01/2023</td><td>Occupational Health and Safety</td></tr></table>		Date	Training	18/01/2022	Fire Protection, Evacuation and Rescue	15/03/2022	Occupational Health and Safety	07/06/2022	Turbine Training	10/01/2023	Occupational Health and Safety
Date	Training											
18/01/2022	Fire Protection, Evacuation and Rescue											
15/03/2022	Occupational Health and Safety											
07/06/2022	Turbine Training											
10/01/2023	Occupational Health and Safety											

	b) Social Security Records
Measurement methods and procedures	a) Attendance records or training certificates b) Social Security Records
Monitoring frequency	Once for each year of operation
QA/QC procedures	Attendance records or training certificates are provided during each monitoring period.
Purpose of data	Monitoring the trainings and working conditions to justify contribution to SDG 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	-

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

Since the project is not community service project, this section is non-applicable.

D.4. Implementation of sampling plan

N/A

SECTION E. CALCULATION OF SDG IMPACTS

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

SDG 13

According to the methodology, baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are calculated as follows:

The baseline emission BE_y (tCO₂) during the monitoring period results from:

$$BE_y = EGPJ,y * EF_{grid,CM,y}$$

where:

BE_y	Baseline emissions in year y (tCO ₂)
$EG_{PJ,y}$	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
$EF_{grid,CM,y}$	Combined margin CO ₂ emission factor for grid connected power generation in year y calculated by using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO ₂ /MWh)

$$BE_y = 226,060.45 \text{ MWh} * 0.6482 \text{ tCO}_2/\text{MWh} = 146,531 \text{ tCO}_2$$

Table 8 - Baseline Emissions

Month	(A) Electricity supplied to the grid [MWh]	(B) Electricity consumed from the grid [MWh]	(C) = (A) - (B) EG (ID 8) Net electricity supplied to the grid [MWh]	EF [tCO ₂ / MWh]	Baseline emission: ER = EG * EF [t CO ₂ -eq]	Adjusted net electricity supplied to the grid [MWh] (E) = (D) - (B)	Adjusted baseline emission: ER = EG * EF [t CO ₂ -eq]
Sep-21 (16-30/09/2021)	23,694.46	10.88	11,841.79	0.6482	7,676	7,299.58	4,732
Oct-21	21,028.30	21.47	21,006.83	0.6482	13,617	13,335.11	8,644
Nov-21	18,718.07	26.27	18,691.80	0.6482	12,116	11,889.37	7,707
Dec-21	23,507.55	18.42	23,489.13	0.6482	15,226	15,189.91	9,846
Jan-22	17,254.18	37.21	17,216.97	0.6482	11,160	10,980.56	7,118
Feb-22	17,332.31	26.74	17,305.57	0.6482	11,217	10,985.66	7,121
Mar-22	20,711.89	15.64	20,696.25	0.6482	13,415	12,931.71	8,382
Apr-22	16,151.04	26.95	16,124.09	0.6482	10,452	10,328.94	6,695
May-22	12,714.76	41.80	12,672.96	0.6482	8,215	7,852.18	5,090
Jun-22	18,327.20	15.35	18,311.85	0.6482	11,870	11,505.13	7,458
Jul-22	31,023.97	0.37	31,023.60	0.6482	20,109	19,124.01	12,396
Aug-22	20,552.36	28.70	20,523.66	0.6482	13,303	12,711.72	8,240
Sep-22	17,076.78	20.91	17,055.87	0.6482	11,056	10,761.37	6,976
Oct-22	23,965.45	15.53	23,949.92	0.6482	15,524	14,854.94	9,629
Nov-22	18,405.38	16.29	18,389.09	0.6482	11,920	12,076.88	7,828
Dec-22	15,660.94	38.62	15,622.31	0.6482	10,126	10,149.96	6,579
Jan-23	15,723.27	40.80	15,682.47	0.6482	10,165	10,064.71	6,524
Feb-23	18,699.10	26.42	18,672.68	0.6482	12,104	12,063.36	7,819

Mar-23 (31/03/2023)	18,855.71	28.05	18,827.66	0.6482	12,204	11,955.38	7,749
2021 Vintage (16.09.2021- 31.12.2021)	86,948.38	77.04	86,871.34	0.6482	48,634	47,713.96	30,928
2022 Vintage (01.01.2022- 31.12.2022)	229,176.25	284.12	228,892.14	0.6482	148,367	144,263.05	93,511
2023 Vintage (01.01.2023- 31.03.2023)	53,278.08	95.26	53,182.81	0.6482	34,473	34,083.45	22,092
Total	369,402.71	456.42	368,946.29	0.6482	231,474	226,060.45	146,531

During this period, the project contributed to decreased fossil fuel consumption as well as a more sustainable development by generating 368,946.29 MWh and thus the reduction of 231,474 tCO₂. These values represent the generation and emission reduction of the power plant also including the capacity increase. For the aim of reaching the actual values derived from the registered capacity (45 MW), the generation of the added turbines taken from SCADA system of the project activity will be subtracted from the total generated amount which could be monitored through EPIAS records. Thus, baseline emissions will be based on the adjusted net electricity supplied to the grid. The adjusted net electricity is 226,060.45 MWh and the baseline emissions total to 146,531 tCO₂ for this monitoring period.

The emission factor ($EF_{grid,CM}$) is taken as 0.6482 tCO₂eq/MWh for the second crediting period as per the registered PDD.

SDG 7

The baseline value for renewable energy generation is 0. In the absence of the project activity, there wouldn't be renewable energy generation.

SDG 8

The baseline value for the number of employment is 0. In the absence of the project activity, there wouldn't be employment of new staff.

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

SDG 13

In accordance with the methodology ACM0002 "Grid-connected electricity generation from renewable sources", no project emissions need to be considered. Therefore,

$$PE_y = 0.$$

SDG 7

The estimated annual electricity generation of the project is 121,939 MWh.

The net total electricity generation of the project during this monitoring period is 226,060.45 MWh.

SDG 8

The project value for employment is 19.

E.3. Calculation of leakage

In line with the requirements of ACM0002 "Grid-connected electricity generation from renewable sources", no leakage emissions are considered. The main emissions potentially giving rise to leakage in context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g., extraction, processing and transport). These emission sources are neglected.

$$LE_y = 0$$

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

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
13	Emission reductions	146,531 tCO ₂	0	146,531 tCO ₂
7	MWh of renewable energy generated	0	226,060.45 MWh	226,060.45 MWh
8	Number of employment	0	19	19

In accordance with ACM0002, the baseline emissions are calculated as the net electricity generated by the project activity multiplied with the baseline emission factor of the project grid.

$$BE_y = EGPJ_{,y} \times EF_{grid,CM} \quad \text{Equation (2)}$$

where:

- BE_y = Baseline Emissions in year y (tCO₂)
- $EGPJ_{,y}$ = 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)
- $EF_{grid,CM}$ = 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" (tCO₂/MWh)

$$BE_y = 226,060.45 \times 0.6482 = 146,531 \text{ tCO}_2$$

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 ¹³ achieved during this monitoring period
13	121,700 tCO ₂	146,531 tCO ₂
7	187,752.65 MWh	226,060.45 MWh
8	16	19

¹³ Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

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

SDG13

Estimated emission reduction in ex ante calculation of registered PDD is 79,040 tCO₂, which corresponds to 121,700 tCO₂ for 562 days. And actual emission reduction achieved during this monitoring period is 146,531 tCO₂ (for 16/09/2021-31/03/2023, 562 days).

SDG 7

Estimated electricity generation in ex ante calculation of registered PDD is 121,939 MWh, which corresponds to 187,752.65 MWh for 562 days. And net electricity generation achieved during this monitoring period is 226,060.45 MWh (for 16/09/2021-31/03/2023, 562 days).

SDG8

The baseline value for the number of employment is 16. In the absence of the project activity, there wouldn't be employment of new staff. 19 employees are employed, currently.

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

SDG 7 & 13

Both actual emission reductions and net electricity generation achieved during the monitoring period are 20.4 % higher than the estimated amount.

This marginal spread from the estimation is probably due to weather conditions.

Table 9 - Comparison of electricity generation

Vintage	Period	Total Days	Amount achieved during this monitoring period (MWh)	Amount estimated ex ante (MWh)	Difference (MWh)	Difference (%)
2021	2021 Vintage (16.09.2021-31.12.2021)	107	47,713.96	35,746.50	11,967.46	33.5%
2022	2022 Vintage (01.01.2022-31.12.2022)	365	144,263.05	121,939.00	22,324.05	18.3%
2023	2023 Vintage (01.01.2023-31.03.2023)	90	34,083.45	30,067.15	4,016.29	13.4%
Total		562	226,060.45	187,752.65	38,307.80	20.4%

Table 10 - Comparison of emission reductions

Vintage	Period	Total Days	Amount achieved during this monitoring period (tCO2e)	Amount estimated ex ante (tCO2e)	Difference (tCO2e)	Difference (%)
2021	2021 Vintage (16.09.2021-31.12.2021)	107	30,928	23,171	7,757	33.5%
2022	2022 Vintage (01.01.2022-31.12.2022)	365	93,511	79,040	14,471	18.3%
2023	2023 Vintage (01.01.2023-31.03.2023)	90	22,092	19,489	2,603	13.4%
Total		562	146,531	121,700	24,831	20.4%

SDG 8

If the project hadn't been realized, there wouldn't be employment opportunity for employees. Therefore, the achieved impact for this SDG is 19.

SECTION F. SAFEGUARDS REPORTING

No safeguarding principle is monitored.

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.

The contact information of the plant responsible exists at the Mukhtars, the project owner and local community are always in touch. The project owner regularly checks with the Mukhtar if any complaint or a request exists. Any complaint or need from the local community could be received directly by the project owner and appropriate contributions or improvements are made to the local community. No complaint has been received during the monitoring period.

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

Since there is no request or complaint from the stakeholders, no mitigation is monitored specially.

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

No legal contest or dispute has arisen with the project during the 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