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

Key Project Information

GS ID (s) of Project (s)	702
Title of the project (s) covered by monitoring report	Boreas-1 Enez Wind Power Plant
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	13
Version number of the monitoring report	5
Completion date of the monitoring report	24/02/2022
Date of project design certification	25/04/2013 Design renewal date: 26/02/2019
Date of Last Annual Report	-
Monitoring period number	1 for second crediting period (3 in total)
Duration of this monitoring period	18/03/2019 – 31/07/2021
Project Representative	Sekans Danışmanlık
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	AMS-I.D, version 18.0
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 Ensure access to affordable, reliable, sustainable and modern energy for all	MWh of renewable energy generated	122,037.02	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 employment	13	-
SDG 13 Take urgent action to combat climate change and its impacts	Emission reductions	69,291	VERs

Table 2 – Product Vintages

		Amount Achieved
Start Dates	**End Dates**	**VERs**
18/03/2019	31/12/2019	22,193
01/01/2020	31/12/2020	31,560
01/01/2021	31/07/2021	15,538

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

"Boreas-1 Enez Wind Power Plant project" (hereinafter referred as the Boreas) was constructed by "Boreas Enerji Üretim Sistemleri Sanayi veTicaret A.Ş." (hereinafter referred as Boreas Enerji) in Edirne province, North West of Turkey. The generation license of the project was issued in 03/05/2007 for 49 years. The project has an installed capacity of 15 MW and annual generation is estimated to be 52,742 MWh[1].

[1] Since the certified capacity of the project is considered, 15 MW is indicated rather than the actual value of 20 MW.

The project site was an empty area on top of a hill which is surrounded by degraded oak forest. There is radio link station on the West end of the site. The project is located 48.7 ha area which belongs to General Directorate of Forestry.

The purpose of the Project is to produce renewable electricity using wind as the power source and to contribute to Turkey's growing electricity demand through a sustainable and low carbon technology. The project will displace the same amount of electricity generated by the grid dominated with fossil fired power plants. The annual emission reduction estimated by the project is 29,948 tonnes of CO2eq for the second crediting period.

There were six Nordex N90 turbines, each having a capacity of 2.5 MWs. The turbines were purchased from Germany and shipped to Turkey for installation. The electricity is transmitted to substation Enez TM, 154 kV bara via 10 km transmission line.

After the start of the commercial operation, the generation license of the project was revised on 26/06/2013. The installed capacity of the project has been increased to 20 MW with the revision. Two units have been added to the project as of 16/04/2015 and 02/08/2016, respectively. The added units are also from the same turbine supplier-Nordex N100 turbines with an installed capacity of 3.3 MWs. However, the N100 turbines are operated as 2. 5 MWs due to power limitation according to the generation license.

The estimated amount of GHG emission reduction is 29,948 tonnes CO2e per year in the registered PDD. During its operation during this monitoring period, the actualized net electricity generation is 122,037.02MWh. The actual emission reduction has been calculated as 69,291 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.

A.2. Location of project

Enez district of Edirne, Turkey and the nearest village is Hisarli which is approximatel 1 km away from the plant area.

Figure 1. The project site marked with A

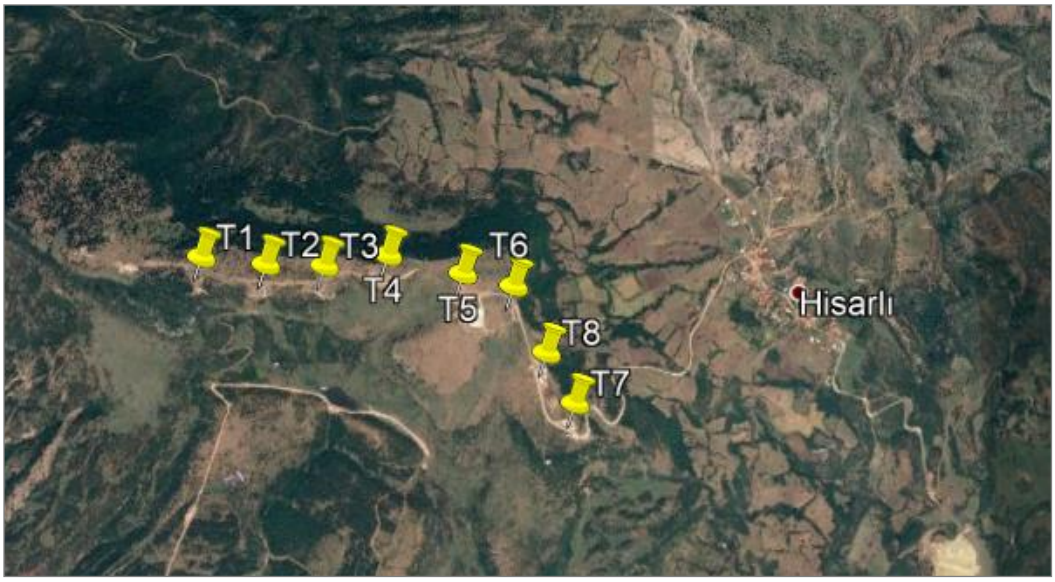

Figure 2. Turbine locations

Table 3- Coordinates of the Project Activity[2]

Turbine No	Latitude (N)	Longitude (E)
T1	40 ◦ 43’ 19.2”	26 ◦ 10’ 50.1”
T2	40 ◦ 43’ 18.3”	26 ◦ 11’ 2.8”
T3	40 ◦ 43’ 18.2”	26 ◦ 11’ 13.7”

[2] T7 and T8 belong to the capacity increase of the project and are not included within the registered Project Activity.

T4	40 ◦ 43’ 19.6”	26 ◦ 11’ 25.3”
T5	40 ◦ 43’ 17.1”	26 ◦ 11’ 39.2”
T6	40 ◦ 43’ 15.3”	26 ◦ 11’ 48.5”
T7	40°42'55.21"	26°11'56.77"
T8	40°43'2.28"	26°11'51.65"

A.3. Reference of applied methodology

In accordance with the Appendix B of the Simplified Modalities and Procedures for Small Scale CDM project activities,the project activity is classified as the type and category below:

Project type: Type I – Renewable Energy Projects
Category: D – Electricity Generation for a System

Methodology: AMS-I.D.: Grid connected renewable electricity generation --- Version 18.03
Sectoral Scope: 01 Energy industries (renewable - / non-renewable sources)

The AMS-I.D refers to:

- Tool to calculate the emission factor for anelectricity system, Version 07.0.0[4]
- Tool for the demonstration and assessment of additionality, Version 07.0.0[5]
- Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, Version 03.0[6]

A.4. Crediting period of project

Start date of the first crediting period: 25/04/2011

---

[3] https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTXFQQOFQQH4SBK
[4] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[5] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
[6] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v3.pdf

End date of the first crediting period: 24/04/2018

Even though the commissioning date of the power plant is 09/04/2010, the crediting period starts two years before the registration date as per the GS guidelines.

Start date of the second crediting period: 18/03/2019

End date of the second crediting period: 17/03/2026[7]

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The description of the implementation and operational status of the project and the installed technology(ies), technical process and equipment are detailed in Section A.1.

The project comprises the installation of six NORDEX N90/2500HS kW wind turbine generators with 80 m hub height. As an all-round turbine in the 2.5 MW product line, the N90/2500 can be deployed at strong-wind sites. With different tower heights, it covers wind class IEC 1. The added two units (T7 and T8) are Nordex N100 turbines with an installed capacity of 3.3 MWs. However, the N100 turbines would be operated as 2. 5 MWs due to power limitation according to the generation license.

Important milestones of the project activity are summarized as follows:

Table 4 - Milestones

	Activity	**Date**
1	Feasibility study completed	2007
2	License	03/05/2007
3	EIA exemption letter	17/07/2007
4	Feasibility study revised	19/03/2008

[7] 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. Due to the delay period, there is a break in continuity of crediting period.

5	Proposal for loan agreement (active with EM contract)	12/06/2008
6	Board decision for carbon asset development	04/09/2008
7	Contract agreement with EM supplier –conditional (active with down payment)	05/09/2008
8	The reservation payment for EM supplier	15/10/2008
9	Proposal for carbon asset development	17/11/2008
10	Board decision to sign the loan agreement	15/12/2008
11	The down payment done and EM contract activated (investment decision date)	26/01/2009
12	The completion date of the project lengthened to 03/09/2010	28/01/2009
13	Micrositing report completed	January 2009
14	Construction agreement for switchyard	17/02/2009
15	Consultancy agreement for VER development	10/04/2009
16	Construction agreement for the site preparation	27/04/2009
17	Agreement for cabling works	30/04/2009
18	Stakeholder meeting	29/04/2009
19	Construction agreement for turbine foundations	01/06/2009
20	Four turbine locations changed	11/09/2009
21	Site visit with the first DOE	07-09/11/2009
22	Stakeholder Feedback Round Meeting	09/11/2009
23	Commissioning date of the project activity (T1-T6)	09/04/2010
24	Second consultancy agreement with another company	30/11/2011
25	Draft validation report by the first DOE.	19/05/2011
26	Agreement with another DOE.	19/04/2012
27	Site visit with the second DOE.	09/07/2012
28	License amendment (capacity Increase to 20 MW)	26/06/2013
29	Board decision for carbon asset consideration of capacity increase	09/07/2013
30	Agreement with EM supplier for capacity increase	8/11/2013
31	Construction agreement for capacity increase	11/08/2014
32	Loan Agreement for capacity increase	19/08/2014
33	1st Monitoring Period	01/05/2011-31/07/2013
34	Commissioning date of turbine T8	16/04/2015
35	Commissioning date of turbine T7	01/08/2016
36	2nd Monitoring Period	12/11/2015 -24/04/2018
37	GS Approval for 2nd Crediting Period[8]	08/07/2019
38	2nd Crediting Period	18/03/2019- 17/03/2025
39	3rd Monitoring Period	18/03/2019-31/07/2021

B.1.1. Forward Action Requests

No FAR prom the Renewal of Crediting Period Review.

B.2. Post-Design Certification changes

[8] 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. Due to the delay period, there is a break in continuity of monitoring dates.

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

Since the registered capacity of the project activity is different form the installed capacity due to design change, the baseline emissions and thus emissions reductions will be based on the 'adjusted net electricity supplied to the grid'. This value will be calculated as below:

Adjusted net electricity supplied to the grid = EGPJ,y - (EGPJ,y *Expected Generation of Added Capacity/Expected Generation after Capacity Increase)[9]

B.2.5. Changes to project design of approved project

The generation license of the project was revised on 26/06/2013. The installed capacity of the project has been raised to 20 MW with the revision. Two turbines were added to the project on 16/04/2015 and 02/08/2016, respectively.

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 emissions reductions during the whole crediting

[9] The calculation can be seen in more detail via the calculation spreadsheet which is available to the VVB.

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

Monitoring Organization and System

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

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[10]

The quantity of the net electricity is crosschecked with EPİAS[11] records as sold electricity. EPİAS is the financial settlement center of TEIAS (the national grid operator). The website of EPİAS) is accessible to Project owner with their unique user ID and password. Once accessed, the Project owner is able to call electricity generation and consumption reports of their own projects. The same reports are used by the Project owner for invoicing TEIAS. The electricity generation data is reported monthly basis.

In addition to metering devices every single wind turbine generation will be monitored and the data will be stored through a SCADA system. Through this SCADA system, also other technical specifications of the turbines can be monitored such as temperature, voltage, current, frequency, vibration etc.

Please see below the management structure for the plant operation:

[10] The monthly reading protocols are available to the DOE.

[11] PMUM has been replaced by EPIAS as of 01/09/2015 in Turkey during the verification period. Retrospective data is accessible via EPIAS.

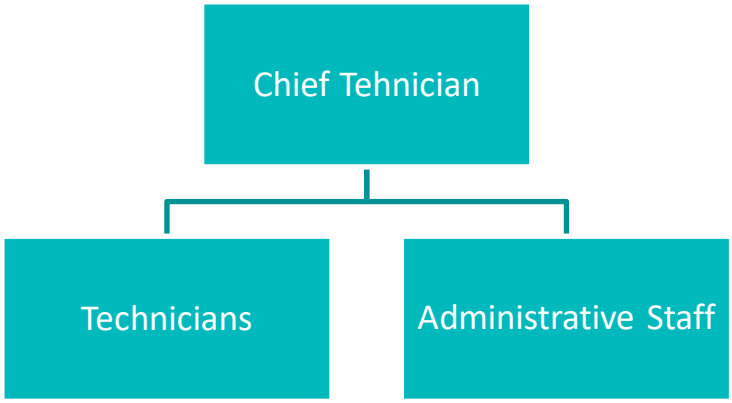

Figure 2. The management structure for the plant operation

The Chief Technician is responsible for the whole management of the Project Activity and the technicians are responsible for the implementation of the Project Activity. In addition to chief technician, there are four electrical technicians, one administrative staff, two maintenance technicians (turbine company) and five security staff.

Monitoring parameters

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.

Data Management and Quality Control

Two power meters are installed at the grid interface of the project. One is the main meter and the other is back-up meter of the main meter for cross-checking. Both meters are jointly inspected and sealed in order to be protected from interference by any of the parties. The data is hourly recorded by the personnel on the plant. There is a log book for the purpose. Trakya Load Dispatching Center also executes remote reading during 24 hour period. At the end of the month, the readings are sent via e-mail to Babaeski TEIAS office and Trakya Load Center to be compared and approved. The data could be remotely accessed by TEIAS.

The capacity of the transmission line connected is 154 kVA, the accuracy class for main power meter has been defined in the Communiqué for Power Meters as 0.2S class. The back-up meter has the same accuracy class of 0.2S. The calibration will be implemented in accordance with the related standard procedures (IEC-EN 60687) by either TEIAS or the provider company in the name of TEIAS. The meters are calibrated on yearly basis. The last

calibration was made on 02/12/2017[12]. When the main meter has a breakdown, the readings of the back-up meter will be used. If both meters failed, conservative data substitution procedures based on the internal SCADA data will be used. Both power meters are EMH model, 0.2S class. The serial number for main power meter is 5316624 and the back-up power meter is 5316625. The previous power meters indicated in the first monitoring report (ELSTER A-1500 model) were changed on 26/11/2015 due to breakdown.

All data collected as part of monitoring will be archived electronically by the project owner and be kept at least for 2 years after the end of the last crediting period.

The electricity is transmitted to substation Enez TM, 154 KV bara via 10 km transmission line. The single line diagram of Boreas-1 Enez Wind Power Plant is provided below:

[12] The protocol is available to the DOE.

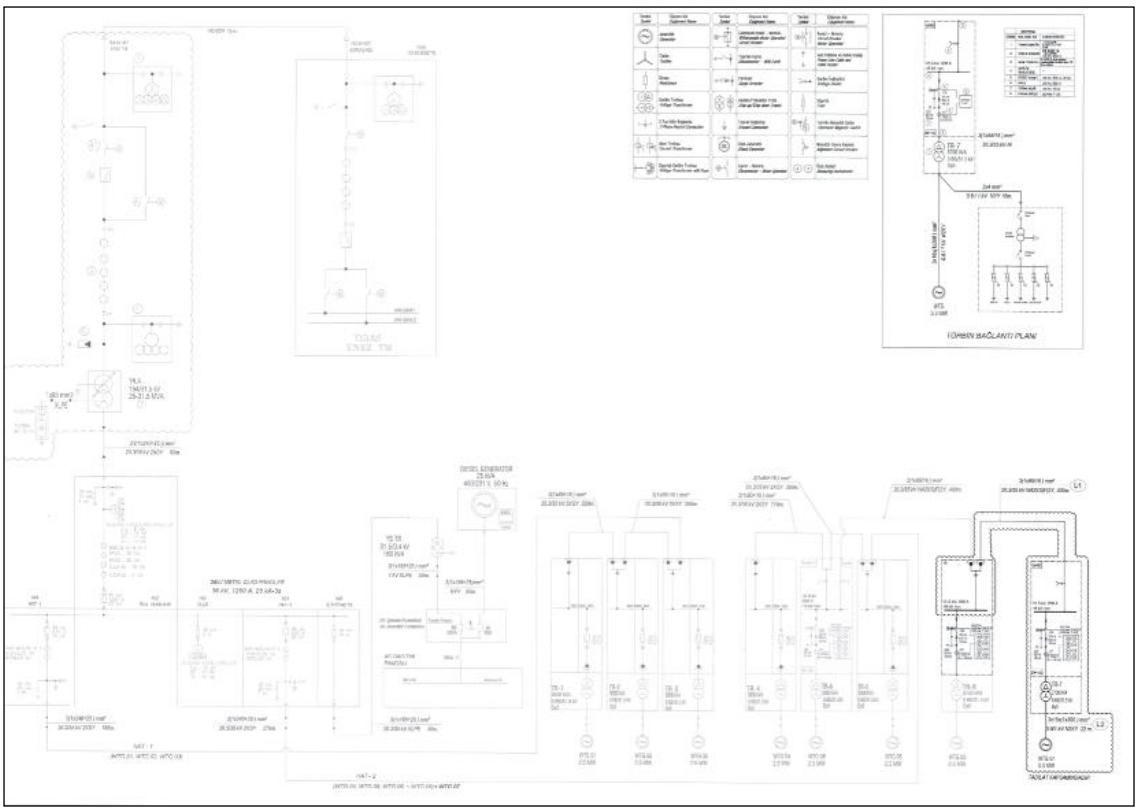

Figure 3. The single line diagram of the Project Activity

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 Meter Reading Forms. Net electricity exported is crosschecked with EPIAS records. EPIAS is the financial settlement center of TEIAS. The Meter Reading Forms are filled by the project owner and approved by the governmental officers. Additionally, the 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 monthly basis.

During the monitoring period, there is any change with the registered monitoring plan in terms of data aggregation. In addition to this, as explained in B.2.4, the registered capacity of the project activity is different form the installed capacity due to design change, the baseline emissions and thus emissions reductions will be based on the 'adjusted net electricity supplied to the grid'. For the aim of reaching the actual values derived from the

registered capacity, the ratio between the feasibility studies of the registered and added capacities are considered.

Data will be 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. 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

Relevant SDG 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" and following target
Data/parameter	EFgrid,y
Unit	tCO2/MWh
Description	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)
Source of data	TEIAS (Turkish Electricity Transmission Company) annual data
Value(s) applied	0.5678. Please see calculations of emission factor (Sections B.6.3. and B.6.4. in the PDD)
Choice of dataorMeasurement methods and procedures	According to "Turkish Statistics Law and Official Statistics Program" TEIAS, the Turkish Electricity Transmission Company is the official source for the related data, hence providing the most up-to-date and accurate information available.
Purpose of data	Calculation ofthe 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

Relevant SDG Indicator/Safeguarding Principle	SDG 7.2.1 Renewable energy share in the total final energy consumption
Data / Parameter	$EG_{pj,facility,y}$
Unit	MWh
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y

<table>
<tr><td>Source of data</td><td>EPİAS records</td></tr>
<tr><td>Value(s) applied</td><td>
<table>
<tr><th>Period</th><th>Generation (MWh)</th></tr>
<tr><td>18.03.2019 - 31.12.2019</td><td>39,087.18</td></tr>
<tr><td>01.01.2020 - 31.12.2020</td><td>55,583.53</td></tr>
<tr><td>01.01.2021 - 31.07.2021</td><td>27,366.32</td></tr>
</table>
</td></tr>
<tr><td>Measurement methods and procedures</td><td>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.

For the aim of reaching the actual values derived from the registered capacity of the power plant (15 MW), the ratio between the feasibility studies of the registered and added capacities will be considered. Thus, baseline emissions will be based on the adjusted net electricity supplied to the grid.

Adjusted net electricity supplied to the grid = EGPJ,y - (EGPJ,y *Expected Generation of Added Capacity/Expected Generation after Capacity Increase

Net electricity generation supplied by the project plant to the grid [MWh] = Electricity supplied to the grid [MWh] - Electricity consumption from the grid [MWh]</td></tr>
</table>

<table>
<tr><td>Monitoring frequency</td><td>Continuous monitoring, hourly measurement and at least monthly recording

Meters information:
<table><tr><td></td><td>Main Power Meter</td><td>Back-up Power Meter</td></tr><tr><td>Manufacturer</td><td>EMH</td><td>EMH</td></tr><tr><td>Serial Number</td><td>5316624</td><td>5316625</td></tr><tr><td>Date of Installation</td><td>26/11/2015</td><td>26/11/2015</td></tr><tr><td>The Test Date of the Meters</td><td>02/12/2017</td><td>02/12/2017</td></tr><tr><td>Accuracy of meters</td><td>0.2S class</td><td>0.2S class</td></tr></table></td></tr>
<tr><td>QA/QC procedures</td><td>A back-up meter is used for crosschecking the accuracy and both meters are periodically tested.
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 Market, which describes the minimum accuracy requirement the metering devices have to fulfil, which are categorized according to the installed capacity. The periodical test or maintenance is under the responsibility of TEIAS. Since TEİAŞ meters are sealed by TEİAŞ, the project proponent cannot intervene with the devices.
The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. EPIAS records are crosschecked with the meter reading protocols (OSOS-OSF forms)
In addition to metering devices every single wind turbine generation is monitored and the data will be stored through a SCADA system</td></tr>
<tr><td>Purpose of data</td><td>Calculation of emission reductions
SDG 7.2. By 2030, increase substantially the share of renewable energy in the global energy mix</td></tr>
<tr><td>Additional comment</td><td>-</td></tr>
</table>

Relevant SDG Indicator/Safeguarding Principle	8.8.1. Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status
Data / Parameter	Number of trainings and availability of protection equipment.
Unit	Number
Description	Attendance records or training certificates
Source of data	Training certificates or training attendance lists. - Personal protection equipment distribution records are available to the VVB.

<table>
<tr><td>Value(s) applied</td><td>Training certificates and training attendance lists are available to the VVB.

<table><tr><td></td><td>Training</td><td>Personnel</td><td>Date</td></tr><tr><td>1</td><td>Working at height</td><td>MEHMET ERSUN ŞILAK</td><td>11/04/2019</td></tr><tr><td>2</td><td>Working at height</td><td>NİHAT ÇAPIN</td><td>11/04/2019</td></tr><tr><td>3</td><td>First Aid</td><td>ESİN ERTAŞ</td><td>26/06/2021</td></tr><tr><td>4</td><td>First Aid</td><td>HAKAN KAYA</td><td>26/06/2021</td></tr><tr><td>5</td><td>First Aid</td><td>MEHMET ERSUN ŞILAK</td><td>26/06/2021</td></tr><tr><td>6</td><td>First Aid</td><td>NİHAT ÇAPIN</td><td>26/06/2021</td></tr><tr><td>7</td><td>First Aid</td><td>ORHAN BAŞARAN</td><td>26/06/2021</td></tr></table></td></tr>
<tr><td>Measurement methods and procedures</td><td>Training certificates or training attendance lists</td></tr>
<tr><td>Monitoring frequency</td><td>Once for each monitoring period</td></tr>
<tr><td>QA/QC procedures</td><td>Training certificates or training attendance lists are provided during each monitoring period.</td></tr>
<tr><td>Purpose of data</td><td>Monitoring the trainings 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</td></tr>
<tr><td>Additional comment</td><td>-</td></tr>
</table>

Relevant SDG Indicator/Safeguarding Principle	8.5.2. Unemployment rate, by sex, age and persons with disabilities
Data / Parameter	Number of employees
Unit	Number
Description	Number of people permanently working for the operation of the project
Source of data	Social Security System (SGK)
Value(s) applied	13
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	-

Relevant SDG Indicator/Safeguarding Principle	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
Data / Parameter	ER_y
Unit	tCO_2/y
Description	Emission reductions by the project activity in year y (t CO2/yr) In accordance with AMS-I.D, baseline emissions include CO2from 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 power generation 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, 0.5678 tCO2/MWh, calculated using the TEIAS annual data
Value(s) applied	69,291 tCO_2

Measurement methods and procedures	Detailed in the registered PDD. Please check the sections, Please check sections B.6.2-B.6.4 and B.7.3 for more detailed description of the monitoring plan.
Monitoring frequency	Once for each year of operation
QA/QC procedures	Please check section B.7.3 in the registered PDD for the monitoring plan.
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	-

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 CO_2 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:

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

Where:

BE_y Baseline emissions in year y (tCO2/year)

$EG_{PJ,y}$	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)
$EF_{grid,CM}$	Combined margin CO2 emission factor for grid connected power generation calculated using the latest version of the "Tool to calculate the emission factor for an electricity system". The combined margin is calculated ex-post and has been fixed for the first crediting period.

Since the registered capacity of the project activity is different form the installed capacity due to design change, the baseline emissions and thus emissions reductions will be based on the 'adjusted net electricity supplied to the grid'. This value will be calculated as below:

Adjusted net electricity supplied to the grid = EGPJ,y - (EGPJ,y *Expected Generation of Added Capacity/Expected Generation after Capacity Increase)

TEMPLATE

The baseline emissions during the monitoring period as follows:

Table 5- Baseline Emissions

Dönem	(A) Electricity supplied to the grid [MWh]	(B) Electricity consumption from the grid	(C) = (A) - (B) Net electricity supplied to the grid [MWh]	EF [tCO2/MWh]	Baseline emission: ER = EG * EF [t CO2-eq]	Adjusted net electricity supplied to the grid [MWh] (D) = (C) - ((C) *(R))	Adjusted baseline emission: ER = EG * EF [t CO_2-eq]
Mart 19	3,775.1881	5.7890	3,769.399	0.5678	2,140	2,470.65	1,403
Nisan 19	5,098.9700	7.6670	5,091.303	0.5678	2,891	3,337.10	1,895
Mayıs 19	4,466.8450	9.8480	4,456.997	0.5678	2,531	2,921.34	1,659
Haziran 19	5,870.6650	5.2410	5,865.424	0.5678	3,330	3,844.49	2,183
Temmuz 19	4,379.7540	6.6270	4,373.127	0.5678	2,483	2,866.37	1,628
Ağustos 19	8,963.8610	2.5930	8,961.268	0.5678	5,088	5,873.67	3,335
Eylül 19	7,673.1580	7.0660	7,666.092	0.5678	4,353	5,024.74	2,853
Ekim 19	6,219.5570	7.4470	6,212.110	0.5678	3,527	4,071.73	2,312
Kasım 19	6,534.6790	3.9470	6,530.732	0.5678	3,708	4,280.57	2,431
Aralık 19	6,715.8770	8.2590	6,707.618	0.5678	3,809	4,396.51	2,496
Ocak 20	8,037.7910	12.7800	8,025.011	0.5678	4,557	5,260.00	2,987
Şubat 20	8,271.2450	5.6810	8,265.564	0.5678	4,693	5,417.67	3,076
Mart 20	8,689.6170	7.7470	8,681.870	0.5678	4,930	5,690.54	3,231
Nisan 20	7,460.4220	5.6160	7,454.806	0.5678	4,233	4,886.26	2,774
Mayıs 20	5,373.6910	7.9170	5,365.774	0.5678	3,047	3,517.00	1,997
Haziran 20	3,073.1110	14.5080	3,058.603	0.5678	1,737	2,004.76	1,138
Temmuz 20	7,977.5460	2.3810	7,975.165	0.5678	4,528	5,227.33	2,968
Ağustos 20	6,022.8600	3.9490	6,018.911	0.5678	3,418	3,945.10	2,240
Eylül 20	8,324.4060	3.8320	8,320.574	0.5678	4,724	5,453.72	3,097
Ekim 20	3,660.4460	10.5730	3,649.873	0.5678	2,072	2,392.31	1,358
Kasım 20	9,112.1060	5.4590	9,106.647	0.5678	5,171	5,968.96	3,389
Aralık 20	8,880.9930	1.7570	8,879.236	0.5678	5,042	5,819.90	3,305
Ocak 21	8,839.7880	3.3420	8,836.446	0.5678	5,017	5,791.85	3,289
Şubat 21	7,105.5310	5.7600	7,099.771	0.5678	4,031	4,653.55	2,642
Mart 21	6,965.2910	6.3280	6,958.963	0.5678	3,951	4,561.26	2,590
Nisan 21	5,523.1090	7.0000	5,516.109	0.5678	3,132	3,615.54	2,053
Mayıs 21	5,792.4450	7.0160	5,785.429	0.5678	3,285	3,792.06	2,153
Haziran 21	2,063.3720	14.2070	2,049.165	0.5678	1,164	1,343.13	763
Temmuz 21	5,513.1710	7.1330	5,506.038	0.5678	3,126	3,608.94	2,049
2019 Vintage (18.03.2019-31.12.2019)	59,698.55	64.48	59,634.07	0.5678	33,860.22	39,087.18	22,193
2020 Vintage (01.01.2020-31.12.2020)	84,884.23	82.20	84,802.03	0.5678	48,150.59	55,583.53	31,560
2021 Vintage (01.01.2021-31.07.2021)	41,802.71	50.79	41,751.92	0.5678	23,706.74	27,366.32	15,538
Total	186,385.50	197.47	186,188.03	0.5678	105,717.56	122,037.02	69,291

The emission factor ($EF_{grid,CM}$) is taken as 0.5678 tCO_2/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 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 AMS-I.D, no project emissions need to be considered. Project emissions apply only for geothermal power plants, solar thermal power plants and for some hydro power plants. Therefore,

PEy = 0

SDG 7

The project value for renewable energy generation is 122,037.02MWh.

SDG 8

The project value for employment is 12.

E.3. Calculation of leakage

In line with the requirements of the methodology AMS-I.D", 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.

LEy = 0

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

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit

13	Climate Action	69,291	0	69,291
7	Affordable and Clean Energy	0	122,037.02	122,037.02
8	Decent Work and Economic Growth	0	8	8

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	71,055	69,291
7	125,135.81	122,037.02
8	14	13

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 29,948 tCO2, which corresponds to 71,055 tCO2 for 867 days. And actual emission reduction achieved during this monitoring period is 69,291 tCO2 (for 08/03/2019-31/07/2021, 867 days).

SDG 7

Estimated electricity generation in ex ante calculation of registered PDD is 52,742 MWh, which corresponds to 125,135.81 MWh for 867 days. And net electricity generation

[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.

achieved during this monitoring period is 122,037.02MWh (for 08/03/2019-31/07/2021, 867 days).

SDG8

The baseline value for number of employment is 0. In the absence of the project activity, there wouldn't be employment of new staff. Estimated number of employment in the registered PDD is 14. Realized And number of employment achieved during this monitoring period is 13.

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

SDG 7&13

Both the actual emission reductions and net electricity generation achieved during the monitoring period is almost the same as estimated. The difference is %2, respectively. This marginal spread from the estimation is probably due from weather conditions.

Table 6- Comparison of electricity generation

Vintage	Period	Total Days	Amount achieved during this monitoring period (MWh)	Amount estimated ex ante (MWh)	Difference (MWh)	Difference (%)
2019	18.03.2019 - 31.12.2019	289	39,087.18	41,760.10	-2,673	-6%
2020	01.01.2020 - 31.12.2020	366	55,583.53	52,742.00	2,842	5%
2021	01.01.2021 - 31.07.2021	212	27,366.32	30,633.71	-3,267	-11%
Total		**867**	**122,037.02**	**125,135.81**	**-3,099**	**-2%**

Table 7- Comparison of emission reductions

Vintage	Period	Total Days	Amount achieved during this monitoring period (tCO2e)	Amount estimated ex ante (tCO2e)	Difference (tCO2e)	Difference (%)
2019	18.03.2019 - 31.12.2019	289	22,193	23,712	-1,519	-6%
2020	01.01.2020 - 31.12.2020	366	31,560	29,948	1,612	5%
2021	01.01.2021 - 31.07.2021	212	15,538	17,394	-1,856	-11%
Total		**867**	**69,291**	**71,055**	**-1,764**	**-2%**

SDG 8

If the project hadn't been realized, there wouldn't be employment opportunity for employees. Therefore, achieved impact for this SDG is 13.

SECTION F. SAFEGUARDS REPORTING

Principle 9.4 Release of pollutants

Domestic wastewater is collected by the designated entities by the municipality. From the start date of the project activity, the process is handled according to the regulations of Ministry of Environment and Urbanization. The sewage is transferred by sewage truck to local municipality sewage system as per the "Regulation on Control of Water Contamination".

Domestic solid wastes are transferred to garbage dump site of the village and disposed by the Project Owner, regularly.[14]

Principle 9.5 Hazardous and Non-hazardous Waste

Hazardous wastes are handled appropriately in closed containers and transported by licensed transporters to the licensed processing and disposal facilities.[15]

Principle 9.10 High Conservation Value Areas and Critical Habitats

[14] Signed declaration (dated on 08/02/2022) of the Mukhtar
[15] The hazardous waste transfer and discharge records.

The Project does not physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified.

Principle 9.11 Endangered Species

There aren't any endangered species identified as potentially being present within the Project boundary (including those that may route through the area).

During the monitoring period, there hasn't been any negative impact by the project activity.

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 Grievance Book was delivered to the Mukhtar (village head) and he keeps the book in his office to receive any input from the local stakeholders. During the monitoring period, no complaint or input has been received by the Mukhtar[16].

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[17].

[16] Signed declaration (dated on 08/02/2022) by the Mukhtar.
[17] Signed declaration (dated on 08/02/2022) by the Project Owner.