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for the Global Goals

Climate Security and Sustainable Development

MONITORING REPORT

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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)	GS906
Title of the project (s) covered by monitoring report	Canakkale WPP
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	3
Version number of the monitoring report	8 7
Completion date of the monitoring report	05/13/2024 075/2024
Date of project design certification	03/08/2012 ¹
Date of Last Annual Report	20/12/2022
Monitoring period number	6 th Monitoring period (1 st Monitoring period of the 2 nd Crediting period)
Duration of this monitoring period	28/03/2020 – 31/01/2023
Project Representative	1. Enerjisa Enerji Üretim A.Ş. 2. SILA DURAN sila@sekansanismanlik.com 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	ACM0002 "Grid-connected electricity generation from renewable sources", Version 20.0

¹ The Design Change Approval date is 13/09/2021 and the Design Renewal date is 15/03/2021.

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	227,826.38	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	3	Employees
SDG 13 Take urgent action to combat climate change and its impacts	Emission reductions	141,189	VERs

Table 2 – Product Vintages

		Amount Achieved
Start Dates	End Dates	VERs
28/03/2020	31/12/2020	37,578
01/01/2021	31/12/2021	48,627
01/01/2022	31/12/2022	51,116
01/01/2023	31/01/2023	3,868

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

Enerjisa Enerji Üretim A.Ş (hereafter referred as the “Project Owner”) installed Canakkale WPP (hereafter referred to as the “Proposed Project”) with 29.9 MW installed capacity in Mahmudiye Neighbourhood of Ezine District in Çanakkale Province of Turkey, in West Marmara Region.

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 56,755 tonnes of CO₂eq.

The project activity pursues both to contribute to providing energy needs of Turkey and to create local industry as well as providing employment. The project activity is Ezine District of Çanakkale Town in West Marmara Region, Turkey. The project start date is 28/04/2010 as the date of signature of the works contract. The construction agreement date is 28/04/2010 and the start date of commissioning of the project is 11/02/2011.

Total capacity of the project activity is 29.9 MW. Annual electricity generation is calculated as 91,570 MWh which is transmitted to the national grid through Enerjisa Çanakkale Transformer Station via a 154 kV high voltage transmission line.

The project activity includes 13 units of SWT 101 type turbines, each with a capacity of 2300 kW. ABB A/S branded generators have a rated output of 2300 kW, 0.887 power factor and a frequency of 50 hz.

The commissioning dates of the project activity may be seen through Table 3:

Table 3 – Recent timeline of the project

Date	Comissioning of Turbines
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11/02/2011	1 st Crediting period start date
11/02/2011	Commissioning of 11 turbines
11/02/2011 – 31/08/2012	1 st Monitoring period
06/05/2011	Commissioning of 2 turbines
01/09/2012 – 30/09/2013	2 nd Monitoring period
01/10/2013 – 31/03/2015	3 rd Monitoring period
01/04/2015 – 31/03/2016	4 th Monitoring period
01/04/2016 – 10/02/2018	5 th Monitoring period
10/02/2018	1 st Crediting period end date
11/02/2018	2 nd Crediting period start date
28/03/2020 – 28/02/2023	6 th Monitoring period
10/02/2025	2 nd Crediting period end date

During its operation during this monitoring period, the actualized net electricity generation is 227,826.38MWh. The actual emission reduction has been calculated as 141,189 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

The project activity is located between Üvecik Village and Mahmudiye Neighbourhood, Ezine District of Çanakkale Province in West Marmara Region, Turkey.

Table 4 – Coordinates of the wind turbines²

Turbine	E (Longitude)	N (Latitude)
T1	26°13'03"	39°52'23"
T2	26°13'15"	39°52'26"
T3	26°13'28"	39°52'28"

² The ".kmz" file for the coordinates of the turbines is available to the VVB.

T4	26°13'40"	39°52'38"
T5	26°12'24"	39°52'01"
T6	26°12'42"	39°52'00"
T7	26°12'57"	39°52'00"
T8	26°13'10"	39°51'56"
T9	26°13'21"	39°51'46"
T10	26°13'33"	39°51'53"
T11	26°13'46"	39°51'54"
T12	26°13'57"	39°51'43"
T13	26°14'10"	39°52'03"



Figure 1. The locations of the turbines in the project area

A.3. Reference of applied methodology

Applied approved baseline and monitoring methodologies:

- Large scale consolidated methodology "ACM0002: Grid-connected electricity generation from renewable sources" - Version 20.0³

³ <https://cdm.unfccc.int/UserManagement/FileStorage/AG07ZJQ3EXD42LT5YV9HR16M8KINPO>

The methodology refers to:

- Tool to calculate the emission factor for an electricity system, Version 07.0⁴
- Tool for the demonstration and assessment of additionality, Version 07.0.0⁵
- Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion, Version 03.0⁶
- Tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period", Version 03.0.1⁷

A.4. Crediting period of project

The first crediting period is 7 years and renewable twice.

Start date of the first crediting period: 11/02/2011

End date of the first crediting period: 10/02/2018

Start date of the second crediting period: 11/02/2018

End date of the second crediting period: 10/02/2025

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The proposed project activity involves the installation of 13 units of wind turbines with a total installed capacity of 29.9 MW. The total annual electricity generation of the project is calculated as 91,570 MWh/year. 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.

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>

⁷ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf>

The start date of the project activity is 28/04/2010 as the date of signature of the work contract. The first temporary acceptance protocol signed by the Ministry of Energy and Natural Resources is dated 11/02/2011 for the commissioning of eleven turbines. The second temporary acceptance protocol with the Ministry was signed on 06/05/2011 for the remaining two turbines.

The Siemens SWT 101 turbine model was selected for the 13 turbines of the project. It's a three-bladed variable-speed wind turbine generator with a rotor diameter of 93 m. The hub height of the turbines is 80 m. The nominal power of each turbine is 2300 kW. The turbines are connected to the Çanakkale RES Substation, and the electricity generated is transmitted to the national grid via a 154 kV high voltage transmission line. The metering has been done at substation before electricity is fed into the grid.

Table 5 – The technical details of the 13 turbines involved in the Project Activity

Turbine Model	Siemens SWT 101
Turbine type	3-bladed, horizontal axis
Rated power	2300 kW
Rated wind speed	12 m/s
Cut-in/cut-out wind speed	3 m/s – 25 m/s
Rotor diameter	101 m
Hub height	80 m
Design life	20 years

Table 6 – The technical details of the generators involved in the Project Activity

Brand	ABB Motor A/S
Type	Asynchronous
Rated output	2300 kW
Voltage	690 V
Frequency	50 Hz
Power factor	0.887
Revs	1512 rpm

Table 7 – The technical details of the power meters belong to the Project Activity

Specifications	Primary Meter	Secondary Meter
Brand/Model	EMH	EMH
Serial Number	10962383	10962384
Accuracy of meters	C(0.5S)	C(0.5S)
The Latest Calibration Date of the Meter	26/05/2022	26/05/2022

Table 8 – The details of the power meters that were changed on 26/05/2022

Specifications	Primary Meter	Secondary Meter
Brand/Model	ACTARIS	ACTARIS
Serial Number	53031805	53031806
Accuracy of meters	C(0.5S)	C(0.5S)
The Latest Calibration Date of the Meter	26/04/2019	26/04/2019

B.1.1. Forward Action Requests

Forward Action Request # 1: In-line with GS4GG Principles and Requirements, Delay in the completion of revalidation 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 the following certification cycle. Thus, PD cannot claim credits during the delay period of 11/02/2018 to 27/03/2020.

Deviation decision:

Project may delay the submission of the FVR without incurring lost credits from the date interurban travel was restricted in the project country (28/03/2020 as evidenced below). FVRs must be submitted to SustainCERT in the month of February.

- The FVR was submitted in February.

Forward Action Request # 2: As remote audit conducted, VVB shall resume site visit when COVID-19 situation eases in-line with relevant Interim Measure.

- Physical site visit was conducted on 01/02/2023.

Forward Action Request # 3: Other than availability of PP's contact details to mukhtar and stakeholders as sole grievance mechanism mean, please also deliver a logbook in mukhtar's office and announce the purpose for the local stakeholders who wish to remain anonymous with their inputs. Please also encourage those stakeholders who provide any related input to Mukhtar to be passed to PP to also record the feedback in the book.

- The logbook is located in mukhtar's office.

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 are no changes applied to the start date of the crediting period during this monitoring period.

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.

All monitoring procedures and requirements of the proposed project activity is in accordance with the methodology ACM0002 "Grid-connected electricity generation from renewable sources" Version 20.0.

Metering: The main source for electricity generation metering will be the TEIAS meters installed and sealed by TEIAS. Since the TEIAS meters are sealed by TEIAS and are also the basis of invoicing, high accuracy and reliability is ensured. Also, the TEIAS meters have the ability to measure both the amount of electricity exported to the grid as well as the amount of electricity imported by the project activity, which provides an accurate and reliable measurement of the net electricity.

The old main meter and the old backup meter were ACTARIS branded. The serial numbers were "53031805" for the main meter and "53031806" for the spare meter. Both meters had an accuracy class of 0.5S. These meters were replaced with the current ones on 26/05/2022.

The existing main meter and backup meter are EHM branded. The serial numbers are "10962383" for the main meter and "10962384" for the spare meter. Both meters have an accuracy class of 0.5S. The latest test date of the meters is 26/05/2022.⁸ The meters are calibrated every ten years. Additionally, the meters are tested every two years⁹.

Additionally, the Project Owner enters the expected electricity generation on daily basis to the website of EPIAS which is the financial settlement center of TEIAS. The website of EPIAS is accessible to project owner with their unique user ID and password. The difference between the expected and generated electricity (imbalance) is costed the

⁸ Meter Test Protocols have been provided to the VVB.

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

project owner at the end of each month. The electricity generation data is reported monthly. EPIAS records are used as the source of net generated electricity value and meter reading forms or OSF forms issued by TEIAS will be used for the crosscheck.

Meter readings: Once a month, the project participant will perform data readings. The monthly results will be recorded by the project participant both manually and electronically.

Data storage: 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 Participant will be responsible for storage of data received from the measuring devices.

Responsibilities for monitoring: The Project Owner is responsible for the operation and maintenance of the project activity and the installed equipment. The project owner is also responsible for the administration of the data, setting up a VER team who is responsible for monitoring all data required to estimate emission reductions. Emission reductions are calculated by the VER consultant, Sekans. In the diagram below the organization of monitoring management and data application may be seen:



Figure 2. The management structure for the plant operation

The operations manager is responsible for performing all administrative, financial, organizational and strategic management of the power plant. The Administrative and

Social Affairs Officer is responsible for the correct management and control of cleaning, consumables, food and other service processes. The Operations Technician is responsible for the daily switchgear and turbine operations.

Quality assurance and quality control: The main source of measurement is the TEIAS meters, which are sealed by TEIAS and since it is subject to monthly invoicing high reliability and accuracy is secured. In accordance with the requirements of TEIAS, there are two meters installed at the site where one is called the main meter and the other one is as secondary meter. TEIAS is the main responsible for calibration and maintenance of the devices. TEIAS performs the necessary maintenance and calibration. Since the electricity generation data is used for the billing and accounting between TEIAS and the project participant the data is of high quality.

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 for invoicing TEIAS. The electricity generation data is reported on a monthly basis.

Corrective actions and emergency preparedness: The Project Owner regularly check the monitoring system on errors. In the case of errors, corrective actions will be undertaken by the Project Participant, or if required, by the supplier of the monitoring equipment.

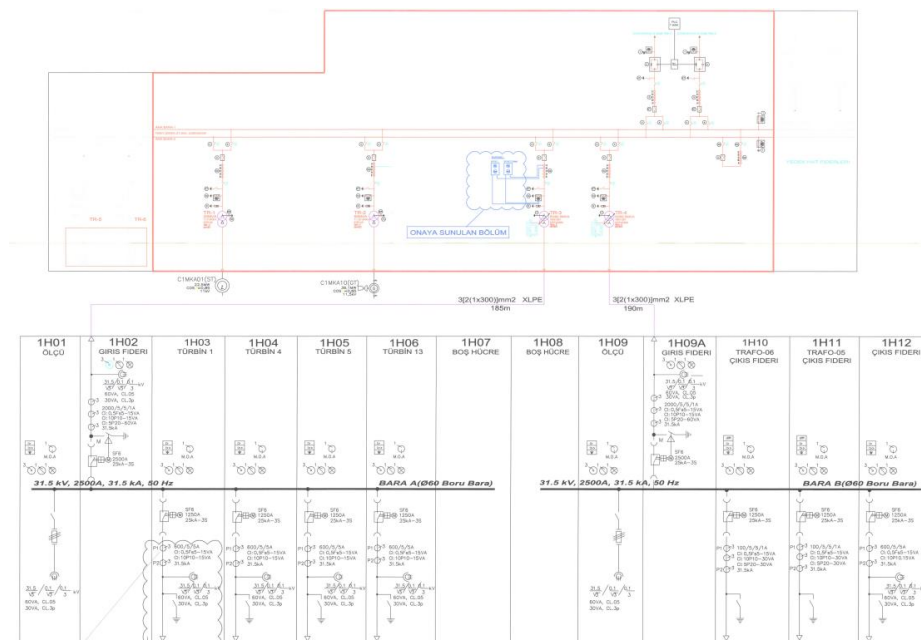


Figure 3. The single line diagram of the Project Activity Data will be stored electronically, during the crediting period and at least two years after the last issuance of credits for the wind farm project activity in the concerning crediting period. The Project Owner is responsible for storage of data received from the measuring devices. The site manager is responsible for data aggregation.

During the monitoring period, no breakdown or serious maintenance work has been experienced. Ordinary maintenance activities have been executed.

SECTION D. DATA AND PARAMETERS

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

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	EF_{grid}, CM, y
Unit	tCO ₂ /MWh
Description	Emission factor of the Turkish grid
Source of data	Ministry of Energy. Please see: https://enerjiapi.enerji.gov.tr/Media/Dizin/ETKB/Duyurular//0c6b62ea-bf2f-4fea-b9b3-28bc6f48ddf2_Bilgi_Formu_-_Web_Sitesi.pdf
Value(s) applied	0.6198

Choice of data or measurement methods and procedures	Official data
Purpose of data/parameter	Calculation of baseline emissions and to demonstrate contribution to the SDG13-13.2.2
Additional comments	The emission factor of the Turkish grid is calculated ex-ante and has been fixed for the second crediting period.

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	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	EPIAS records																				
Value(s) applied	<table><tr><th>Period</th><th colspan="2">Generation (MWh)</th></tr><tr><td>28.03.2020-31.12.2020</td><td colspan="2">60,636.75</td></tr><tr><td>01.01.2021-31.12.2021</td><td colspan="2">78,467.04</td></tr><tr><td>01.01.2022-31.12.2022</td><td colspan="2">82,481.09</td></tr><tr><td>01.01.2023-31.01.2023</td><td colspan="2">6,241.50</td></tr><tr><td>Total</td><td colspan="2">227,826.38</td></tr></table>			Period	Generation (MWh)		28.03.2020-31.12.2020	60,636.75		01.01.2021-31.12.2021	78,467.04		01.01.2022-31.12.2022	82,481.09		01.01.2023-31.01.2023	6,241.50		Total	227,826.38	
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01.01.2023-31.01.2023	6,241.50																				
Total	227,826.38																				
Measurement methods and procedures	TEİAŞ is performing remote reading of the meters and monthly power meter readings are the basis for monitoring net electricity fed into the grid. EPIAŞ records will be used as the source of net generated electricity value and meter reading forms or OSF forms issued by TEİAŞ will be used for the crosscheck. Power meters belong to the Project Activity: <table><tr><th>Specifications</th><th>Primary Meter</th><th>Secondary Meter</th></tr><tr><td>Brand/Model</td><td>EMH</td><td>EMH</td></tr><tr><td>Serial Number</td><td>10962383</td><td>10962384</td></tr><tr><td>Accuracy of meters</td><td>C(0.5S)</td><td>C(0.5S)</td></tr></table>			Specifications	Primary Meter	Secondary Meter	Brand/Model	EMH	EMH	Serial Number	10962383	10962384	Accuracy of meters	C(0.5S)	C(0.5S)						
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Accuracy of meters	C(0.5S)	C(0.5S)																			

	The Latest Calibration Date of the Meter	26/05/2022	26/05/2022
	Power meters that were changed on 26.05.2022:		
	Specifications	Primary Meter	Secondary Meter
	Brand/Model	ACTARIS	ACTARIS
	Serial Number	53031805	53031806
	Accuracy of meters	C(0.5S)	C(0.5S)
	The Latest Calibration Date of the Meter	26/04/2019	26/04/2019
Monitoring frequency	The electricity is measured continuously and recorded at least monthly.		
QA/QC procedures	- A secondary meter is used for crosschecking the accuracy and both meters are calibrated if required. EPIAS records are considered as the main source for the net electricity and the values are crosschecked with the data measured by meters. Net electricity exported is crosschecked with Meter Reading Forms issued by Project owner and approved by governmental officers. - The calibration of the meters will 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 years¹⁰.		
Purpose of data	To measure the electricity produced and supplied to the grid and thus calculation of emission reductions.		

¹⁰ Please see Clause 9: [Measuring instruments directive](#)

Additional comment	-
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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 (tCO ₂ /y) In accordance with ACM0002, baseline emissions include CO ₂ 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 CO ₂ emission factor for grid connected power generation in year y.
Source of data	Emission reductions were calculated as considering the EPIAS records for the net electricity generated and the emission factor for the grid, 0.6198 tCO ₂ /MWh, published by the Ministry of Energy.
Value(s) applied	141,189 tCO ₂ /y
Measurement methods and procedures	N/A
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 CO ₂ 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 comments	-

Relevant SDG Indicator/Safeguarding Principle	8.5.2. Unemployment rate, by sex, age and persons with disabilities
Data / Parameter	Number of employment
Unit	Number
Description	Number of people permanently working for the operation of the project
Source of data	Social Security System (SGK)
Value(s) applied	3
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	8.8.1. Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status
Data / Parameter	a) Number of trainings 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) Attendance records or training certificates b) Social Security Records		
Value(s) applied	Training certificates and training attendance lists are available to the VVB.		
	No	Date	Training
	1	14/01/2021	Occupational Health and Safety
	2	02/09/2022	Working at Heights Refresher
	3	15/03/2023	Working at Heights Refresher
	4	23/03/2023	Working at Heights Refresher
Measurement methods and procedures	Social Security Records, training certificates or training attendance lists		
Monitoring frequency	Continuously		
QA/QC procedures	Social Security Records, training certificates or training attendance lists are provided during each monitoring period.		
Purpose of data	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		
Additional comment	-		

Relevant SDG Indicator/Safeguarding Principle	Safeguarding Principle 9.10: High Conservation Value Areas and Critical Habitats
Data / Parameter	Number of effected birds and bats
Unit	N/A
Description	Site monitorings and recording of the same in logbooks for nests and carcasses by the Project Owner
Source of data	Monitorings of site staff – logbooks
Value(s) applied	N/A
Measurement methods and procedures	N/A
Monitoring frequency	Annually
QA/QC procedures	N/A

Purpose of data	To monitor compliance to Safeguarding Principle Principle 9.10: High Conservation Value Areas and Critical Habitats
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:

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

where:

BE_y Baseline emissions in year y (tCO₂)

$EG_{PJ,y}$ 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)

$EF_{grid,CM}$ 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". (tCO₂/MWh)

$$BE_y = 91,570 \times 0.6198 = 56,755 \text{ tCO}_2$$

Table 9 - 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]
Mar-20	929.71	40.45	889.26	0.6198	551
Apr-20	7,317.31	40.50	7,276.81	0.6198	4,510
May-20	3,498.72	62.19	3,436.53	0.6198	2,129
Jun-20	3,613.57	59.13	3,554.44	0.6198	2,203
Jul-20	9,608.89	4.83	9,604.06	0.6198	5,952
Aug-20	7,099.63	21.20	7,078.43	0.6198	4,387
Sep-20	8,114.54	30.29	8,084.25	0.6198	5,010
Oct-20	3,552.82	66.38	3,486.44	0.6198	2,160
Nov-20	9,344.22	20.25	9,323.97	0.6198	5,778
Dec-20	7,916.51	13.95	7,902.56	0.6198	4,898
Jan-21	9,507.41	6.17	9,501.24	0.6198	5,888
Feb-21	7,654.83	17.61	7,637.22	0.6198	4,733
Mar-21	6,386.74	41.39	6,345.35	0.6198	3,932
Apr-21	4,661.97	54.37	4,607.60	0.6198	2,855
May-21	4,386.17	48.97	4,337.20	0.6198	2,688
Jun-21	2,254.15	65.47	2,188.68	0.6198	1,356
Jul-21	6,534.18	40.66	6,493.52	0.6198	4,024
Aug-21	5,365.01	55.42	5,309.59	0.6198	3,290
Sep-21	7,242.86	17.20	7,225.66	0.6198	4,478
Oct-21	7,600.05	14.21	7,585.84	0.6198	4,701
Nov-21	7,099.30	41.93	7,057.37	0.6198	4,374
Dec-21	10,190.17	12.40	10,177.77	0.6198	6,308
Jan-22	7,391.74	23.10	7,368.64	0.6198	4,567
Feb-22	6,618.52	29.75	6,588.77	0.6198	4,083
Mar-22	8,684.78	13.05	8,671.73	0.6198	5,374
Apr-22	6,312.22	44.85	6,267.37	0.6198	3,884
May-22	4,138.00	66.89	4,071.11	0.6198	2,523
Jun-22	6,848.34	21.24	6,827.10	0.6198	4,231

Jul-22	9,721.69	5.04	9,716.66	0.6198	6,022
Aug-22	6,809.29	30.38	6,778.91	0.6198	4,201
Sep-22	5,648.03	32.52	5,615.51	0.6198	3,480
Oct-22	7,985.07	18.80	7,966.27	0.6198	4,937
Nov-22	6,487.34	16.61	6,470.73	0.6198	4,010
Dec-22	6,169.33	31.02	6,138.31	0.6198	3,804
Jan-23	6,270.44	28.94	6,241.50	0.6198	3,868
2020 Vintage (28.03.2020- 31.12.2020)	60,995.92	359.17	60,636.75	0.6198	37,578
2021 Vintage (01.01.2021- 31.12.2021)	78,882.84	415.80	78,467.04	0.6198	48,627
2022 Vintage (01.01.2022- 31.12.2022)	82,814.35	333.26	82,481.09	0.6198	51,116
2023 Vintage (01.01.2023- 31.01.2023)	6,270.44	28.94	6,241.50	0.6198	3,868
Total	228,963.55	1,137.17	227,826.38	0.6198	141,189

The emission factor ($EF_{grid,CM}$) is taken as 0.6198 tCO₂/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 and training is 0. In the absence of the project activity, there wouldn't be employment of new staff.

The positions at the wind farm require skilled workers, which is achieved by adequate training. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.

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

SDG 13

In accordance with the methodology ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources”, 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,

$$PE_y = 0$$

SDG 7

The project value for renewable energy generation is 227,826.38MWh.

SDG 8

The project value for employment is 3. In total, 3 employees are working for PP at the site.

2 trainings as “Occupational Health and Safety” and “Working at Heights Refresher” are given to the employees.

E.3. Calculation of leakage

In line with the requirements of ACM0002 Version 20.0 “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	Climate Action	141,189 VERs	0	141,189 VERs

7	Affordable and Clean Energy	0	227,826.38 MWh	227,826.38MWh
8	Decent Work and Economic Growth (Number of employment)	0	3	3

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.

$$BE_y = EGP_{J,y} \times EF_{grid,CM}$$

Equation (1)

where:

- BE_y

= Baseline Emissions in year y (tCO₂)
- EGP_{J,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)

$$BE_y = 227,826.38MWh \times 0.6198 \text{ tCO}_2/MWh = 141,189 \text{ tCO}_2$$

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 ¹¹ achieved during this monitoring period
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¹¹ Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

13	166,067 tCO ₂	141,189 tCO ₂
7	267,936.33 MWh	227,826.38MWh
8	3 employees are employed.	3 employees are employed.
	All employees to be trained.	All employees were trained.
	All employees to have a fair wage and fair working hours.	All employees have a fair wage and fair working hours.
	All employees to have no occupational injuries.	All employees have no occupational injuries.

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

SDG13

Annual estimated emission reduction in ex ante calculation of registered PDD is 56,755 tCO₂, which corresponds to 161,713tCO₂ for 1040 days. And actual emission reduction achieved during this monitoring period is 141,189 tCO₂ (for 28/03/2020-31/01/2023, 1040 days).

SDG 7

Estimated electricity generation in ex ante calculation of registered PDD is 91,570 MWh, which corresponds to 260,911.78MWh for 1040 days. And net electricity generation achieved during this monitoring period is 227,826.38MWh (for 28/03/2020-31/01/2023, 1040days).

SDG8

The baseline value for the number of employments is 3. In the absence of the project activity, there wouldn't be employment of new staff. For the project activity, 3 employees have been hired.

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

SDG 7

The difference between achieved electricity generation and amount estimated ex ante -12.7% during the monitoring period. This marginal spread from the estimation is probably due to weather conditions.

Table 10 – Comparison of electricity generation

Vintage	Period	Total Days	Amount achieved during this monitoring period (MWh)	Amount estimated ex ante (MWh)	Difference (MWh)	Difference (%)
2020	28.03.2020-31.12.2020	279	60,636.75	69,994.60	-9,357.85	-13.4%
2021	01.01.2021-31.12.2021	365	78,467.04	91,570.00	-13,102.96	-14.3%
2022	01.01.2022-31.12.2022	365	82,481.09	91,570.00	-9,088.91	-9.9%
2023	01.01.2023-31.01.2023	31	6,241.50	7,777.18	-1,535.68	-19.7%
Total		1040	227,826.38	260,911.78	-33,085.40	-12.7%

SDG13

The difference between achieved electricity generation and amount estimated ex ante -12.7% during the monitoring period. This marginal spread from the estimation is probably due to weather conditions.

Table 11 – Comparison of emission reductions

Vintage	Period	Total Days	Amount achieved during this monitoring period (tCO2e)	Amount estimated ex ante (tCO2e)	Difference (tCO2e)	Difference (%)
2020	28.03.2020-31.12.2020	279	37,578	43,383	-5,805	-13.4%
2021	01.01.2021-31.12.2021	365	48,627	56,755	-8,128	-14.3%
2022	01.01.2022-31.12.2022	365	51,116	56,755	-5,639	-9.9%

2023	01.01.2023-31.01.2023	31	3,868	4,820	-952	-19.8%
Total		1040	141,189	161,713	-20,524	-12.7%

SDG 8

If the project hadn't been realized, there wouldn't be employment opportunity for employees. Therefore, achieved impact for this SDG is 3.

SECTION F. SAFEGUARDS REPORTING

No	Indicator	Explanation
1	Water quality and quantity	Domestic wastewater is collected in an impervious septic tank and transferred by sewage truck to the local municipality sewage system as per the "Regulation on Control of Water Contamination". <u>During the MP, wastewater was transferred only once on 05/08/2021¹².</u> The company has not discharged any wastewater to the surface or ground water.
2	Soil Condition	Discarded electronic equipments and used filters which contain hazardous materials, used fluorescent lamps and oil spills generated in the Project activity have been stored in Central Waste Accumulation Area properly and are transferred after the legally permitted temporary storage period via licensed company.
3	Other pollutants (Noise)	Noise Monitoring Reports were prepared and submitted during both the validation and operational phases of the project. According to the results of the study regarding the operational phase, it's been concluded that the measured values are below the permitted limits.

¹²Records have been provided to the VVB.

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 mechanism is in place, and this was also confirmed by the interviewed local villagers and Mahmudiye Village Mukhtar (Village Head) during the site visit of the last verification. A logbook is available in the Mukhtar's office and its purpose is so that local stakeholders can remain anonymous regarding their input. In addition, the contact information of plant responsible is available in Mukhtar, any complaints or requests can be forwarded to the Project Owner. No negative inputs have been received during this monitoring period.

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

All requests/complaints received from stakeholders have been resolved. 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