

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)	GS947
Title of the project (s) covered by monitoring report	KILLIK WIND POWER PLANT
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	V9
Version number of the monitoring report	54
Completion date of the monitoring report	1321/036/20243
Date of project design certification	14/09/2012
Date of Last Annual Report	29/12/2022
Monitoring period number	3
Duration of this monitoring period	16/09/2021 – 31/03/2023
Project Representative	1. Eksim Enerji 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
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	138,580.89	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	85,883	VERs

Table 2 – Product Vintages

		Amount Achieved
Start Dates	End Dates	VERs
16/09/2021	31/12/2021	15,501
01/01/2022	31/12/2022	55,956
01/01/2023	31/03/2023	14,426

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

The Killik Wind Power Plant, which is developed by Tokat Enerji A.Ş.¹ (hereafter referred to as the “project owner”) is a grid-connected onshore wind farm project located in Tokat Province of Turkey.

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.

Total capacity of the project activity is 40.0 MW. There are sixteen Nordex N100 turbines, each having a capacity of 2.5 MWs. The electricity is transmitted via a 15 km transmission line to Tokat OSB Transformer Station, 154 kV.

The project has been in implementation since October 13th, 2011. The site preparation for the first wind turbines (including the construction of roads, transmission line, etc.) started in July 2008 and generation started on October 13th, 2011. It reached its full capacity on December 17th, 2011. First, 8 turbines (20 MW) were commissioned on 13/10/2011. Secondly, 6 turbines were commissioned (15 MW) on 01/12/2011 and the last two turbines were commissioned on 17/12/2011.

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 displaces the same amount of electricity generated by the grid dominated by fossil fired power plants.

Construction work started on 24/09/2010, and operation of the plant started on 13/10/2011.

As the generation license has been revised for capacity extension, eighteen turbines were added to the project on 21/07/2017, 04/08/2017 and 08/09/2017. The installed capacity of the project has been raised to 94 MWm/89.5 MWe with the revision. As only the registered capacity of the project is considered, the electricity generation and the

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.”.)

emission reduction of the added units are ignored for this monitoring period. The new turbine numbers are T17, T18, T19, T20, T21, T22, T23, T24, T25, T26, T27, T28, T29, T30, T31, T32, T33 and T34. The newly added turbines type is N117/3000 and - these added turbines are not included in this MP. The commissioning dates of the newly added turbines are as below:

Table 3 - The operation start dates of the turbines

Date	Turbine No
21/07/2017	17,18,19,28,29,32 and 34
04/08/2017	25,26,27 and 33
08/09/2017	20,21,22,23,24,30 and 31

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

Table 4 - Technical specifications of the installed turbines²

Model of Turbine	Parameter	Unit	Value
Nordex N100	Rated Power	kW	2500
	Rotor Diameter	m	100
	Hub Height	m	80
	Rated Wind Speed	m/s	14.0-20.0
	Operating Wind	m/s	4.0-20.0

The estimated amount of GHG emission reduction is 55,523 tonnes CO₂e per year in the registered PDD. During its operation during this monitoring period, the actualized net electricity generation is 138,580.89 MWh. The actual emission reduction has been calculated as 85,883 tonnes CO₂ for this monitoring period.

² Please see the registered PDD.

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

Important milestones of the project activity are summarized as follows:

Table 5 - Milestones

Date	Activity
24/07/2008	License obtained from EMRA
01/06/2009	Board decision for investment and carbon finance support (Prior consideration)
28/12/2009	EIA Not Required
10/08/2010	Local Stakeholder Consultation Meeting
16/09/2010	PEM's declaration of non-use of ODA funding
24/09/2010	Subcontractor Agreement for the Construction of Transmission Line (start date of construction) (Project activity start date)
24/09/2010	Subcontractor Agreement for the Excavation and Ground Works (Project activity start date)
06/10/2010	Agreement with the turbine supplier
08/10/2010	Construction Permit by Tokat Provincial Council
17/10/2010	Leasing Agreement with the financial institution
20/10/2010	Subcontractor Agreement for the Electromechanical Works
27/10/2010	Wind and Energy Yield Estimation Report
09/12/2010	Subcontractor Agreement for General Construction Works
15/12/2010	Revised Feasibility Report
11/01/2011	Agreement With the DOE
09/02/2011	Service Agreement for Work Security Services
15/03/2011	Start of VER Validation
29/04/2011	Positive EIA Decision for Transmission Line
13/10/2011	First Index Protocol
13/10/2011	Commissioning date of first 8 turbines (20 MW)
01/12/2011	Commissioning date of 6 turbines (15 MW)
17/12/2011	Commissioning date of first 2 turbines (5 MW)
29/05/2012	Final Validation Report
14/09/2012	Date of Gold Standard Registration

04/08/2016	The last revision of the Generation License
21/07/2017	Commissioning date of 7 turbines of added capacity (21 MW)
04/08/2017	Commissioning date of 4 turbines of added capacity (12 MW)
08/09/2017	Commissioning date of 7 turbines of added capacity (21 MW)
13/10/2011	Start date of the 1 st Crediting Period
13/10/2011	Start date of the 1 st Monitoring Period
31/12/2013	End date of the 1 st Monitoring Period
28/08/2016	Start date of the 2 nd Monitoring Period
12/10/2018	End date of the 2 nd Monitoring Period
12/10/2018	End date of the 1 st Crediting Period
13/10/2018	Start date 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
12/10/2025	End date of the 2 nd Crediting Period

A.2. Location of project

The project location is in the mid-Black Sea Region, Tokat Province of Turkey. The project site is located amongst Killik, Cayoren and Tekneli Villages.

Table 6 - Turbine Coordinates of the Project Activity³

Turbine #	E	N
1	289390,000	4450211,000
2	289778,000	4450597,000
3	289974,000	4450522,000
4	290167,000	4450752,000
5	290650,000	4450774,000

³ Registered PDD. Turbines with turbine no T17, T18, T19, T20, T21, T22, T23, T24, T25, T26, T27, T28, T29, T30, T31, T32, T33 and T34 are not included in this MP.

6	291042,000	4450993,000
7	291416,000	4450883,000
8	291753,000	4450504,000
9	292090,000	4451322,000
10	292792,000	4451560,000
11	292732,000	4450876,000
12	292878,000	4450730,000
13	293091,000	4451296,000
14	293338,000	4451435,000
15	294023,000	4451205,000
16	294246,000	4451426,000
17	292606,000	4451633,000
18	292396,000	4451674,000
19	292222,000	4451785,000
20	295710,000	4451426,000
21	295590,000	4451715,000
22	295374,000	4451831,000
23	295048,000	4451762,000
24	294844,000	4451818,000
25	289620,000	4450713,000
26	289505,000	4450886,000
27	291027,000	4450509,000
28	290859,000	4450855,000
29	293835,000	4451510,000
30	294441,000	4451045,000
31	294678,000	4451168,000
32	291684,000	4451052,000
33	289287,000	4450518,000
34	291880,000	4451276,000

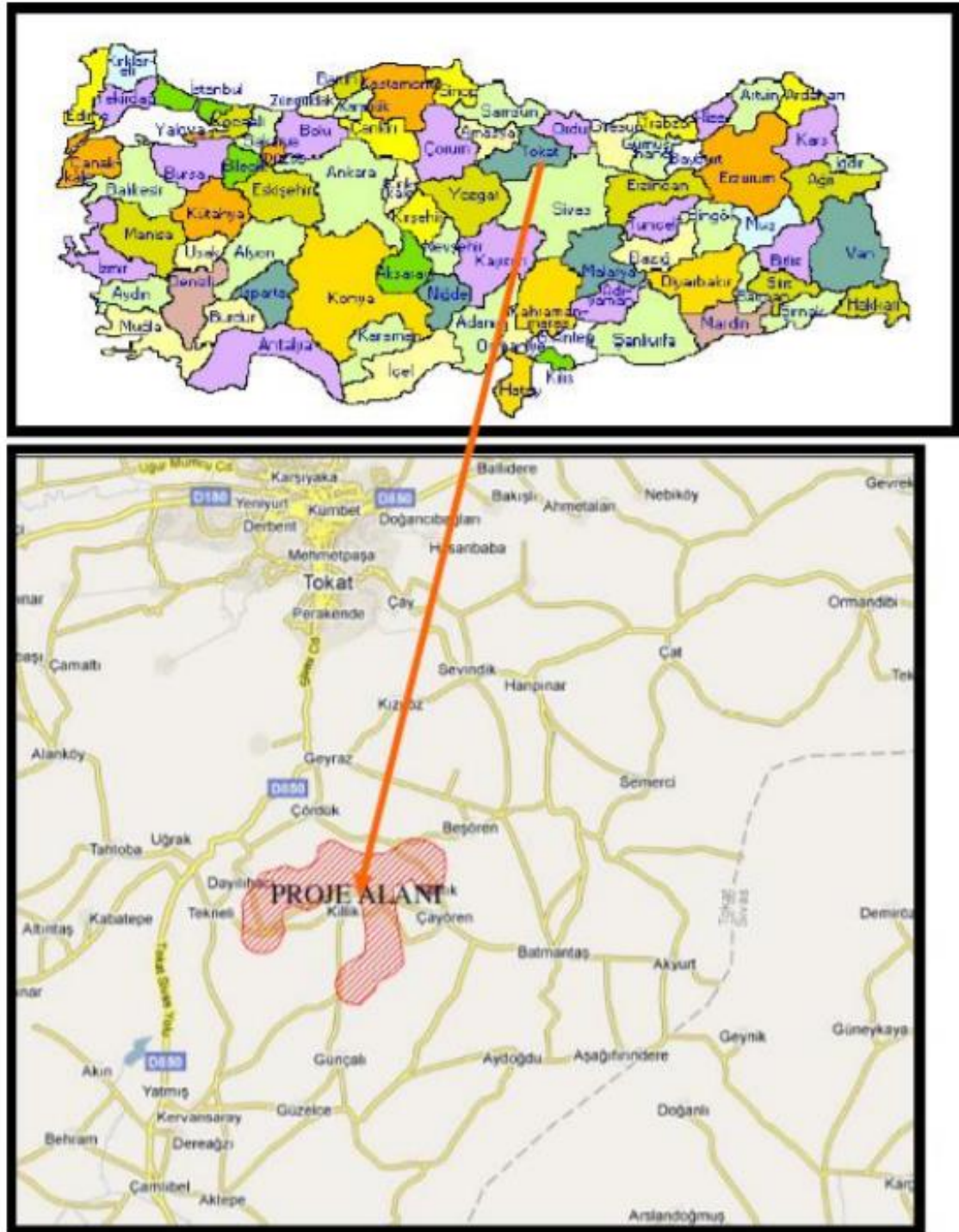


Figure 1. Project Location on Turkey Map Site Layout

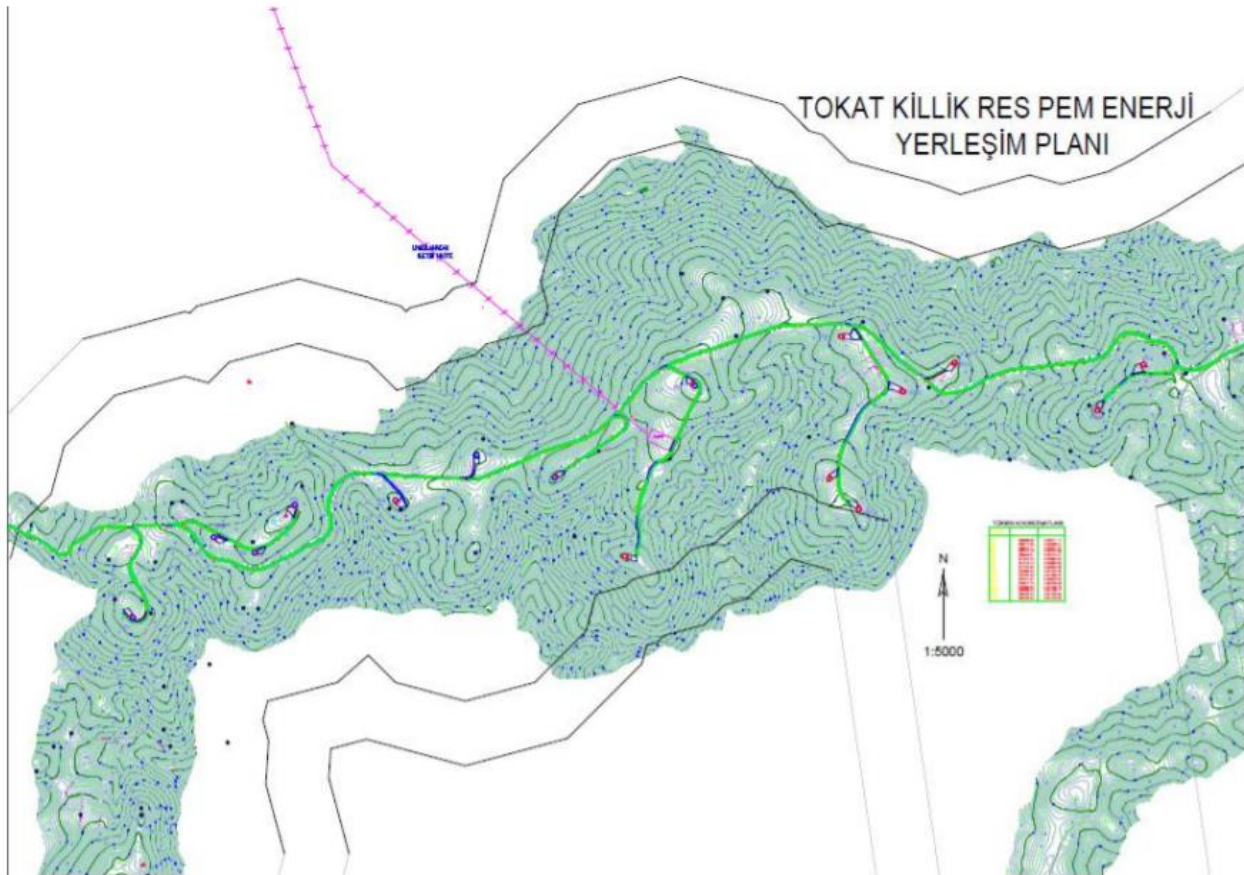


Figure 2. Site Layout

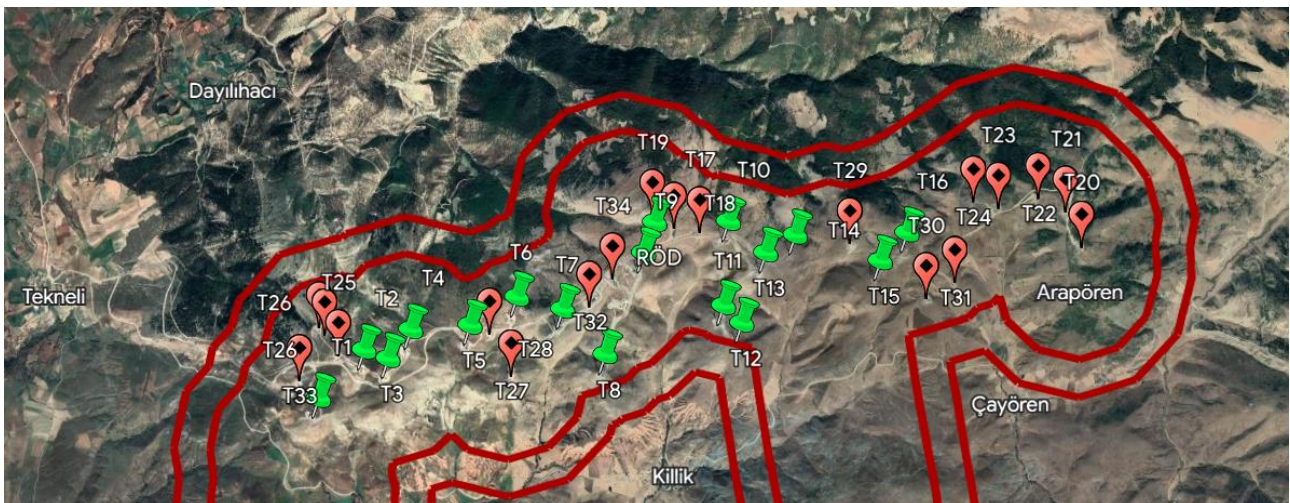


Figure 3. Location of 34 turbines in the project activity (excluding "RÖD" pin)

A.3. Reference of applied methodology

Methodology: ACM0002, Grid-connected electricity generation from renewable sources- Version 20.0⁴

Used tools:

- Tool to calculate the emission factor for an electricity system, Version 07.0⁵
- Tool for the demonstration and assessment of additionality, Version 07.0.0⁶
- 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 project was registered on 14/09/2012 with a renewable crediting period. The second crediting period is 7 years.

The first crediting period was between 13/10/2011 - 12/10/2018.

The second crediting period is between 13/10/2018 – 12/10/2025.

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The proposed project activity involves the installation of 16 units of wind turbines with a total installed capacity of 40.0 MW. The estimated annual electricity generation of the project is 85,657.50 MWh/year.

The start date of the project activity is 24/09/2010 as the date of Subcontractor Agreement for the excavation and ground works. The first temporary acceptance protocol signed by the Ministry of Energy and Natural Resources is dated 13/10/2011 for the commissioning of eight turbines. The second temporary acceptance protocol with

⁴ <https://cdm.unfccc.int/UserManagement/FileStorage/AG07ZJQ3EXD42LT5YV9HR16M8KINPO>

⁵ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

⁶ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

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

the Ministry was signed on 01/12/2011 for the other six turbines. The third temporary acceptance protocol with the Ministry was signed on 17/12/2011 for the other two turbines.

The Nordex N100 2.5 MW turbine model was selected for the 16 turbines of the project. It's a three-bladed variable-speed wind turbine generator with a rotor diameter of 100 m. The hub height of the turbines is 80 m. The nominal power of each turbine is 2500 kW. The turbines are connected to the Tokat OSB Transformer Station, 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. 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.

Table 7 – The technical details of the 13 turbines involved in the Project Activity⁸

Turbine Model	Nordex N100
Turbine type	3-bladed, horizontal axis
Rated power	2500 kW
Rated wind speed	14 m/s - 20 m/s
Cut-in/cut-out wind speed	4 m/s - 20 m/s
Rotor diameter	100 m
Hub height	80 m
Design life	20 years

Table 8 – The technical details of the power meters belong to the Project Activity

TR-1		
Specifications	Primary Meter	Secondary Meter
Brand/Model	ITRON (SL7000)	ITRON (SL7000)
Serial Number	3574743	3574744

⁸ Ministry Acceptance Protocols are available to the VVB.

Accuracy of meters	0.2S	0.2S
The Latest Calibration Date of the Meter	31/10/2022	31/10/2022

TR-2		
Specifications	Primary Meter	Secondary Meter
Brand/Model	ITRON (SL7000)	EMH
Serial Number	3574741	3574742
Accuracy of meters	0.2S	0.2S
The Latest Calibration Date of the Meter	31/10/2022	31/10/2022

Table 9 – The details of the power meters that were changed on 18/07/2017

Specifications	Primary Meter	Secondary Meter
Brand/Model	ELSTER	ELSTER
Serial Number	424798	424799
Accuracy of meters	C(0.5S)	C(0.5S)

B.1.1. Forward Action Requests

FAR # 1: In-line with GS4GG Principles and Requirements, VVB and PP shall consider the following rule after Design Renewal Certification is achieved: 5.1.29: 1st verification shall be completed within two years after the certification is achieved.

Answer: The date of Design Renewal Review is 14/09/2022, therefore the verification process complies with the rule.

FAR # 2: In-line with GS4GG Principles and Requirements, VVB and PP shall consider the rule below for future monitoring activities: 5.1.39: An annual update report shall be provided to GS, when successfully Transitioned to GS4GG, for each monitoring year by the end of next calendar year for which verification is not completed.

Answer: The Annual Report will be provided in 2023.

FAR # 3: At the time of performance review for second crediting period, VVB shall check the start date of monitoring period. The start date of monitoring period for 2nd

crediting period will be the date when the project was submitted for design renewal i.e 16/09/2021. However, the start date of crediting period will remain the same as in the registered GS-PDD.

Answer: The start date of crediting period has been considered as it is in registered GS-PDD.

FAR #4: When resuming remote site visit, VVB shall Interview a sample group of local stakeholders regarding project Impact, availability of grievance means and safeguarding principles.**Answer:** A physical site visit was conducted by the VVB. VVB has confirmed that there are no problems with the functioning of the grievance mechanism.

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:

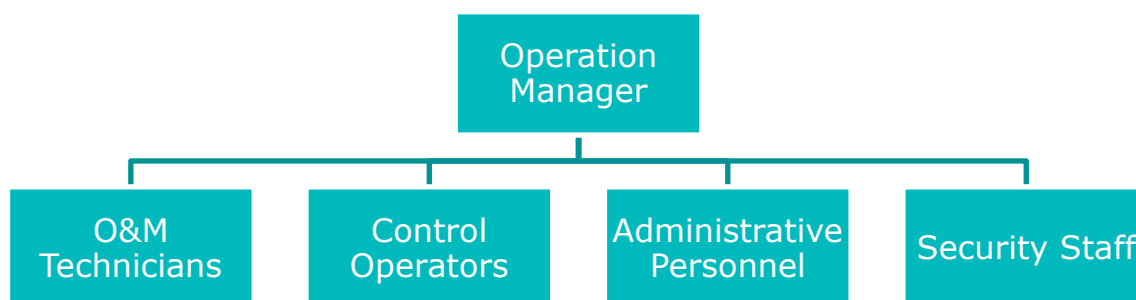


Figure 2. The management structure for the plant operation

The Operation Manager is responsible for the whole management of the Project Activity. For the operation of the project activity, there are six O&M technicians, four control operators, two administrative personnel and four security guards working for the project activity. There are 19 employees working for Project Owner at the site.

Four power meters are installed at the grid interface of the project. Two of them are the main meters, and the other two are spare meters of the main meters for cross-checking. All 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).

The old main meter and the old backup meter for TR-1 were ELSTER branded. The serial numbers were "424798" for the main meter and "424799" for the spare meter. Both meters had an accuracy class of 0.5S. These meters were replaced with the TR-1 meters (Main meter: 3574743, Spare meter: 3574744) on 18/07/2017. These TR-1 electricity meters (Serial number of Main meter: 3574743, serial number of Spare meter: 3574744) currently have no current and are not operational.

The existing and in use main meter and backup meter are ITRON branded. The serial numbers are "3574741" for the main meter and "3574742" for the spare meter. Both

meters have an accuracy class of 0.2S. The latest test date of the meters is 31/10/2022.⁹ The meters are calibrated every ten years. Additionally, the meters are tested every two years¹⁰.

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.

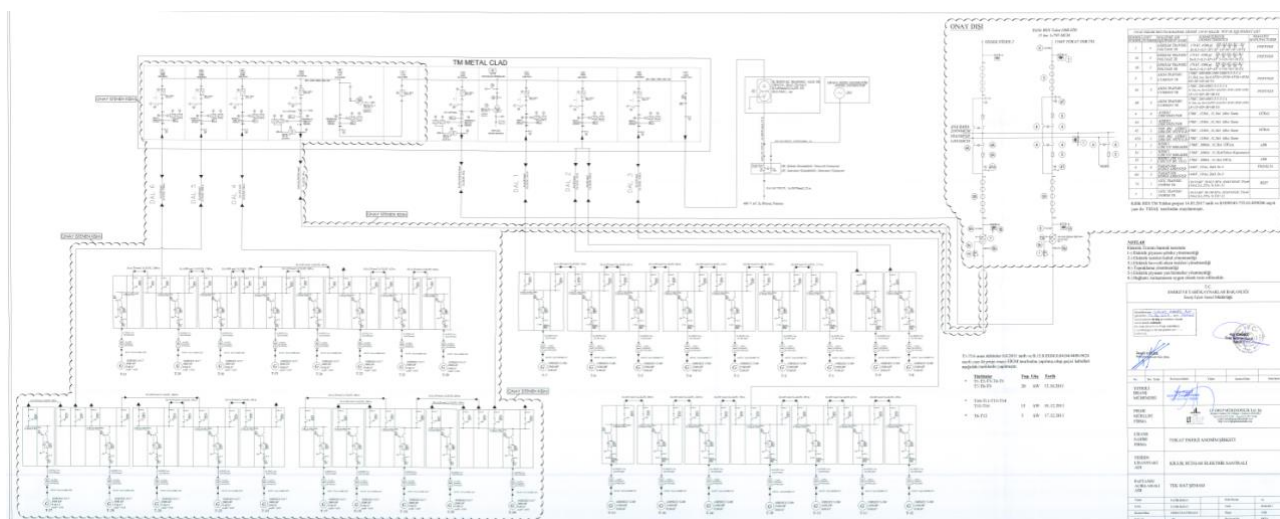


Figure 3. The single line diagram of the Project Activity

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.

⁹ Meter Test Protocols have been provided to the VVB.

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

The primary source is the EPIAS records. Net electricity exported is crosschecked with Meter Reading Forms records. 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	Emission factor of the Turkish grid determined ex-ante. It's been published by the Ministry of Energy for 2018 on 03/09/2020. 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	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	EGPJ, y, facility (SDGI 7.2.1)																																							
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	25,021.66 MWh in 2021 (16/09/2021 – 31/12/2021) 90,290.44 MWh in 2022 (01/01/2022 – 31/12/2022) 23,278.80 MWh in 2023 (01/01/2023 – 31/03/2023) The total net electricity generation for this monitoring period (16/09/2021 – 31/03/2023) is 138,580,89MWh.																																							
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. EPIAŞ 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 TEİAŞ.] Net electricity generation supplied by the project plant to the <u>grid</u> [MWh] = Electricity supplied to the grid [MWh] - Electricity consumption from the grid [MWh] Meters’ information: TR-1 <table><tr><td>Specifications</td><td>Main meter</td><td>Spare Meter</td></tr><tr><td>Manufacturer</td><td>ITRON</td><td>ITRON</td></tr><tr><td>Serial No</td><td>3574743</td><td>3574744</td></tr><tr><td>Date of Installation</td><td>18/07/2017</td><td>18/07/2017</td></tr><tr><td>Latest test date of the meter</td><td>31/10/2022</td><td>31/10/2022</td></tr><tr><td>Accuracy Class</td><td>0.2S</td><td>0.2S</td></tr></table> TR-2 <table><tr><td>Specifications</td><td>Main meter</td><td>Spare Meter</td></tr><tr><td></td><td></td><td></td></tr><tr><td>Manufacturer</td><td>ITRON</td><td>ITRON</td></tr><tr><td>Serial No</td><td>3574741</td><td>3574742</td></tr><tr><td>Date of Installation</td><td>14/07/2017</td><td>14/07/2017</td></tr><tr><td>Latest test date of the meter</td><td>31/10/2022</td><td>31/10/2022</td></tr><tr><td>Accuracy Class</td><td>0.2S</td><td>0.2S</td></tr></table>	Specifications	Main meter	Spare Meter	Manufacturer	ITRON	ITRON	Serial No	3574743	3574744	Date of Installation	18/07/2017	18/07/2017	Latest test date of the meter	31/10/2022	31/10/2022	Accuracy Class	0.2S	0.2S	Specifications	Main meter	Spare Meter				Manufacturer	ITRON	ITRON	Serial No	3574741	3574742	Date of Installation	14/07/2017	14/07/2017	Latest test date of the meter	31/10/2022	31/10/2022	Accuracy Class	0.2S	0.2S
Specifications	Main meter	Spare Meter																																						
Manufacturer	ITRON	ITRON																																						
Serial No	3574743	3574744																																						
Date of Installation	18/07/2017	18/07/2017																																						
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Serial No	3574741	3574742																																						
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Latest test date of the meter	31/10/2022	31/10/2022																																						
Accuracy Class	0.2S	0.2S																																						

	Meters that were changed on 18/07/2017: TR-1 <table><tr><td>Specifications</td><td>Main meter</td><td>Spare Meter</td></tr><tr><td>Manufacturer</td><td>ELSTER</td><td>ELSTER</td></tr><tr><td>Serial No</td><td>424798</td><td>424799</td></tr><tr><td>Accuracy Class</td><td>0.5S</td><td>0.5S</td></tr></table> The latest meter test dates are 27/08/2018,01/10/2020 and 31/10/2022.	Specifications	Main meter	Spare Meter	Manufacturer	ELSTER	ELSTER	Serial No	424798	424799	Accuracy Class	0.5S	0.5S
Specifications	Main meter	Spare Meter											
Manufacturer	ELSTER	ELSTER											
Serial No	424798	424799											
Accuracy Class	0.5S	0.5S											
QA/QC procedures	• Back-up meters are used for crosschecking the accuracy and all 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 fulfill, which are categorized according to the installed capacity. The periodical test or maintenance is the responsibility of TEİAŞ. Since TEİAŞ meters are sealed by TEİAŞ, the project proponent cannot intervene with the devices. In addition, the meters are calibrated every ten years and the meters are tested every two years¹¹. • The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. EPIAŞ 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.												
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	The existing and in use power meters are the main meter with the serial number "3574741" and the backup meter with the serial number "3574742" connected to the TR-2 transformer. Both meters are ITRON branded. The main meter with the serial number "3574743" and the backup meter with the serial number "3574744" connected to the TR-1 transformer are not in use and there is no current on them. As can be seen from the EPIAS												

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

	records, the production and consumption values of the meters connected to the TR-1 transformer are 0.
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Data / Parameter	ER _y (SDGI 13.3.2)	
Unit	tCO ₂ /y	
Description	Emission reductions by the project activity in year y (t CO ₂ /yr) In accordance with ACM0002, baseline emissions include CO ₂ from electricity generation in power plants 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	Both measured and calculated. 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	Vintages	Achieved emission reductions
	16/09/2021 – 31/12/2021	15,501 tCO ₂
	01/01/2022 – 31/12/2022	55,956 tCO ₂
	01/01/2023 – 31/03/2023	14,426 tCO ₂
	The achieved emission reductions for this monitoring period (16/09/2021 – 31/03/2023) is 85,883 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 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 comment	-
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Data / Parameter	Number of employments (SDGI 8.5.2)
Unit	Number
Description	Number of people permanently working for the operation of the project
Source of data	Social Security System (SGK)
Value(s) applied	19 personnel are working for the Killik: 1 Operation Manager 7 O&M Technicians 4 Control Operators 2 Administrative Personnel 4 Security Staff (Subcontractor-Atak Security) 1 Nordex employee 12 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	Number of trainings (SDGI 8.8.1)		
Unit	Number		
Description	Number of training sessions held for Health&Safety		
Source of data	Attendance records or training certificates		
Value(s) applied	Training and attendance certificates have been provided to the VVB. <u>12 technical employees have taken the trainings.</u> get		
	No	Date	Training
	1	03/01/2021	Occupational Health and Safety
	2	01/11/2021	Maintenance
	3	20/09/2022	Tower Control
	4	06/10/2022	First Aid
	5	15/12/2022	Occupational Health and Safety
Measurement methods and procedures	Attendance records or training certificates		
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	-

Data / Parameter	Waste oil produced during the operation of the power plant
Unit	N/A
Description	Waste oil produced during the operation of the power plant
Source of data	Hazardous and domestic waste disposal records;
Value(s) applied	Waste oil is stored in the project area by the company and collected by the authorised companies accredited by the ministry.
Measurement methods and procedures	N/A
Monitoring frequency	Once for each year of operation
QA/QC procedures	N/A
Purpose of data	To monitor compliance to Safeguarding Principle 4.3.5 Hazardous and Non-hazardous waste
Additional comment	-

Data / Parameter	Biodiversity
Unit	N/A
Description	Impact on bird/bat carcasses and nests
Source of data	Monitorings of Project Participant's appointed personnel
Value(s) applied	There is no negative impact of the project on birds
Measurement methods and procedures	Bird/bat carcasses and nests will be monitored.
Monitoring frequency	Weekly
QA/QC procedures	N/A
Purpose of data	To monitor compliance to Safeguarding Principle 4.3.10: 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:

The baseline emission BE_y (tCO₂e) during the monitoring period results from:

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

Where:

BE _y	Baseline emissions in year y (tCO ₂ e/y)
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)

EF_{grid,CM,y} value is fixed as 0.6198 tCO₂/MWh for the crediting period of seven years.

$$BE_y = 138,580.89 \text{ MWh} * 0.6189 \text{ tCO}_2/\text{MWh} = 85,883 \text{ tCO}_2$$

Table 10 - Baseline Emissions

Month	(A) Electricity supplied to the grid [MWh]	(B) Electricity consumed from	(C) = (A) - (B) EG (ID 8) Net electricity supplied to the	EF [tCO ₂ /MWh]	Baseline emission: ER = EG * EF [t CO ₂ -eq]	Adjusted net electricity supplied to the grid	Adjusted baseline emission: ER = EG *
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		the grid [MWh]	grid [MWh]			[MWh] (E) = (D) - (B)	EF [t CO ₂ -eq]
Sep-21 (16-30/09/2021)	8,304.16	20.41	8,283.75	0.6198	5,134	3,407.68	2,112
Oct-21	10,200.55	54.90	10,145.65	0.6198	6,288	4,010.27	2,485
Nov-21	18,312.02	37.18	18,274.84	0.6198	11,327	7,126.78	4,417
Dec-21	28,785.82	18.43	28,767.39	0.6198	17,830	10,466.93	6,487
Jan-22	28,311.51	28.90	28,282.61	0.6198	17,530	10,321.60	6,397
Feb-22	23,721.36	28.74	23,692.62	0.6198	14,685	8,637.07	5,353
Mar-22	15,956.21	36.07	15,920.14	0.6198	9,867	7,110.69	4,407
Apr-22	19,775.35	31.89	19,743.46	0.6198	12,237	7,275.17	4,509
May-22	11,505.00	39.85	11,465.15	0.6198	7,106	4,705.83	2,916
Jun-22	14,980.70	32.86	14,947.84	0.6198	9,265	6,254.88	3,876
Jul-22	35,067.12	1.73	35,065.39	0.6198	21,734	14,687.29	9,103
Aug-22	18,771.53	20.51	18,751.02	0.6198	11,622	7,934.77	4,917
Sep-22	12,258.72	33.80	12,224.92	0.6198	7,577	4,925.68	3,052
Oct-22	13,393.30	38.12	13,355.18	0.6198	8,278	5,400.21	3,347
Nov-22	19,402.20	42.49	19,359.71	0.6198	11,999	7,497.54	4,646
Dec-22	13,842.62	46.22	13,796.40	0.6198	8,551	5,539.70	3,433
Jan-23	19,345.72	35.14	19,310.58	0.6198	11,969	7,374.86	4,570
Feb-23	19,666.30	16.40	19,649.90	0.6198	12,179	7,991.85	4,953
Mar-23 (01-31/03/2023)	20,278.25	19.53	20,258.72	0.6198	12,556	7,912.09	4,903
2021 Vintage (16.09.2021-31.12.2021)	65,602.55	130.92	65,471.63	0.6198	40,579	25,011.66	15,501
2022 Vintage (01.01.2022-31.12.2022)	226,985.62	381.18	226,604.44	0.6198	140,449	90,290.44	55,956
2023 Vintage (01.01.2023-31.03.2023)	59,290.27	71.07	59,219.20	0.6198	36,704	23,278.80	14,426
Total	351,878.44	583.17	351,295.27	0.6198	217,732	138,580.89	85,883

The emission factor ($EF_{grid, CM}$) is taken as 0.6198 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 number of employments 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 considered⁴. 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 138,580.89 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

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.

$$BE_y = EGPJ_{,y} \times EF_{grid,CM} \quad \text{Equation (1)}$$

where:

- BE_y = Baseline Emissions in year y (tCO₂e)

- $EG_{PJ,y}$ = 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 in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system"(tCO₂/MWh)

$$BE_y = 138,580,89 \text{ MWh} \times 0.6198 \text{ tCO}_2/\text{MWh} = 85,883 \text{ tCO}_2$$

Emission Reductions

$$ER_y = BE_y - PE_y - LE_y \quad \text{Equation (2)}$$

$$ER_y = 85,883 - 0 - 0$$

$$ER_y = 85,883 \text{ tCO}_2$$

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
13	tCO ₂ of emission reductions	85,883	0	85,883
7	MWh of renewable energy generated	0	138,580,89	138,580,89
8	Number of employments	0	19	19

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 ¹² achieved during this monitoring period
13	85,490	85,883
7	131,889.08	138,580.89
8	17	19

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

SDG13

The annual estimated emission reduction in ex ante calculation of registered PDD is 55,523 tCO₂, which corresponds to 85,490 tCO₂ for 562 days. And actual emission reduction achieved during this monitoring period is 85,883 tCO₂ (for 16/09/2021-31/03/2023, 562 days).

SDG 7

The annual estimated electricity generation in ex ante calculation of registered PDD is 85,657.50 MWh, which corresponds to 131,889.08 MWh for 562 days. And net electricity generation achieved during this monitoring period is 138,580.89 MWh (for 16/09/2021-31/03/2023, 562 days).

SDG8

The baseline value for the number of employments is 0. In the absence of the project activity, there wouldn't be employment of new staff. 19 employees are employed, currently.

¹² 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.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 5.1 % 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 (%)
2021	2021 Vintage (16.09.2021-31.12.2021)	107	25,011.66	25,110.55	-98.90	-0.4%
2022	2022 Vintage (01.01.2022-31.12.2022)	365	90,290.44	85,657.50	4,632.94	5.4%
2023	2023 Vintage (01.01.2023-31.03.2023)	90	23,278.80	21,121.03	2,157.77	10.2%
Total		562	138,580.89	131,889.08	6,691.81	5.1%

SDG13

The difference between achieved electricity generation and amount estimated ex ante 0.5 % -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 (%)

2021	2021 Vintage (16.09.2021- 31.12.2021)	107	15,501	16,277	-776	-4.8%
2022	2022 Vintage (01.01.2022- 31.12.2022)	365	55,956	55,523	433	0.8%
2023	2023 Vintage (01.01.2023- 31.03.2023)	90	14,426	13,691	735	5.4%
Total		562	85,883	85,490	393	0.5%

The increase in generation and emission reductions achieved are within the benchmark as per the registered renewed PDD. Sensitivity analysis was conducted for an increase of 10% which leads to an IRR value of 10.20%. Financial benchmark value is 21.20% for the project activity.

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

Data / Parameter	Biodiversity
Unit	N/A
Description	Impact on bird/bat carcasses and nests
Source of data	Monitorings of Project Participant's appointed personnel
Value(s) applied	There is no negative impact of the project on birds
Measurement methods and procedures	Bird/bat carcasses and nests will be monitored.
Monitoring frequency	Weekly
QA/QC procedures	N/A
Purpose of data	To monitor compliance to Safeguarding Principle 4.3.10: High Conservation Value Areas and Critical Habitats
Additional comment	-

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 Mukhtar of Killik, 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. Photographic evidence of the grievance logbook in Mukhtar's office was submitted to the VVB. Any complaint or need from the local community could directly be received 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 period¹³.

¹³ Signed and sealed letter on company letterhead about any legal contest or dispute that has arisen with the project during the monitoring period has been provided to the VVB.

Revision History

Version	Date	Remarks
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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