MORDOGAN WIND POWER PROJECT, TURKEY

Project title	Mordogan Wind Power Project, Turkey
Project ID	1231
Monitoring period	01/03/2021 – 29/02/2024
Original date of issue	23/02/2024
Most recent date of issue	13/08/2024
Version	2
VCS Standard Version	4.5
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CONTENTS

PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The Mordogan Wind Power Project, Turkey, (hereafter referred to as the "Project" of "Mordogan WPP"), which is developed by Egenda Ege Enerji Üretim A.Ş. (hereafter referred to as the "project owner") is a wind power plant in İzmir Province, Turkey.

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

Total installed power generation capacity of the project is 15 MWm/13.8 MWe, consisting of 5 wind turbines, with an estimated power supply to the grid of 45,588 MWh of net electricity generation per annum. Mordogan WPP is connected to 380 kV Karaburun GIS Havza TM's OG and Karaburun is connected to the 380 kV Çeşme Havza TM. Total line is 21 km.

The estimated amount of GHG emission reduction is 26,593 tonnes CO2e per year in the registered PDD. During its operation during this monitoring period, the actualized net electricity generation is 148,505.09 MWh. The actual emission reduction has been calculated as 86,621 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 so as to avoid environmental pollution and GHG emissions.

The project includes 5 units of Enercon E82 E4 type turbines, as four of them havea capacity of 3 MWm / 3MWe and one of them has a capacity of 3 MWm /1.8 MWe.[1]

The start date of the project activity is 24/06/2016 as the start date of the commissioning.[2]

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	24/06/2016 – 23/06/2026	VCS	Bureau Veritas Certification SAS – Burcu MUTMAN BORAN	Ten years

[1] Ministry Acceptance Protocols are available to the VVB.

[2] The Ministry Acceptance Protocol is available to the VVB.

Verification	24-06-2016 / 28-02-2021	VCS	re-carbon Ltd. – Anıl SÖYLER	Five years
Verification	01-03-2021 / 29-02-2024	VCS	RINA Services S.p.A. – Mehmet ERDOĞAN	Four years

1.3 Sectoral Scope and Project Type

Sectoral scope[3]	1
Project activity type	"Energy industries (renewable - / nonrenewable sources)"

1.4 Project Proponent

Organization name	Egenda Ege Enerji Üretim A.Ş.
Contact person	Mr. Fatih Çandır
Title	Energy Trade and Corporate Relations Department
Address	Şehit Nevres Bulvarı, No:10, Kat:7, Deren Plaza, Montrö / İzmir
Telephone	+90 232 463 98 11
Email	fatih.candir@endaenerji.com.tr

1.5 Other Entities Involved in the Project

Organization name	Sekans Danışmanlık
Role in the project	Consultant
Contact person	Sıla Duran
Title	Consultant
Address	Konaklar Mah. 34330,4. Levent - Istanbul
Telephone	+90 532 438 30 29
Email	sila@sekansdanismanlik.com

1.6 Project Start Date

Project start date	24/06/2016

[3] *Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes*

Justification	The date is the start date of the commissioning of the project.

1.7 Project Crediting Period

Crediting period	☐ *Seven years, twice renewable* ☐ *Ten years, fixed* ☒ *Other (state the selected crediting period and justify how it conforms with the VCS Program requirements)-with two times renewable crediting period of 10 years*
Start and end date of first or fixed crediting period	24/06/2016 – 23/06/2026

1.8 Project Location

The project activity is located in Mordogan Neighbourhood in Karaburun Town of İzmir in Turkey.

The Aegean Sea is located 5.6 km north of the project, Ovacık in the 2.4 east of the project, the Aegean Sea at 3.4 km east and Güzelbahçe Bay at 1.81 km south of the project. The closest settlement to the project site is Kösedere which is about 4.9 km away to the north of the wind farm and Mordogan which is about 7.3 km away to the north of the plant.

Figure 1. Location of Mordogan Wind Power Project

Table 1 – Geographical coordinates of the wind turbines of the project activity[4]

Wind Turbine No	Latitude (N)	Longitude (E)
1	463434	4260287
2	463669	4260267
3	464524	4260268

[4] Generation license is available to the VVB.

4	464812	4260171
5	465069	4260486

1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	AMS-I.D.	Grid connected renewable electricity generation	17.0
Tool	Tool-07	Guidelines on the Demonstration of Additionality of Small-Scale Project Activities	09.0

1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

1.10.2 Registration in Other GHG Programs

Is the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the *VCS Program Definitions* for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the *VCS Program Definitions* for definition of GHG-related environmental credit system.

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

1.12 Sustainable Development Contributions

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	7.2	7.2.1 Renewable energy share in the total final energy consumption	Implemented activities to increase	Prevented 148,505.09 MWh electricity generation from fossil fuels.	Prevented the generation of 367,736.90 MWh electricity generation from fossil fuels.
2)	8.2	Job creation for local people in a high value added sector	Implemented activities to increase	During construction and operational period, the project has created employment opportunities for the local community. The project contributes to the economic development of the region by providing sustainable energy resources. Job has been created for 8 employees.	As contributing to SGD 8 Decent Work and Economic Growth, one Plant Manager and one chief technician are responsible for all five projects of the project owner. Besides this, six control operators are working in shifts for the Project Activity. However, 8 employees are recorded under the Project Activity.
3)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	By producing electricity from wind energy, the project activity has prevented the release of 86,621 tonnes of carbon into the atmosphere during the reporting period.	Prevented the release of 214,495 tonnes of carbon into the atmosphere.

1.13 Commercially Sensitive Information

No commercially sensitive information has been excluded from the public version of the project description.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

The stakeholder structure has not changed since validation. Details of the stakeholder structure are given in section 2.1.2.

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	The contact information of the plant responsible exists at the Mukhtar, the project owner and local community are always in touch. The project owner regularly checks with the Mukhtar if any complaint or a request exists. Any complaint or need from the local community could directly be received by the project owner and appropriate contributions or improvements are made to the local community.
Date(s) of stakeholder consultation	According to the regulation announced by the Ministry of Environment and Forestry and published in the Official Gazette dated 17 July 2008 and numbered 26939, projects that do not have an EIA requirement certificate are not obliged to organize a Stakeholder Meeting. Therefore, a stakeholder meeting has not been planned. The last site-visit was on 16/02/2024.
Communication of monitored results	N/A
Consultation records	N/A
Stakeholder input	No complaints occurred during this monitoring period.

2.1.3 Free, Prior, and Informed Consent

Consent	Relevant permits were obtained during the validation period.
Outcome of FPIC	The project activity did not damage land, did not relocate people without their consent, and did not forcibly physically or economically displace people.

2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome
No negative inputs have been received during this monitoring period.	The grievance mechanism is in place, and this was also confirmed by the interviewed locals and Mordogan Neighbourhood Mukhtar (Village Head) during the site visit of the last verification. In addition, the contact information of the plant responsible is available in Mukhtar; any complaints or requests can be forwarded to the Project Owner.

2.1.5 Public Comments

Summary of comments received	Actions taken
There hasn't been any public consultation during this monitoring period.	N/A

2.2 Risks to Stakeholders and the Environment

	Risk identified	Mitigation or preventative measure taken
Risks to stakeholder participation	No risk identified	Stakeholders are involved in every stage of informing about the project activity. The complaint mechanism is fully functioning.
Working conditions	No risk identified	All necessary training regarding the health and safety of

		employees is provided. Child labor as defined in the ILO Minimum Age Convention is not permitted. The Project Developer ensures that there is no forced labor, and that all employment complies with national occupational and occupational health and safety laws, obligations under international law, and the principles and standards and essential conventions of the International Labor Organization (ILO).
Safety of women and girls	No risk identified	The project does not endanger the safety of girls and women.
Safety of minority and marginalized groups, including children	No risk identified	The project does not jeopardize the safety of minorities and isolated groups, including children.
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	No risk identified	The project is a wind energy project. By evaluating the environmental impacts of the project activity, "EIA Not Required Certificate" was received from the Ministry of Environment and Urbanization on 18/05/2009.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

Discrimination and sexual harassment	The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.
Management experience	No new organization was involved in the project design and implementation.

Gender equity in labor and work	The project does not reduce access to or control of resources for women. The project does not involve in any form discrimination in any kind of form.The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights.
Human trafficking, forced labor, and child labor	Child labour, as defined by the ILO Minimum Age Convention, is not allowed. The Project Developer ensures that there is no forced labour, and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions.

2.3.2 Human Rights

Turkey is a party to European Convention on Human Rights since 18-May-1954.[5]

The project owner respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.

2.3.3 Indigenous Peoples and Cultural Heritage

There is no resettlement issue associated with the Project. There was no house in the project area, thus the project did not cause any resettlement.

2.3.4 Property Rights

All permits for the project site were obtained during the validation period.

Disputes over rights to territories and resources	N/A
Respect for property rights	N/A

2.3.5 Benefit Sharing

There is no benefit sharing in the project activity.

2.4 Ecosystem Health

"EIA not Required Cerfiticate" from Ministry of Environment and Urbanization was taken on 18/05/2009 as assessing the environmental impacts of the project activity.

[5]Please See Official Website of Ministry of Foreign Affairs of Turkey: http://www.mfa.gov.tr/the-european-convention-on-human-rights.en.mfa

	Risk identified	Mitigation or preventative measure taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	The project is a wind energy project.
Soil degradation and soil erosion	No risk identified	The project is a wind energy project.
Water consumption and stress	No risk identified	The project is a wind energy project.
Usage of fertilizers	No risk identified	The project is a wind energy project.

2.4.1 Rare, Threatened, and Endangered species

Species or habitat	There aren't any endangered species identified as potentially present within the Project boundary (including those that may route through the area). The Project does not potentially impact other areas where endangered species may be present through transboundary affects.

2.4.2 Introduction of species

N/A

2.4.3 Ecosystem conversion

The project is not an "Afforestation, Reforestation and Revegetation" (ARR), "Agricultural Land Management" (ALM), "Wetlands Restoration and Conservation" (WRC) or "Avoided Conversion of Grasslands and Shrublands" (ACoGS) project.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The first 10-year crediting period was from 1st of June 2016 to 30st of May 2025 after the completion of commissioning. The project started its operation in 27/05/2016. Thus, the project start date is 27/05/2016. And the Project's crediting period is: 27/05/2016 – 26/05/2026.

The Egenda Ege Enerji Üretim A.Ş. is the owner of the Project. Shareholder structure has been changed a few times. The latest structure change was on 20/05/2019 as the main shareholder Enda Enerji Holding A.S.

The other entity involved in the project was FutureCamp İklim ve Enerji Ltd. in the project description. However, it's been changed as Sekans Danışmanlık during the first periodic monitoring period.

3.2 Deviations

3.2.1 Methodology Deviations

There are no methodological deviations applied during this monitoring period.

3.2.2 Project Description Deviations

The first 10-year crediting period was expected to be from 1st of February 2015 to 31st of January 2025 after the completion of commissioning. The project started its operation in 24/06/2016. Thus, the project start date is 24/06/2016. And the Project's crediting period is: 24/06/2016 – 23/06/2026.

The Egenda Ege Enerji Üretim A.Ş. is the owner of the Project. Shareholder structure has been changed a few times. The latest structure change was on 20/05/2019 as the main shareholder Enda Enerji Holding A.S.

Other entity involved in the project was Lifeenerji Ltd. Şti. in the project description. However, it's been changed as Sekans Danışmanlık during the 1st Monitoring Period.

3.3 Grouped Projects

The project activity is not a grouped project.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	**Gross electricity generation**
Data unit	MWh

Description	Gross Electricity supplied to the grid by relevant sources (2009-2011)
Source of data	Turkish Electricity Transmission Company (TEIAS) website https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletimistatistikleri
Value applied	Please refer to Table 18 in the PDD
Justification of choice of data or description of measurement methods and procedures applied	TEIAS annually publishes official data regarding electricity generation. Average share of each source in the overall generation has been calculated.
Purpose of Data	Data used for emission reduction calculation
Comments	-

Data / Parameter	**$EF_{grid, CM, y}$**
Data unit	tCO2/MWh
Description	Combined margin CO2 emission factor for the project electricity system in year 2011
Source of data	As per "Tool to calculate the emission factor for an electricity system"
Value applied	0.5833 tCO2/MWh
Justification of choice of data or description of measurement methods and procedures applied	As per "Tool to calculate the emission factor for an electricity system" Calculated from data provided by the TEIAS for Turkish Power Sector; Operating Margin = 0.6542 KgCO2e/kWh Build Margin = 0.3707 KgCO2e/kWh Combined Margin = 0.5833 KgCO2/kWh
Purpose of Data	Used for baseline emissions
Comments	-

Data / Parameter	**Eg_y**
Data unit	MWh

Description	Net electricity generated by project electricity system in year 2009, 2010 and 2011
Source of data	Turkish Electricity Transmission Company (TEIAS) website https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletimistatistikleri
Value applied	Please refer to Table 19 and Table 20 in the PDD
Justification of choice of data or description of measurement methods and procedures applied	TEIAS annually publishes official data regarding total net electricity generation, but its breakdown by fuel type is unavailable.
Purpose of Data	Data used for emission reduction calculation
Comments	-

Data / Parameter	**$EF_{CO2,i,y}$**
Data unit	tCO2/GJ
Description	CO2 emission factor of fuel type i used in power unit m in year 2011
Source of data	PCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the IPCC Guidelines on National GHG Inventories. http://www.ipccnggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf
Value applied	Please refer to Table 23 and Table 27 in the PDD
Justification of choice of data or description of measurement methods and procedures applied	No plant specific and national emission factor data is available in Turkey. So, IPCC default data is used.
Purpose of Data	Data used for emission reduction calculation
Comments	-

Data / Parameter	**Sample Group for BM emission factor**
Data unit	Name of the plants, MW capacities, fuel types, annual electricity generations and dates of commissioning.
Description	Most recent power plants which compromise 20% of total generation

Source of data	Turkish Electricity Transmission Company Web Site (www.teias.gov.tr). Data is extracted from the relevant annexes of the capacity projection reports for the years 2011,2012 and 2013. The reports are now available through the website of EPDK: https://www.epdk.org.tr/Detay/Icerik/3-0-66/elektrikuretim-kapasiteprojeksiyonlari
Value applied	Please refer to table 29 in the PDD
Justification of choice of data or description of measurement methods and procedures applied	The Turkish Electricity Distribution Company. The data published on the TEİAŞ website is the most up-to-date and reliable data available for the Turkish grid
Purpose of Data	Data used for emission reduction calculation
Comments	-

Data / Parameter	$\eta_{i,y}$
Data unit	-
Description	Average energy conversion efficiency of power unit m in year y
Source of data	Annex I the “Tool to calculate the emission factor for an electricity system”
Value applied	Please refer to table 23 in the PDD
Justification of choice of data or description of measurement methods and procedures applied	For efficiency rates of Coal and Lignite Power Plants See Annex-1 of the Tool (highest rate is applied to be conservative) For Natural Gas and Oil plants efficiencies, default value given in the tool is applied: http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v2.pdf
Purpose of Data	Data used for emission reduction calculation
Comments	-

Data / Parameter	$HV_{i,y}$
Data unit	Mass or volume unit
Description	Heating Values of fuels consumed for electricity generation in the years of 2009, 2010 and 2011

Source of data	TEIAS (Turkish Electricity Transmission Company) http://www.teias.gov.tr/istatistikler.aspx
Value applied	Please refer to Table 25 in the PDD
Justification of choice of data or description of measurement methods and procedures applied	TEİAŞ is the national electricity transmission company, which makes available the official data of all power plants in Turkey. There is no national NVC data in Turkey. However, TEİAŞ announces Heating values of fuels. This data is used to calculate annual NCVs for each fuel type.
Purpose of Data	Data used for emission reduction calculation
Comments	-

Data / Parameter	**$FC_{i,y}$**
Data unit	Mass or volume unit
Description	Amount of fuel type i consumed by relevant power plants in Turkey in the years of 2009, 2010 and 2011
Source of data	TEIAS (Turkish Electricity Transmission Company) http://www.teias.gov.tr/istatistikler.aspx
Value applied	Please refer to Table 26 in the PDD
Justification of choice of data or description of measurement methods and procedures applied	TEİAŞ is the national electricity transmission company, which makes available the official data of all power plants in Turkey.
Purpose of Data	Data used for emission reduction calculation
Comments	-

Data / Parameter	**$NCV_{i,y}$**
Data unit	TJ/kton, TJ/million m3
Description	Net calorific value (energy content) of fuel type i in years of 2009, 2010 and 2011
Source of data	Calculated by using HVi,y to FCi,y as Net Calorific Values of fuel types are not directly available in Turkey.
Value applied	Please refer to section Table 27 in the PDD
Justification of choice of data or description of measurement	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

methods and procedures applied	available. Calculation of NCVs from national HVi,y and FCi,y data is preferred to default IPCC data as these are more reliable.
Purpose of Data	Used to calculate the combined margin emission factor
Comments	-

4.2 Data and Parameters Monitored

Data / Parameter	**$EG_{facility,y}$**
Data unit	MWh/yr
Description	Quantity of net electricity generation supplied to the grid in year y
Source of data	The data from the Electricity Meters are the basis for the settlement notification of EPIAS[6]. Data are gathered electronically from the meters by TEIAS and stored in secured website of EPIAS, which is accessible to project developer with a private password. For monitoring, the monthly settlement notification of EPIAS shall be used as source of data.
Description of measurement methods and procedures to be applied	Mordogan Wind Power Project, Turkey is connected to 380 kV Çeşme TM's OG and then Çeşme is connected to the 380 kV Çeşme Havza TM. There are two metering instruments (power meters). These devices measure the net electricity supply to the national grid by the Project Activity, all losses before this point are on account of the project participant. Both metering instruments, which continuously monitor and measure the net electricity delivered by the Project Activity, are sealed and only accessible by TEIAS personnel. Official TEIAS data from the EPIAS web site was used for calculating EG_y.
Frequency of monitoring/recording	Continuously monitoring and monthly readings
Value monitored	43,386.20 MWh for 2021 (01/03/2021 – 31/12/2021) 52,926.13 MWh for 2022 42,451.89 MWh for 2023 9,740.87 MWh for 2024 (01/01/2024 – 29/02/2024)

[6] PMUM has been replaced by EPIAS as of 01/09/2015 in Turkey. Retrospective data is accessible via EPIAS

Monitoring equipment

Both exported and imported electricity are measured continuously by a power meter at the grid interface and recorded monthly.

Power meters:

	Main Meter	Spare Meter
Name	Ana Sayaç	Yedek Sayaç
Brand	EMH	EMH
Serial Number	11800271	9202374
Accuracy Class	0.2S	C
Latest Test Dates of the Meter	05/11/2022	03/10/2020 and 28/01/2022

On 03/10/2022, the ITRON brand spare meter with serial number "68010448" was replaced with the EMH brand meter with serial number "9202374". On 05/11/2022, the ITRON brand main meter with serial number "68010447" was replaced with the EMH brand meter with serial number "11800271". The information of the removed meters is below:

	Main Meter	Spare Meter
Name	Ana Sayaç	Yedek Sayaç
Brand	ITRON	ITRON
Serial Number	68010447	68010448
Accuracy Class	0.2S	0.2S
First Index Protocol date of the Meter	12/06/2016	12/06/2016
Last Test Date of the Meter	03/10/2020	16/08/2018

QA/QC procedures to be applied

- A spare meter is used for crosschecking the accuracy and both meters are calibrated if required.

	• EPIAS records are considered as the main source for net electricity and the values are crosschecked with the Meter Reading Forms. • The periodical calibration or maintenance is under the responsibility of TEIAS. The calibration of meters is done every ten years. The meter tests are carried out every two years. Since TEİAŞ meters are sealed by TEİAŞ, the project proponent cannot intervene with the devices.
Purpose of the data	Calculation of net electricity supplied to the grid and thus baseline emissions
Calculation method	Direct continuous measurement
Comments	-

4.3 Monitoring Plan

The Project Proponent 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:

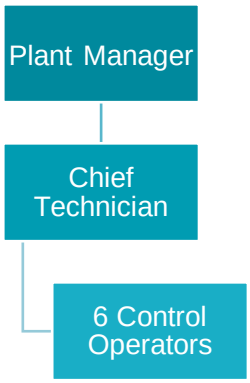

Figure 2. The management structure for the plant operation

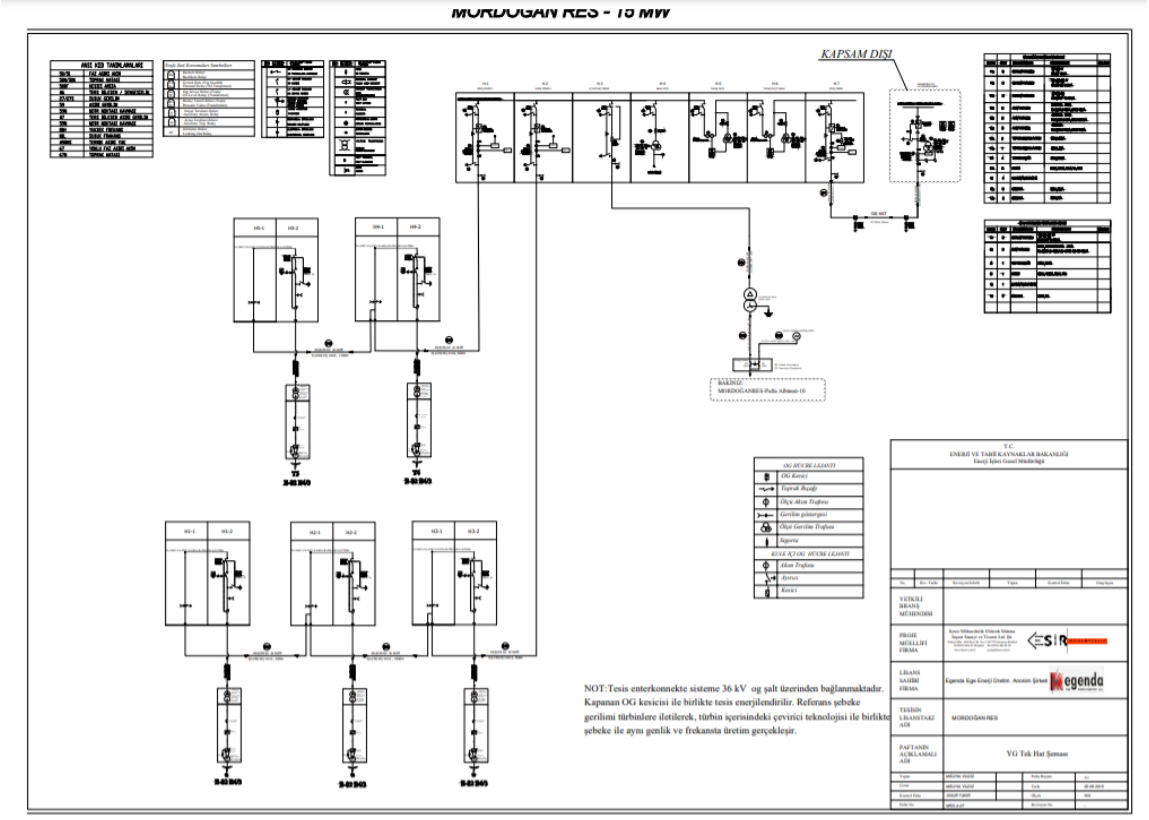

Figure 3. The Single Line Diagram of Mordogan Wind Farm Project

One Plant Manager and one chief technician are responsible for all five projects of the project owner. Besides this, six control operators are working in shifts for the Project Activity. Project Manager is responsible for all issues related to project and operation of the plant. Chief Technician is responsible for daily operational processes of the plant, management of the plant personnel, and other technical and management issues for the plant. Control Operators are responsible for monitoring of the plant and turbines for all day and night in the control room.

Two power meters are installed at the grid interface of the project. One is the main meter, and the other is spare meter of the main meter for cross-checking. Both meters are jointly inspected and sealed in order 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 grid operator is the only one authorized to deal with fixing, calibrating, or changing the meters, which were done either by the grid operator or by a company authorized by the grid operator.

The periodical calibration or maintenance is under the responsibility of TEIAS. The calibration of meters is done every ten years. The meter tests are carried out every two

years. Since TEİAŞ meters are sealed by TEİAŞ, the project proponent cannot intervene with the devices.

During this monitoring period, there were no records of meter failure. In case of any urgent case TEIAS contacts the Plant Manager. Since the meters are within TEIAS' province, TEIAS executes all the procedures for handling non-conformities. Therefore, the Project Participant does not have any internal auditing for this purpose.

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

The primary source is the EPIAS records. Net electricity exported is crosschecked with Meter Reading Forms. EPİAS is the financial settlement center of TEIAS[7]. 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 EPİAS is accessible to Project Proponent with their unique user ID and password. Once accessed, the Project Proponent is able to call electricity generation and consumption reports of their own projects. The same reports are used by the Project Proponent for invoicing TEIAS. The electricity generation data is reported monthly basis.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

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

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

where:

BE_y	Baseline emissions in year y (tCO_2e/y)

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

$EG_{PJ,y}$	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)

BEy = EGPJ, y * EFgrid, CM, y Equation (1)

Project Emissions

Since the project activity is a wind project,

$PE_y = 0$.

Leakage

In accordance with the AMS-I.D. (Version 17.0), leakage is taken as zero since the project is a new power plant is taken as zero,

$LE_y = 0$.

Emission Reductions

ERy = BEy-PEy-LEy Equation (2)

Table 2 - 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-21	4,409.95	0.90	4,409.05	0.5833	2,572
Apr-21	4,350.69	1.30	4,349.39	0.5833	2,537
May-21	2,925.52	2.34	2,923.18	0.5833	1,705
Jun-21	2,540.69	2.25	2,538.44	0.5833	1,481

Jul-21	5,597.94	1.78	5,596.16	0.5833	3,264
Aug-21	4,281.68	1.83	4,279.85	0.5833	2,496
Sep-21	5,345.86	0.60	5,345.26	0.5833	3,118
Oct-21	4,679.86	1.64	4,678.22	0.5833	2,729
Nov-21	4,261.55	2.42	4,259.13	0.5833	2,484
Dec-21	5,008.09	0.57	5,007.52	0.5833	2,921
Jan-22	4,253.06	1.06	4,252.00	0.5833	2,480
Feb-22	3,735.64	1.74	3,733.90	0.5833	2,178
Mar-22	5,097.46	1.61	5,095.85	0.5833	2,972
Apr-22	3,009.65	2.05	3,007.60	0.5833	1,754
May-22	2,646.39	3.06	2,643.33	0.5833	1,542
Jun-22	5,064.35	0.82	5,063.53	0.5833	2,954
Jul-22	7,702.39	0.01	7,702.38	0.5833	4,493
Aug-22	3,965.08	3.35	3,961.73	0.5833	2,311
Sep-22	3,762.47	1.77	3,760.70	0.5833	2,194
Oct-22	5,847.01	0.91	5,846.10	0.5833	3,410
Nov-22	4,603.60	1.08	4,602.52	0.5833	2,685
Dec-22	3,259.39	2.89	3,256.49	0.5833	1,900
Jan-23	3,359.47	2.64	3,356.84	0.5833	1,958
Feb-23	1,907.69	0.74	1,906.95	0.5833	1,112
Mar-23	4,348.10	1.88	4,346.22	0.5833	2,535
Apr-23	2,956.97	2.38	2,954.60	0.5833	1,723
May-23	3,337.78	1.80	3,335.99	0.5833	1,946
Jun-23	2,947.50	0.82	2,946.69	0.5833	1,719
Jul-23	4,444.50	1.23	4,443.28	0.5833	2,592
Aug-23	3,507.96	2.17	3,505.78	0.5833	2,045
Sep-23	4,780.70	0.69	4,780.01	0.5833	2,788
Oct-23	3,343.59	1.69	3,341.90	0.5833	1,949
Nov-23	3,931.18	1.18	3,930.00	0.5833	2,292
Dec-23	3,605.40	1.75	3,603.65	0.5833	2,102
Jan-24	5,680.51	0.55	5,679.95	0.5833	3,313
Feb-24	4,061.72	0.81	4,060.92	0.5833	2,369
2021 Vintage (01.03.2021-31.12.2021)	43,401.83	15.63	43,386.20	0.5833	25,307
2022 Vintage (01.01.2022-31.12.2022)	52,946.49	20.36	52,926.13	0.5833	30,871
2023 Vintage (01.01.2023-31.12.2023)	42,470.85	18.96	42,451.89	0.5833	24,762
2024 Vintage (01.01.2024-29.02.2024)	9,742.23	1.36	9,740.87	0.5833	5,681
Total	148,561.39	56.31	148,505.09	0.5833	86,621

5.2 Project Emissions

In accordance with the methodology AMS-I.D., Version 17.0, 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,

$PE_y = 0$.

5.3 Leakage Emissions

No leakage is to be accounted by the Project Activity. This is in line with the registered PD and applicable methodology AMS-I.D., Version 17.0.

Therefore, the leakage from the Project Activity is zero,

$LE_y = 0$.

5.4 GHG Emission Reductions and Carbon Dioxide Removals

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

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

where:

BE_y	Baseline emissions in year y (tCO_2e/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)

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

According to AMS-I.D., emission reductions are calculated as:

$ER_y = BE_y - PE_y - LE_y$

where:

ER_y = Emission reductions in year y (t CO2/yr)

BE_y = Baseline emissions in year y (t CO2/yr)

PE_y = Project emission in year y (t CO2/yr)

LE_y = Leakage emissions in year y (t CO2/yr)

$EF_{grid, OMsimple, y}$ = 0.6542 tCO2/MWh

$EF_{grid, BM, y}$ = 0.3707 tCO2/MWh

$EF_{grid, CM, y} = w_{OM} * EF_{grid, OMsimple, y} + w_{BM} * EF_{grid, BM, y}$

According to the wind energy production tool: w_{OM} = 0.75 and w_{BM} = 0.25

$EF_{grid, CM, y}$ = 0.6542 tCO2/MWh * 0.75 + 0.3707 tCO2/MWh * 0.25

$EF_{grid, CM, y}$ = 0.5833 tCO2/MWh

BEy = 148,505.09 MWh * 0.5833 tCO2/MWh = 86,621 tCO2

Emission Reductions

$ER_y = BE_y - PE_y - LE_y$

ER_y = 86,621 – 0 – 0

ER_y = 86,621 tCO2

Vintage period	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)	Reduction VCUs (tCO_2e)	Removal VCUs (tCO_2e)	Total VCUs (tCO_2e)

01/Mar/2021 to 31-Dec-2021	25,307	0	0	25,307	0	25,307
01-Jan-2222 to 31-Dec-2022	30,871	0	0	30,871	0	30,871
01-Jan-2023 to 31-Dec-2023	24,762	0	0	24,762	0	24,762
01-Jan-2024 to 29-Feb-2024	5,681	0	0	5,681	0	5,681
Total	**86,621**	**0**	**0**	**86,621**	**0**	**86,621**

Vintage period	Ex-ante estimated reductions/ removals	Achieved reductions/ removals	Percent difference	Explanation for the difference
01/Mar/2021 to 31-Dec-2021	22,294	25,307	13.5%	This marginal spread from the estimation is probably due to weather conditions.
01-Jan-2222 to 31-Dec-2022	26,593	30,871	16.1%	
01-Jan-2023 to 31-Dec-2023	26,593	24,762	-6.9%	
01-Jan-2024 to 29-Feb-2024	4,371	5,681	30.0%	
Total	**79,852**	**86,621**	**8.5%**	

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

Section	Information	Justification