



**Verified Carbon
Standard**

KINIK WIND POWER PLANT

Document Prepared by Sekans Enerji Ltd. Şti.

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The project of Esinti Enerji Üretim Ticaret ve Sanayi Anonim Şirketi (hereafter referred to as “Esinti”), Kınık Wind Power Plant (hereafter referred to as the “Project” or “Kınık WPP”), involves installation and operation of 54.4 MWm/50 MWe large-scale wind power plant with an annual estimated generation of 165,000 MWh. The generation license of the project was issued by the Energy Market Regulatory Authority (EMRA) on 08/03/2012 for 49 years.

The aim of the project is to generate electricity by the efficient utilization of the available wind energy by project activity replace the grid electricity, which is constituted of different fuel sources, mainly fossil fuels. The electricity produced by project activity result in emission reduction. Thus, the project has a significant contribution to climate protection and to sustainable development in the region. The annual emission reduction estimated by the project is 90,271 tonnes of CO₂.

The project activity contributed further dissemination of wind energy and extension of national power generation. Construction agreement is dated as 17/11/2015¹. Operation of the plant started on 05/12/2016 with 16 wind turbines and 2nd phased implementation with 1 turbine (T2) was realized on 10/05/2018².

Total emission reduction achieved during this monitoring period is 109,358 tCO₂. Generated net electricity during this monitoring period is 199,888.77 MWh.

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.

Please see the vintage-based comparison of expected and achieved emission reductions for this monitoring period:

Table 1 - Expected vs achieved emission reductions

¹ Please see registered PD.

² Ministry Acceptance Protocols are available to the VVB.

Vintage	Period	Total Days	Amount achieved during this monitoring period (tCO2e)	Amount estimated ex ante (tCO2e)	Difference (tCO2e)	Difference (%)
2021	01.05.2021-31.12.2021	245	65,390	60,593	4,797	7.9%
2022	01.01.2022-30.06.2022	181	43,968	44,765	-797	-1.8%
Total	01.05.2021-30.06.2022	426	109,358	105,357	4,001	3.8%

Table 2 - Timeline of the Project Activity

Date (Period)	Activity
"EIA not Required" Certificate	15/02/2012
Construction Start Date	17/11/2015
Commissioning Date of 1 st Phase (16 turbines)	05/12/2016
Commissioning Date of 2 nd Phase (1 turbine)	10/05/2018
05/12/2016-28/02/2019	1 st Monitoring Period
01/03/2019-30/04/2021	2 nd Monitoring Period
01/05/2021-30/06/2022	3 rd Monitoring Period

Project has 16 turbines with unit capacity of 3.2 MWm/3 MWe and 1 turbine with unit capacity of 3.2 MWm/2 MWe. The key parameters about the technical design of the selected model Siemens SWT-3.2-108 turbines and generators are listed below in Table 3 and Table 4:

Table 3 - Key technical specifications of wind turbines³

Parameter	Value
Rated Power	3.2 MWm
Rotor Diameter (m)	108 m
Number of Blades	3

³ Please see the Ministry Acceptance Protocol

Reference Wind Speed	42.5 m/s
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Table 4 – Key technical specifications of generator⁴

Parameter	Value
Manufacturer	Siemens LD
Power	3200 kW
Voltage	690 V
Frequency	47-52 Hz
Rev (Nominal(maximum))	14,4 rpm / 16,5 rpm
Power factor	0.9

1.2 Sectoral Scope and Project Type

According to UNFCCC sectoral scopes definition for CDM projects, the Project Activity is included in the Sectoral Scope 1, category “Energy industries (renewable - / nonrenewable sources)”. The project is a single green field investment and is not part of a project group or bundle.

1.3 Project Proponent

Organization name	Esinti Enerji Üretim Ticaret ve Sanayi Anonim Şirketi
Contact person	Cengiz Sarıkaya
Title	Project Manager
Address	Eski Kuyumcular Mah. Yeşilyol Sok. No: 4/2 Karesi, Balıkesir/Turkey
Telephone	+90 266 244 13 00
Email	c.sarikaya@esintienenerji.com

⁴ Please see the Ministry Acceptance Protocol

1.4 Other Entities Involved in the Project

Organization name	Sekans Enerji Limited Şirketi
Role in the Project	Consultant
Contact person	Sıla Duran
Title	Consultant
Address	EMNİYET EVLERİ MAH. ESKİ BÜYÜKDERE CAD. NO: 1 /1 İÇ KAPI NO: 1B04 KAGITHANE/ İSTANBUL
Telephone	-
Email	sila@sekansdanismanlik.com

1.5 Project Start Date

The project start date is 05/12/2016 which is the commissioning date of the project activity.

1.6 Project Crediting Period

The Project's crediting period type renewable crediting. The Project's crediting period is ten years renewable twice: 05/12/2016 – 04/12/2026 (both days are included).

1.7 Project Location

The project is located at Kınık district, İzmir province, Turkey. The nearest residential area to the plant is Kodukburun village. Project location is shown in Figure 1 and Figure 2.

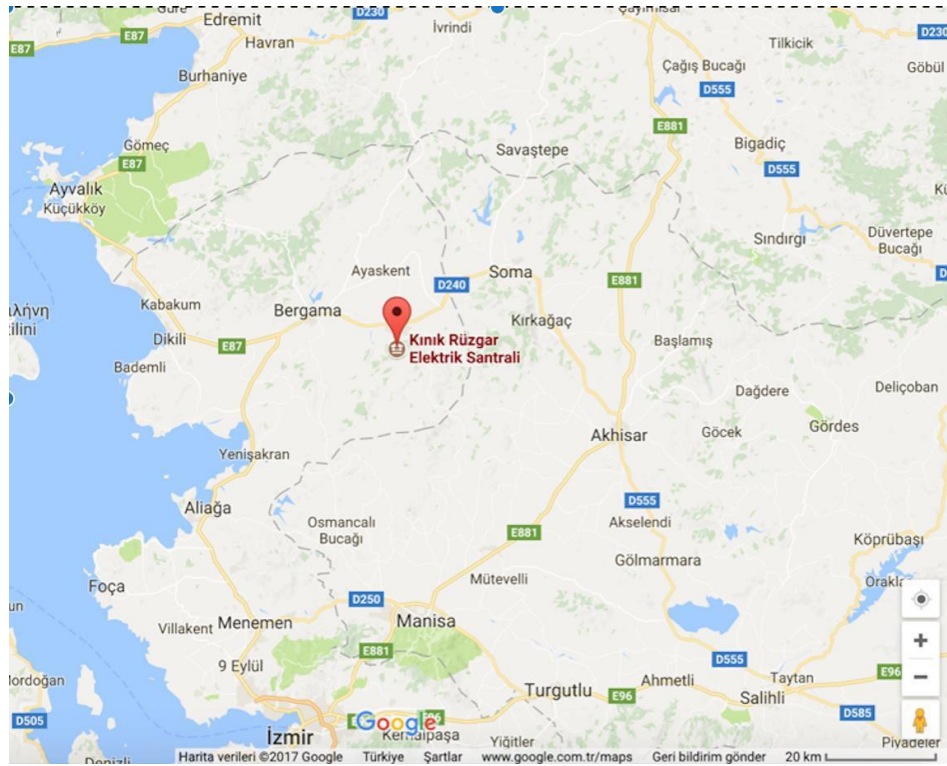


Figure 1. Location of Kınık Wind Power Plant

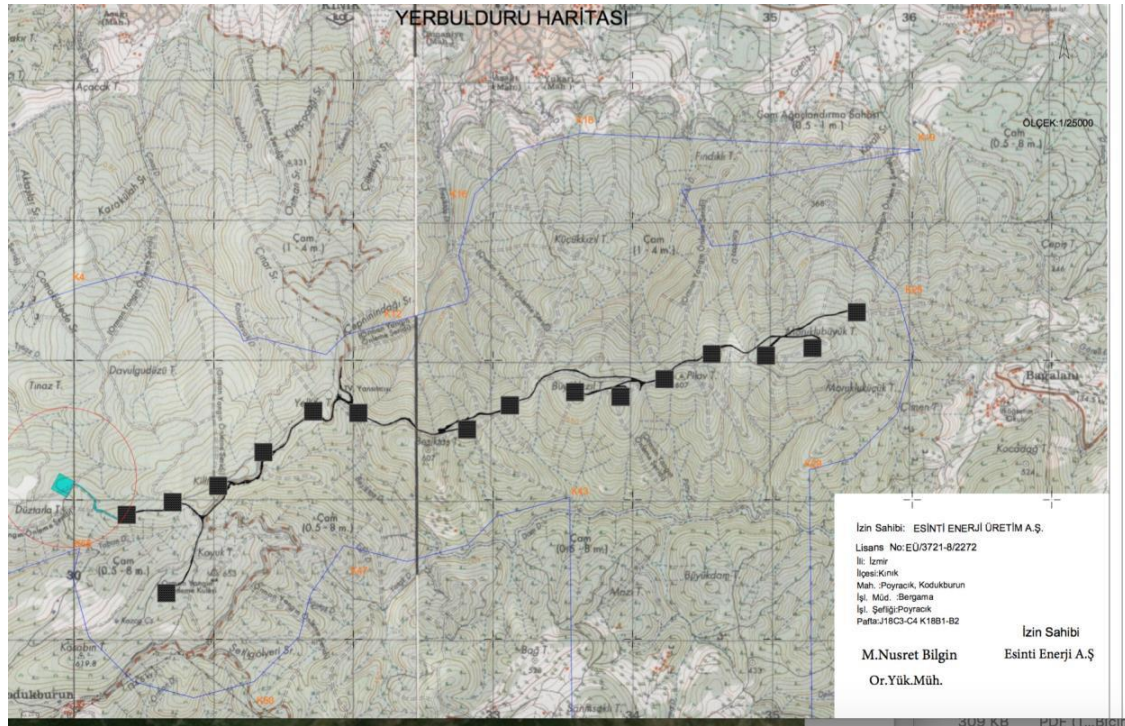


Figure 2. Location of Kınık Wind Power Plant

Table 4 – Geographical coordinates of the wind turbines of the project activity⁵

T1	530.661	4.322.331	T10	533.119	4.323.676
T2	529.919	4.323.104	T11	533.586	4.323.771
T3	530.376	4.322.892	T12	533.910	4.323.738
T4	530.705	4.322.982	T13	534.226	4.323.864
T5	531.031	4.323.101	T14	534.563	4.324.044
T6	531.355	4.323.341	T15	534.952	4.324.032
T7	531.711	4.323.632	T16	535.285	4.324.086
T8	532.035	4.323.621	T17	535.602	4.324.342
T9	532.813	4.323.503			

⁵ Please see the Generation License.

1.8 Title and Reference of Methodology

For the determination of the baseline, the official methodology ACM0002 Version 17.0, “Grid-connected electricity generation from renewable sources” is applied, using conservative options and data as presented in the following section.

This methodology refers to four Tools, which are:

- Tool to calculate the emission factor for an electricity system (Version 06.0)
- Tool for the demonstration and assessment of additionality (Version 07.0.0)
- Combined tool to identify the baseline scenario and demonstrate additionality (Version 06.0.0)
- Tool to determine the remaining lifetime of the equipment (Version 01)

1.9 Participation under other GHG Programs

The project has never been included in an emissions trading program or any other binding limits. It has neither received any kind of environmental credits nor been registered under any other GHG programs.

1.10 Other Forms of Credit

The project has not created another form of credit.

1.11 Sustainable Development Contributions

The project produces electricity from renewable energy sources 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 with fossil fired power plants. The project generates 165,000 MWh in average annually. The project contributes to the Sustainable Development Goal, Affordable and Clean Energy. During this monitoring period, the project has generated 199,888.77 MWh as contributing to SGD 7 Affordable and Clean Energy.

The annual emission reduction estimated by the project is 90,271 tonnes CO₂eq, approximately. While the emissions are mitigated, technology transfer is also realized as benefitting from wind power. During this monitoring period, the project has contributed to SDG 13 Climate Action as reducing 109,358 tonnes CO₂.

The project contributes to improve the environmental situation in the region and in the country as avoiding fossil fuel-based electricity enhances the air quality and help to reduce the negative effects on the climate. Through renewable technologies and wind-based electricity sustainable and climate friendly development is promoted. The project contributes to the Sustainable Development Goal, Climate Action.

During construction and operational period, the project has created employment opportunities for the local community. The project contributes the economic development of the region by providing sustainable energy resources. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments. Thus, the project contributes to the Sustainable Development Goal, Decent Work and Economic Growth.

As contributing to SGD 8 Decent Work and Economic Growth, 15 employees are working for the operation of the plant. Project Manager is responsible for all issues related to project and operation of the plant. Plant Manager is responsible for daily operational processes of the plant, management of the plant personnel, and other technical and management issues for the plant. Technicians are responsible for monitoring of the plant and turbines for all day and night in the control room. Additionally, the Project Activity, works with a private occupational health and safety (OHS) company and is audited in every two months.

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	The project produces electricity from renewable energy sources using wind as the power source and contributes to Turkey's growing electricity demand through a sustainable and low carbon technology. During this monitoring period, the project has prevented 199,888.77 MWh from fossil fuels.	Preventing the generation of 946,269.71MWh electricity from fossil fuels since the start date pf the operation

2)	8.2	Job creation for local people in a high value-added sector	Implemented activities to decrease/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. As contributing to SGD 8 Decent Work and Economic Growth, 15 employees are working for the project activity.	Providing existing 15 employees with the opportunity to continue their lives and develop themselves in their work, and offering the same opportunity to different employees in different time periods since the start date of the operation.
3)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	By producing electricity from hydro power, the project activity has prevented the release of 109,358 tonnes of carbon into the atmosphere during the reporting period.	Preventing the release of 517,689tonnes of carbon into the atmosphere since the start date of the operation

2 SAFEGUARDS

2.1 No Net Harm

Within the scope of the project, all precautions have been taken for the environment during the design phase and the project is implemented in line with the environmental law and related regulations.

The purpose of the project activity is to generate power in an efficient, clean, reliable and sustainable way with maximum respect on social and environmental aspects and to reduce emissions by partially substituting the electricity supply of fossil fuel fired power plants in Turkey. The consequences of the Project Activity with regards to economic, social and environmental impacts have been assessed during EIA process. There is not any negative environmental or socio-economic impact.

There is no agricultural area in the project area and the lands were owned by the state. The delivery minutes for the permitted land was taken from the General Directorate of Forestry on 13/11/2015.

Regarding the wastes, hazardous wastes are handled appropriately in closed containers and transported by licensed transporters to the licensed processing and disposal facilities.⁶

Wastewater is collected through within the septic tank and is transferred through the sewage truck⁷.

The domestic wastes are taken to the containers of the Municipality by the site personnel. The signed declaration of the PP is available to the VVB.

2.2 Local Stakeholder Consultation

Local Stakeholder Consultation meeting was held on 21/06/2014 in Kinik District of İzmir. At the meeting in Kinik town, there were four representatives from local governmental institutions and many participants from the Kinik town. There were no concerns on the impact of this project activity to sustainable development and environmental. Briefly, the meeting was closed by a general support from participants. .

⁶ Hazardous waste transfer records are available to the VVB.

⁷ The wastewater transfer receipts are available to the VVB.

There were not any negative feedbacks from the locals. Locals stated that they are happy with the project since Kınık WPP and its security officers made the region more secure from animal theft incidents, and Kınık WPP provided employment opportunities for local people.

Since there were no negative feedbacks from the locals, there is no need to take any further action. Although there were no negative feedbacks, at the stakeholder engagement meeting.

The contact information of the plant responsible is announced to the local community. 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. Muhtars (head of the village) of Kodukburun and Mustaklar villages had already taken the contact information of Plant Manager of the company so that the local stakeholders are able to reach Plant Manager whenever they have any complaints, suggestions or ideas about the project.

The Project has resulted in the creation of new jobs in the project region and improvement in local roads, contributing to living standards in the region. Moreover, the project owner has provided contribution in kind to the local community, although these activities are not required legally. As a result, the community is supporting the project and they believe that it creates a momentum for local sustainable development. Local people were employed during construction and are being employed during operation. This contributes to local economy and leads to improvement in living standards.

There was no specific environmental problem that concerned the locals more than others, and environmental issues need to be solved by the government. All people considered clear signs of climate change in the region in recent years.

The contact information of the plant responsible exists at the Mukhtars. The project owner and local community are always in touch. The project owner regularly checks with the Mukhtars 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. Regarding the monitoring period, signed letters by the Mukhtars of Mustaklar village (dated on 10/10/2022), Kodukburun village (dated on 10/10/2022) and Poyracık village (dated on 10/10/2022) have been provided as declaring that the site personnel's contact information has been available to the villagers, and they did not have any complaint in this monitoring period.

There isn't any update to the project design after the registration of the project.

2.3 AFOLU-Specific Safeguards

N/A

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The description of the implementation and operational status of the project and the installed technology(ies), technical process and equipment are detailed in Section 1.1.

The start date of the project activity is 05/12/2016 as the commissioning date of 16 turbines.⁸

3.2 Deviations

3.2.1 Methodology Deviations

There are no methodology deviations applied during this monitoring period.

3.2.2 Project Description Deviations

Other entity involved in the project was Rüzgar Danışmanlık in the project description. However, it's been changed as Sekans Enerji Ltd. Şti. at the time of the this Monitoring Period of the Project Activity.

There isn't any project description deviation within this monitoring period.

3.3 Grouped Projects

This is not a grouped project.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	EG _{gross}
Data unit	MWh
Description	Gross electricity production by fossil fuel power sources (2013-2015)
Source of data	TEIAS (Turkish Electricity Transmission Company) www.teias.gov.tr . The distribution of gross electricity generation

⁸ Please see the Ministry Acceptance Protocols

	by primary energy resources and the electricity utilities in Turkey (2013, 2014, 2015).
Value applied	Please refer to Validated VCS-PD, Section 3.1.
Justification of choice of data or description of measurement methods and procedures applied	TEIAS, the Turkish Electricity Transmission Company is the official source for the related data, thus providing the most up-to-date and accurate information available
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	FC_{i,y}
Data unit	ton (m3 for Natural Gas)
Description	Amount of fossil fuel type i consumed in the project electricity system by generation sources in year y (2013-2015)
Source of data	TEIAS (Turkish Electricity Transmission Company) www.teias.gov.tr . Fuels consumed in thermal power plants in Turkey by the electricity utilities (2013-2015)
Value applied	Please refer to Section 3.1 in Validated VCS-PD
Justification of choice of data or description of measurement methods and procedures applied	TEIAS, Turkish Electricity Transmission Company is the official source for the related data, hence providing the most up-to-date and accurate information available
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	NCV_{i,y}
Data unit	TJ/kt (10 ⁶ m ³ for gaseous fuels)
Description	Net calorific value (energy content) of fossil fuel type i in year y
Source of data	Calculated based on TEIAS (Turkish Electricity Transmission Company) www.teias.gov.tr . Heating values of fuels consumed in thermal plants in Turkey by the electricity utilities (2013-2015)
Value applied	Please refer to Section 3.1 in Validated VCS-PD.

Justification of choice of data or description of measurement methods and procedures applied	TEIAS (Turkish Electricity Transmission Company) is the official source for this data, providing the most up-to-date and accurate information available.
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	EF_{CO2,i,y}
Data unit	tCO2/GJ
Description	CO2 emission factor of fossil fuel type i used in power unit m in year
Source of data	IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Volume 2 (Energy) of the 2006 IPCC Guidelines for National Greenhouse Gas Inventory http://www.ipccnggip.iges.or.jp/public/2006gl/index.htm
Value applied	Please refer to Section 3.1 in Validated VCS-PD.
Justification of choice of data or description of measurement methods and procedures applied	There is no information on the fuel specific default emission factor in Turkey, hence, IPCC values has been used as referred in the “Tool to calculate the emission factor for an electricity system”.
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	EG_{m, y}
Data unit	MWh
Description	Net electricity generated by power plant/unit m
Source of data	TEIAS (Turkish Electricity Transmission Company) www.teias.gov.tr . Generation units put into operation in 2013, 2014, 2015
Value applied	Please refer to Validated VCS-PD, section 3.1 Summary of GHG Emission Reductions and Removals.
Justification of choice of data or description of measurement	Once for each crediting period using the most recent three historical years for which the data is available at the time of submission of the PDD to the DOE for validation.

methods and procedures applied	
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	$\eta_{m,y}$
Data unit	%
Description	Average net energy conversion efficiency of power unit m in year y
Source of data	Appendix 1, Default efficiency factors for power plants” of “Tool to calculate the emission factor for an electricity system” version 05.0.0.
Value applied	Please refer to Section 3.1 in VCS-PD.
Justification of choice of data or description of measurement methods and procedures applied	The average values of thermal plants in Turkey are taken from Tool to calculate the emission factor for an electricity system” version 06.0.
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	$EF_{grid, CM, y}$
Data unit	tCO ₂ /MWh
Description	Emission factor of the Turkish grid determined ex- ante. Calculated specific emission factors based on the carbon emission data and the electricity production of the grid.
Source of data	Please see registered PDD
Value applied	0.5471 tCO ₂ /MWh
Justification of choice of data or description of measurement methods and procedures applied	There is no information on the fuel specific default emission factor in Turkey, hence, IPCC values has been used.
Purpose of Data	Calculation of baseline emissions
Comments	-

4.2 Data and Parameters Monitored

Data / Parameter	EG _{facility}																
Data unit	MWh/yr																
Description	Quantity of net electricity generation supplied to the grid in year y																
Source of data	Main source is the monthly meter readings records (EPIAŞ data, also known as PMUM). Data from remote automatic meter reading system (OSOS) is used for crosschecking. Invoicing of the electricity production is carried out according to EPIAŞ data; thus, rendering the EPIAŞ data official source of electricity generation.																
Description of measurement methods and procedures to be applied	The net electricity generation supplied to the grid is measured continuously by meters (both main and spare) and recorded monthly. from the EPIAS web site is be used for calculating EG _y .																
Frequency of monitoring/recording	The produced and consumed electricity is continuously measured by the meters attached to the power plant. This continuous measurement is recorded on a monthly basis. As a result, net electricity supplied to the grid is calculated.																
Value monitored	<table><tr><td>2021 Vintage (01.05.2021-31.12.2021)</td><td>119,521.62 MWh</td></tr><tr><td>2022 Vintage (01.01.2022-30.06.2022)</td><td>80,367.15 MWh</td></tr></table>		2021 Vintage (01.05.2021-31.12.2021)	119,521.62 MWh	2022 Vintage (01.01.2022-30.06.2022)	80,367.15 MWh											
2021 Vintage (01.05.2021-31.12.2021)	119,521.62 MWh																
2022 Vintage (01.01.2022-30.06.2022)	80,367.15 MWh																
Monitoring equipment	Continuous measurement and at least monthly recording. Information of the meters are listed as followed⁹: Power meters: <table><tr><td></td><td>Main Meter</td><td>Spare Meter</td></tr><tr><td>Name</td><td>Ana Sayaç</td><td>Yedek Sayaç</td></tr><tr><td>Brand</td><td>ITRON</td><td>ITRON</td></tr><tr><td>Serial Number</td><td>73055353</td><td>73055354</td></tr><tr><td>Accuracy Class</td><td>0.2S</td><td>0.2S</td></tr></table>			Main Meter	Spare Meter	Name	Ana Sayaç	Yedek Sayaç	Brand	ITRON	ITRON	Serial Number	73055353	73055354	Accuracy Class	0.2S	0.2S
	Main Meter	Spare Meter															
Name	Ana Sayaç	Yedek Sayaç															
Brand	ITRON	ITRON															
Serial Number	73055353	73055354															
Accuracy Class	0.2S	0.2S															

⁹ First Index Protocol is available to the DOE.

	The latest test meters dates are 25/11/2018 and 10/10/2020 ¹⁰ .
QA/QC procedures to be applied	- Measurements are undertaken using energy meters. - Concerning metering system accuracy, project participants have to comply with relevant national legislation According to b) paragraph of the 9th Article of the Regulation of Metering and Testing of Metering Systems “periodic tests of meters of electricity, water, coal gas, natural gas and current and voltage transformers are done every 10 years.” Calibration date of the power meters is 06/12/2016. - The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. Main source is the monthly meter readings records (EPIAŞ data, also known as PMUM). Data from remote automatic meter reading system (OSOS) is used for crosschecking. Invoicing of the electricity production is carried out according to EPIAŞ data; thus, rendering the EPIAŞ data official source of electricity generation.
Purpose of the data	Calculation of baseline emissions
Calculation method	Direct continuous measurement
Comments	-

4.3 Monitoring Plan

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 proponent is responsible for the implementation of the 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.

Monitoring data is collected in accordance with the agreement done between the project owner and Turkish Electricity Transmission Company (TEİAŞ) which provides the infrastructure for the connection to the national grid. The metering system is defined in the

¹⁰ Meter tests are available to the DOE.

agreement as two groups: main meter and spare meter. The design of the metering system is checked and approved by TEIAS before commissioning of the plant.

Please see below the management structure for the plant operation:

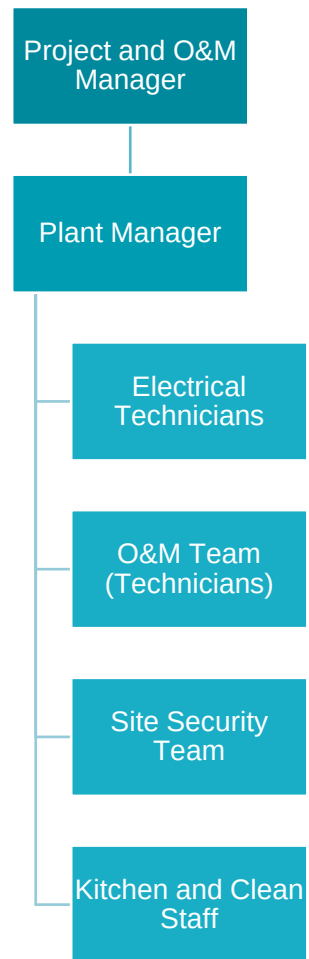


Figure 3. The management structure for the plant operation

Project Manager is responsible for all issues related to project and operation of the plant. Plant Manager is responsible for daily operational processes of the plant, management of the plant personnel, and other technical and management issues for the plant. Technicians are responsible for monitoring of the plant and turbines for all day and night in the control room. In total 15 employees are working for the operation of the plant. Additionally, the Project Activity, works with a private occupational health and safety (OHS) company and is audited in every two months.

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's is the only one authorized to deal with fixing, calibrating, or changing the meters, which is 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 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. The capacity of the transmission line connected is medium voltage of 154 kVA, the accuracy class for power meters have been defined in the Communiqué for Power Meters as 0.2S class.

The primary source is the EPIAS records. Net electricity exported is crosschecked with Meter Reading Forms. EPIAS is the financial settlement center of TEIAS¹¹. The Meter Reading Forms are filled by the project owner and approved by the governmental officers. Additionally, the remote reading by the governmental body is also available. The website of EPIAS is accessible to Project 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. All monitoring data collected is archived electronically and will be kept at least for 2 years after the end of the last crediting period.

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

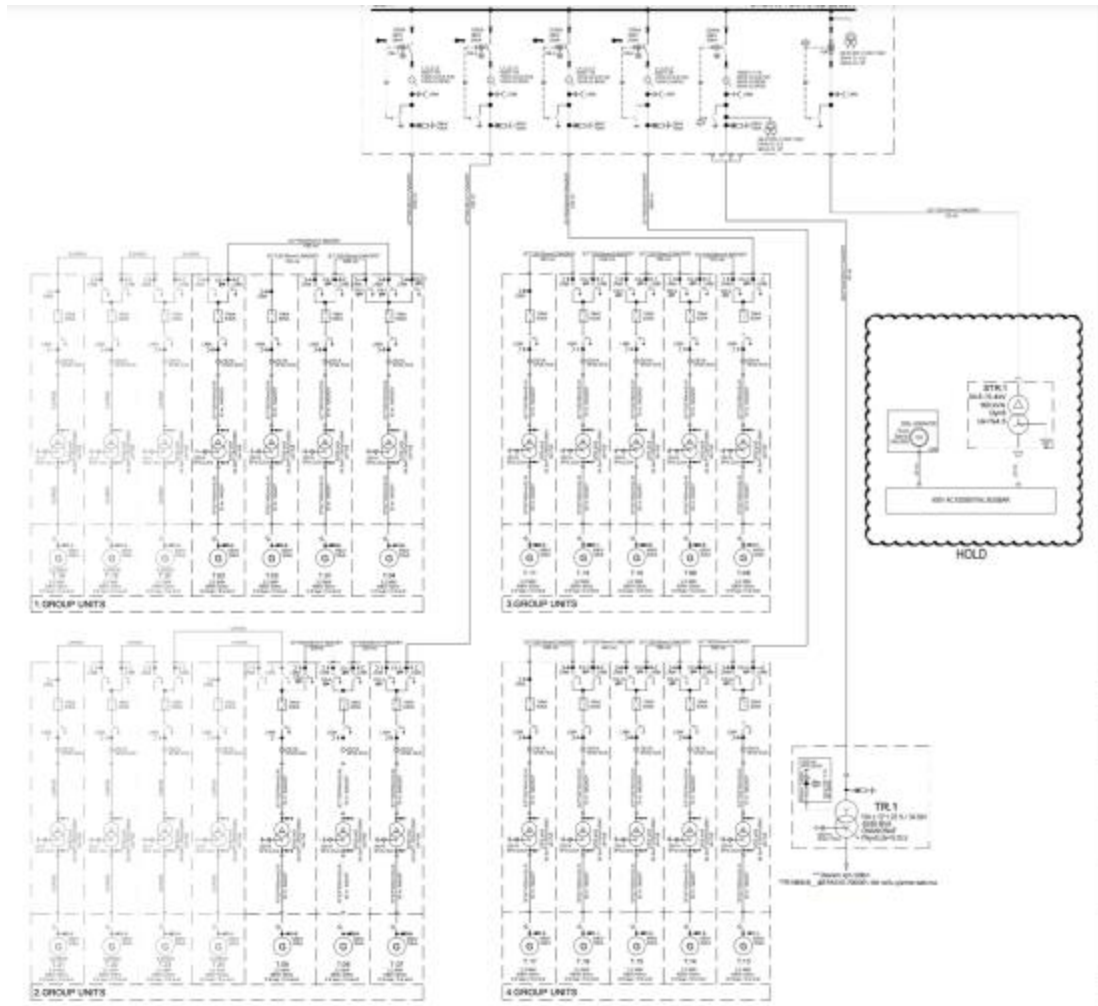


Figure 4. The Single Line Diagram of Kınık Wind Farm Project

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

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)

Table 5 - 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]
May-21	9,007.97	98.27	8,909.70	0.5471	4,874
Jun-21	7,306.76	75.48	7,231.28	0.5471	3,956
Jul-21	19,511.44	37.20	19,474.24	0.5471	10,654
Aug-21	16,798.43	47.35	16,751.08	0.5471	9,165
Sep-21	19,918.36	19.09	19,899.27	0.5471	10,887
Oct-21	18,977.66	39.13	18,938.53	0.5471	10,361
Nov-21	13,271.39	96.06	13,175.33	0.5471	7,208
Dec-21	15,175.20	33.01	15,142.19	0.5471	8,284
Jan-22	12,198.38	33.05	12,165.33	0.5471	6,656
Feb-22	11,329.76	74.94	11,254.82	0.5471	6,158
Mar-22	16,867.55	47.41	16,820.14	0.5471	9,202
Apr-22	10,886.39	74.70	10,811.69	0.5471	5,915
May-22	11,522.36	79.15	11,443.21	0.5471	6,261
Jun-22	17,902.34	30.38	17,871.96	0.5471	9,778
2021 Vintage (01.05.2021- 31.12.2021)	119,967.21	445.59	119,521.62	0.5471	65,390
2022 Vintage (01.01.2022- 30.06.2022)	80,706.78	339.63	80,367.15	0.5471	43,968
Total	200,673.99	785.22	199,888.77	0.5471	109,358

5.2 Project Emissions

In accordance with the methodology ACM0002 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

No leakage is to be accounted by the Project Activity. This is in line with the registered PD and applicable methodology ACM0002 Version 17.0. Therefore, the leakage from the Project Activity is zero.

5.4 Net GHG Emission Reductions and Removals

In accordance with ACM0002 Version 17.0, the baseline emissions are calculated as the net electricity generated by the project activity, multiplied with the baseline emission factor of the project grid.

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

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)

$EF_{grid,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system"(t CO₂/MWh)

$$ER_y = BE_y - PE_y - LE_y$$

$$ER_y = 109,358 - 0 - 0$$

$$ER_y = 109,358 \text{ tCO}_2\text{e}$$

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2021	65,390	0	0	65,390
2022	43,968	0	0	43,968
Total	109,358	0	0	109,358