

EVRENCİK WPP

Document prepared by (*Sıla Duran – Sekans Enerji Limited ŞTİ.*)

Name of the project	<i>Evrencik WPP</i>
Project holder	<u><i>Sekans Enerji Limited ŞTİ. Evrencik Rüzgar Enerjisinden Elektrik Üretim A.Ş.</i></u>
Project holder's contact information	<u><i>Sekans Enerji Limited ŞTİ.</i></u> <u><i>Project Holder</i></u> <u><i>Mrs. Sıla Duran</i></u> <u><i>sil@sekansdanismanlik.com</i></u> <u><i>Emniyet Evleri District, Eski Büyükdere Street, No: 1/1</i></u> <u><i>Aparment No: 1Bo4 Kağıthane/İstanbul, Türkiye</i></u> <u><i>Mr. Halil İleri</i></u> <u><i>halil.ileri@edincikres.com</i></u> <u><i>+90 224 225 55 50</i></u> <u><i>Dumlupınar OSB District, Açelya Street No:2</i></u> <u><i>Osmangazi/Bursa, Türkiye</i></u>
Project participants	<u><i>1. Evrencik Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi</i></u> <u><i>Legal Owner of the Project</i></u> <u><i>Mr. Halil İleri</i></u> <u><i>halil.ileri@edincikres.com</i></u> <u><i>+90 224 225 55 50</i></u> <u><i>Dumlupınar OSB District, Açelya Street No:2</i></u> <u><i>Osmangazi/Bursa, Türkiye</i></u> <u><i>Sekans Enerji Limited ŞTİ.</i></u>

	<p>2. Sekans Enerji Limited ŞTİ.</p> <p>Project Holder</p> <p>Mrs. Sila Duran</p> <p>sila@sekansdanismanlik.com</p> <p>Emniyet Evleri District, Eski Büyükdere Street, No: 1/1 Aparment No: 1Bo4 Kağıthane/İstanbul, Türkiye Mrs. Sila Duran</p> <p>sila@sekansdanismanlik.com</p> <p>Emniyet Evleri District, Eski Büyükdere Street, No: 1/1 Aparment No: 1Bo4 Kağıthane/İstanbul, Türkiye</p>
Version	053
Date	20/05 20/11/2024
Project type	Non-Conventional and Renewable Energy Sources (NCRE)GHG Project
Grouped project	The project is not a grouped project.
Applied Methodology	CDM Approved ACM0002 Grid-connected electricity generation from renewable sources, version 2+2.0
Project location (City, Region, Country)	Evrencik Village of Kırklareli Province, Türkiye
Starting date	14/10/2020

Quantification period of GHG emissions reduction	14/10/2020 – 13/10/2027 renewable 5 times
Estimated total and average annual GHG emission reduction/removals amount	<p><u>Annual Average: 272,835,328,924</u> tCO₂/year</p> <p><u>Total: -1,909,8442,302,467</u> tCO₂/total</p>
Sustainable Development Goals	<p><i>SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all</i></p> <p><i>SDG8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</i></p> <p><i>SDG13: Take urgent action to combat climate change and its impacts</i></p>
Special category, related to co-benefits	<p><i>Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix</i></p> <p><i>Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men</i></p> <p><i>Target 8.8: Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.</i></p> <p><i>Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</i></p>

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1 Project type and eligibility

1.1 Scope in the BCR Standard

Evrencik WPP is a wind power plant, located in Kırklareli Province, Türkiye.

The purpose of the Project is to produce renewable electricity using wind as the power source and to contribute to Turkey's growing electricity demand through a sustainable and low carbon technology. The project will displace the same amount of electricity generated by the grid dominated by fossil fired power plants.

The project is eligible under the scope of the BCR Standard by meeting one of the conditions stated below:

The scope of the BCR Standard is limited to:	
The following greenhouse gases, included in the Kyoto Protocol: Carbon Dioxide (CO ₂), Methane (CH ₄) and Nitrous Oxide (N ₂ O).	x
GHG projects using a methodology developed or approved by BioCarbon, applicable to GHG removal activities and REDD+ activities (AFOLU Sector).	
Quantifiable GHG emission reductions and/or removals generated through implementation of GHG removal activities and/or REDD+ activities (AFOLU Sector).	
GHG projects using a methodology developed or approved by BioCarbon, applicable to activities in the energy, transportation and waste sectors.	x
Quantifiable GHG emission reductions generated through implementation of activities in the energy, transportation and waste sectors.	x

Evrencik WPP is eligible according to the BCR standard, as it is a project that provides quantifiable CO₂ emission reduction from the electricity generated within the renewable wind power plant project activity, using the ACM002 [v2.1v22.0](#) methodology approved by BCR.

1.2 Project type

Activities in the AFOLU sector, other than REDD+	
REDD+ Activities	
Activities in the energy sector	x
Activities in the transportation sector	
Activities related to Handling and disposing of waste	

1.3 Project scale

The project activity is large-scale as it has an installed power of more than 15 MW.

2 General description of the project

Evrencik WPP (hereafter referred as “Project”) is a new built wind power plant, located in Kırklareli Province, Turkey owned by Evrencik Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi. The generation license of the project was issued on 13/01/2022 for 49 years. The project has an installed capacity of 129.60 MW_m/129.60 MWe and the annual generation is estimated to be ~~430,000~~518,400 MWh. ~~Currently, 27 wind turbines (120 MW) are in operation, but an additional 2 (9.60MW) turbines will be commissioned in the near future.~~

The purpose of the Project is to produce renewable electricity using wind as the power source and to contribute to Turkey’s growing electricity demand through a sustainable and low carbon technology. The project will displace the same amount of electricity generated by the grid dominated by fossil fired power plants. The annual emission reduction estimated by the project is ~~328,924~~ 272,835 tCO₂. During the crediting period, ~~2,302,467~~ tCO₂ are expected to be reduced.

Project has been developed to have twenty-nine Nordex N149 ~~/ 4.0-4.5-4.8~~ turbines, ~~twenty-four of them having a capacity of 4.5 MW_m/4.5 MW_e, three of them having a capacity of 4.0 MW_m/4.0 MW_e and two of them having a capacity of 4.8 MW_m/4.8 MW_e each having a capacity of 4.8 MW_m/4.8 MWe. The project activity includes Siemens and Winergy branded 3-phased, double fed asynchronous type generators with a power~~

pf 4835 kW per unit and 50 Hz frequency. The electricity is transmitted to substation Vize TM, via an 18.24459 km, 154 kV transmission line.

The Project has started its commercial operation through the ministry acceptance of one turbine with the installed capacity of 4.58 MWm/4.58 MWe on 14/10/2020¹.

The project is expected to contribute 3 SDGs which are SDG 7, 8 and 13.

SDG 7 – Affordable and Clean Energy: The project produces electricity from renewable energy sources using wind as the power source and to contribute to Türkiye’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 contributes to the goal 7.2 and indicator 7.2.1.

SDG 8 – Decent Work and Economic Growth: 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.

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

The project contributes to the following targets 8.5.; 8.8.and following indicators 8.5.2.;; 8.8.1.

SDG 13 – Climate Action: The project contributes to improve the environmental situation in the region and in the country as avoiding fossil fuel-based electricity will enhance the air quality and help to reduce the adverse effects on the climate. Through renewable technologies and wind-based electricity sustainable and climate friendly development is promoted. While emission reduction is realized, technology transfer is also realized as benefitting from wind energy.

The project contributes to the following target 13.3. and following indicator 13.3.2.

¹ Provisional Acceptance Document

2.1 GHG project name

Evrencik WPP

2.2 Objectives

Main economic and social benefits of the project includes:

- Displacing the electricity generated by fossil fuel fired power plants by utilizing the renewable resources so as to avoid environmental pollution and GHG emissions,
- Contributing the economic development of the region by providing sustainable energy resources,
- Increasing the income and local standard of living by providing job opportunities for the local people.

~~2.3~~ Project activities

~~2.3 The Project Scenario entails the installation of twenty-seven Nordex N149 turbines, each of them having a capacity of 4.8 MWm/4.8 MWe. The turbines are 3-bladed with a horizontal axis. The turbine blades have the ability to change angles according to wind direction. Turbines are connected to the substation to the grid via 18.24459 km, 154 kV electricity transmission line. The metering has been done at substation before electricity is fed into the grid~~

The Project Scenario entails the installation of twenty-nine Nordex N149 turbines, twenty-four of them, each with a capacity of 4.5 MWm/4.5 MWe, three of them, each with a capacity of 4.0 MWm/4.0 MWe and two of them, each with a capacity of 4.8 MWm/4.8 MWe. Total installed capacity of the project activity is 129.60 MWm/129.60 MWe. The turbines are 3 bladed with a horizontal axis. The turbine blades have the ability to change angles according to wind direction. Turbines are connected to the substation to the grid via 18.24459 km, 154 kV electricity transmission line. The metering has been done at substation before electricity is fed into the grid.

Table 1. Key technical specifications of wind turbines

Parameter	Value
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Brand	Nordex (N149)
<u>Type</u>	<u>Nordex N149 / 4.0-4.5-4.8</u>
Rated Power	4.8 MWm / 4.8 MWe <u>24 x 4.5 MWm/4.5 MWe</u> <u>3 x 4.0 MWm/4.0 MWe</u> <u>2x 4.8 MWm/4.8 MWe</u>
Rotor Diameter	149.1 m
Cut-in / cut-off wind speed	<u>3 m/s - 26</u> 6 m/s
Number of blades	3
<u>Swept area</u>	<u>17,460 m²</u>
Hub Height	164 m
<u>Total Installed Capacity</u>	<u>129.60 MWm / 129.60 MWe</u>

Table 2. Key technical specifications of generators

<u>Parameter</u>	<u>Value</u>
<u>Brand</u>	<u>WINERGY – 6 Units</u> <u>SIEMENS – 21 Units</u>
<u>Type</u>	<u>Double fed asynchronous generator</u>
<u>Phase</u>	<u>3-phased</u>

<u>Power</u>	<u>4,835 kW</u>
<u>Voltage</u>	<u>690 V</u>
<u>Frequency</u>	<u>50 Hz</u>
<u>Revs per minute</u>	<u>1230</u>

Additionally, the measurements will be performed by four measuring devices, which are the main (primary) measuring devices and the backup (secondary) measuring devices. The brand of power meters is EMH (LZQJ-XC). The measuring frequency of all devices is continuous. The meters are

placed at the Powerhouse. The measurements will be performed by two measuring devices, which are the main (primary) measuring device and the backup (secondary) measuring device. The measuring frequency of both devices is continuous. The meters are placed at the Powerhouse.

The baseline scenario has been defined as the generation of the same amount of electricity by the national grid which is dominated by thermal power plants. The main emission source of electricity generation in fossil fuel fired power plants that are connected to Turkish National Grid is CO₂ as in baseline scenario. Compared to that baseline scenario, the project activity has positive influences on sustainable development in Turkey.

The project activity utilizes long-term potential of wind energy, efficient technology to reduce GHG emissions as well as to diversify and increase security of the local energy supply and contributing to a sustainable development. The project contributes to technology and know-how transfer from Germany since the electricity generation technologies in Turkey are currently dominated by fossil fuel power plants.

2.4 Project location

The project activity is located in Sofular and Evrencik Village of Kırklareli Province, Türkiye. Coordinates of turbines in DD format is shown in the table below.

Turbine No.	Latitude	Longitude
T1	41.649° N 27.684° N	27.684° E 41.649° E
T2	41.646° N 27.687° N	27.687° E 41.646° E
T3	41.645° N 27.691° N	27.691° E 41.645° E
T4	41.643° N 27.695° N	27.695° E 41.643° E
T5	41.642° N 27.699° N	27.699° E 41.642° E
T6	41.638° N 27.695° N	27.695° E 41.638° E
T7	41.656° N 27.698° N	27.698° E 41.656° E
T8	41.654° N 27.701° N	27.701° E 41.654° E
T9	41.65° N 27.701° N	27.701° E 41.65° E
T10	41.677° N 27.728° N	27.728° E 41.677° E
T11	41.658° N 27.694° N	27.694° E 41.658° E
T12	41.677° N 27.736° N	27.736° E 41.677° E
T13	41.674° N 27.738° N	27.738° E 41.674° E
T14	41.67° N 27.739° N	27.739° E 41.67° E
T15	41.672° N 27.727° N	27.727° E 41.672° E
T16	41.667° N 27.729° N	27.729° E 41.667° E

T17	<u>41.663° N</u> <u>27.731° N</u>	<u>27.731° E</u> <u>41.663° E</u>
T18	<u>41.647° N</u> <u>27.725° N</u>	<u>27.725° E</u> <u>41.647° E</u>
T19	<u>41.647° N</u> <u>27.729° N</u>	<u>27.729° E</u> <u>41.647° E</u>
T20	<u>41.645° N</u> <u>27.733° N</u>	<u>27.733° E</u> <u>41.645° E</u>
T21	<u>41.635° N</u> <u>27.748° N</u>	<u>27.748° E</u> <u>41.635° E</u>
T22	<u>41.638° N</u> <u>27.732° N</u>	<u>27.732° E</u> <u>41.638° E</u>
T23	<u>41.631° N</u> <u>27.752° N</u>	<u>27.752° E</u> <u>41.631° E</u>
T24	<u>41.652° N</u> <u>27.681° N</u>	<u>27.681° E</u> <u>41.652° E</u>
T25	<u>41.655° N</u> <u>27.677° N</u>	<u>27.677° E</u> <u>41.655° E</u>
T26	<u>41.644° N</u> <u>27.744° N</u>	<u>27.744° E</u> <u>41.644° E</u>
T27	<u>41.639° N</u> <u>27.745° N</u>	<u>27.745° E</u> <u>41.639° E</u>
T28	<u>41.641° N</u> <u>27.733° N</u>	<u>27.733° E</u> <u>41.641° E</u>
T29	<u>41.634° N</u> <u>27.732° N</u>	<u>27.732° E</u> <u>41.634° E</u>



Figure 1. Project Location

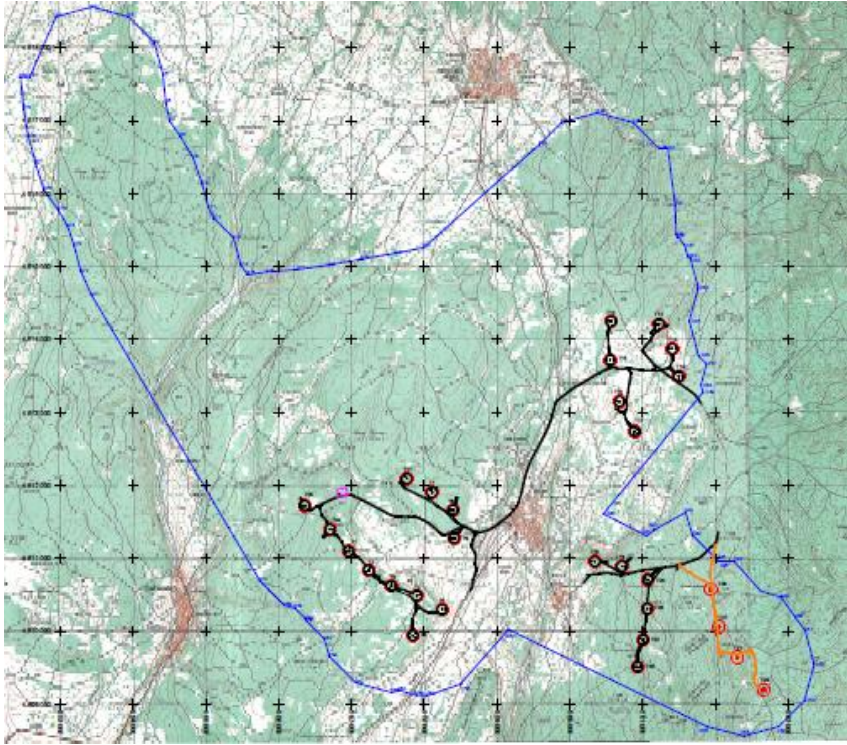


Figure 2. Project Layout

2.5 Additional information about the GHG Project

N/A

3 Quantification of GHG emissions reduction

3.1 Quantification methodology

The United Nations approved consolidated baseline methodology applicable to this project is ACM0002: Grid-connected electricity generation from renewable sources --- Version ~~2422~~.o².

ACM0002 refers to the following tools:

- TOOL 01: Tool for the demonstration and assessment of additionality, version 07.0.0³
- TOOL 07: Tool to calculate the emission factor for an electricity system, version 07.0⁴
- [TOOL 10: Tool to determine the remaining lifetime of equipment, version 01⁵](#)
- TOOL 24: Common Practice, version 03.1⁶
- TOOL 27: Investment Analysis, version 13.0⁷

Type (methodology, tool, module)	Reference ID	Version	Title
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²

<https://cdm.unfccc.int/UserManagement/FileStorage/R0IJ1X9LQ7W2GOYHSMBFCPE3VKZ685>

<https://cdm.unfccc.int/UserManagement/FileStorage/ZPFJL04OU2RYC6N3HASIXV7K84QBG9>

³ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁴ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

⁵ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf>

⁶ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf>

⁷ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v13.pdf>

Methodology	ACM0002	22.0	Grid-connected electricity generation from renewable sources
Tool	TOOL01	07.0.0	Tool for the demonstration and assessment of additionality
Tool	TOOL07	07.0	Tool to calculate the emission factor for an electricity system
Tool	TOOL24	03.1	Common Practice
Tool	TOOL27	13.0	Investment Analysis

3.1.1 Applicability conditions of the methodology

The 129.6 MWm / 129.6 MWe Evrencik WPP is a wind power type, greenfield, renewable, grid connected electricity generation project. Since the total installed capacity is above 15 MW, large scale methodology “ACM0002: Grid-connected electricity generation from renewable sources --- Version 22.0” has been used. Applicability criterias and how the project meets these criterias are given in below:

Methodology ID	Applicability condition	Justification
ACM0002	<p>This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <p>(a) Install a Greenfield power plant;</p> <p>(b) Involve a capacity addition to (an) existing plant(s);</p>	<p>The project activity involves a new installation of a wind power plant. Hence, the methodology is applicable.</p>

	<p>(c) Involve a retrofit of (an) existing operating plants/units;</p> <p>(d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or</p> <p>(e) Involve a replacement of (an) existing plant(s)/unit(s)</p> <p><u>(f) Install a Greenfield power plant together with a grid-connected Greenfield pumped storage power plant. The greenfield power plant may be directly connected to the PSP or connected to the PSP through the grid.</u></p>	
ACM0002	<p>In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <p>(a) Integrate BESS with a Greenfield power plant;</p> <p>(b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic or wind power plant(s)/unit(s);</p> <p>(c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s);</p>	<p>The project does not involve the integration of a BESS.</p>

	<p>(d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s).</p> <p><u>(e) Integrate a BESS together with a Greenfield power plant that is operating in coordination with a PSP. The BESS is located at site of the greenfield renewable power plant.</u></p>	
ACM0002	<p>The methodology is applicable under the following conditions:</p> <p>(a) The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;</p> <p>(b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and</p>	<p>a) The project is a wind power plant.</p> <p>b) The project does not involve capacity additions, retrofits, rehabilitations or replacements.</p> <p><u>c) The project does not involve the integration of a BESS.</u></p> <p><u>d) The project does not involve the integration of a BESS.</u></p> <p><u>e) The project does not involve PSP.</u></p>

	<p>no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity<u>activity</u></p> <p><u>(c) In case of Greenfield project activities applicable under paragraph 5 (a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g. by referring to feasibility studies or investment decision documents);</u></p> <p><u>(d) The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies 2 may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g. week(s), months(s)) when the BESS</u></p>	
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	<p><u>consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period.</u></p> <p><u>(e) In case the project activity involves PSP, the PSP shall utilize the electricity generated from the renewable energy power plant(s) that is operating in coordination with the PSP during pumping mode.</u></p>	
ACM0002	<p>In case of hydro power plants, one of the following conditions shall apply:</p> <p>(a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or</p> <p>(b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation (3), is greater than 4 W/m²; or</p> <p>(c) The project activity results in new single or multiple reservoirs and the power density, calculated</p>	<p>The project is a wind power plant, hence this condition is not applicable.</p>

	<p>using equation (3), is greater than 4 W/m^2.</p> <p>(d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (7), is lower than or equal to 4 W/m^2, all of the following conditions shall apply:</p> <p>(i) The power density calculated using the total installed capacity of the integrated project, as per equation (8), is greater than 4 W/m^2 ; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m^2 shall be: a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydro power project.</p>	
ACM0002	In the case of integrated hydro power projects, project participants shall:	The project is a wind power plant, hence this condition is not applicable

	<p>(a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or</p> <p>(b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.</p>	
<p><u>ACM0002</u></p>	<p><u>In the case of PSP, the project participants shall demonstrate in the PDD that the project is not using water which would have been used to generate electricity in the baseline.</u></p>	<p><u>The project does not involve PSP.</u></p>

ACM0002	<p>The methodology is not applicable to:</p> <p>(a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;</p> <p>(b) Biomass fired power plants/units.</p>	<p>The project does not involve switching from fossil fuels to renewable energy sources and is not a biomass fired power plant.</p>
ACM0002	<p>In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance”.</p>	<p>The project does not involve retrofits, rehabilitations, replacements, and it’s not a capacity addition.</p>

For the applicability of “Tool to calculate the emission factor for an electricity system, ver 07.0”, following conditions are met:

Tool ID	Applicability condition	Justification
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07	<p>This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).</p>	<p>The project is a wind power plant providing clean energy to the Turkish National Grid.</p>
07	<p>Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in “Appendix 1: Procedures related to off-grid power generation” should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and</p>	<p>The project is a grid connected power plant.</p>

	stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	
07	In case of CDM projects, the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	As the project is not a CDM project and the BCR program accepts projects from worldwide, this condition is not applicable.
07	Under this tool, the value applied to the CO ₂ emission factor of biofuels is zero.	As the project does not involve biofuels, this condition is not applicable.

For the applicability of “Tool for the demonstration and assessment of additionality, Version 07”, following conditions are met:

Tool ID	Applicability condition	Justification
01	<u>The use of the “Tool for the demonstration and assessment of additionality” is not mandatory for project participants when proposing new methodologies. Project participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tool. Project activities that apply this tool in context of</u>	Since this tools application is required in the approved methodology, it is used in this project

	approved consolidated methodology ACM0002, only need to identify that there is at least one credible and feasible alternative that would be more attractive than the proposed project activity.	
<u>01</u>	<u>Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory.</u>	<u>Since this tools application is required in the approved methodology, it is used in this project</u>

For the applicability of “Common Practice, Version 03.1”, following conditions are met:

Tool ID	Applicability condition	Justification
24	This methodological tool is applicable to project activities that apply the methodological tool “Tool for the demonstration and assessment of additionality”, the methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality”, or baseline and monitoring methodologies that use the common practice test for the demonstration of additionality.	Since this tools application is required in the approved methodology, it is used in this project
24	In case the applied approved baseline and monitoring methodology defines approaches for the conduction of the common	Since this tools application is required in the approved methodology, it is used in this project

	practice test that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.	
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For the applicability of “Investment analysis, Version 13.0”, following conditions are met:

Tool ID	Applicability condition	Justification
27	This methodological tool is applicable to project activities that apply the methodological tool “Tool for the demonstration and assessment of additionality”, the methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality”, the guidelines “Non-binding best practice examples to demonstrate additionality for SSC project activities”, or baseline and monitoring methodologies that use the investment analysis for the demonstration of additionality and/or the identification of the baseline scenario.	Since this tools application is required in the “Tool for the demonstration and assessment of additionality”, it is used in this project.
27	<u>In case the applied approved baseline and monitoring methodology contains requirements for the investment analysis that are different from those described in this methodological tool, the</u>	<u>Applied methodologies in this project does not contain requirements that are different from TOOL 27.</u>

[requirements contained in the methodology shall prevail.](#)

3.1.2 Methodology deviations (if applicable)

There are no deviations from proposed methodologies.

3.2 Project boundaries, sources and GHGs

3.2.1 Spatial limits of the project

The project boundary encompasses the physical, geographical site of the renewable generation source. The wind power plant with all installation is the project boundary.

As the electricity generated by the project displaces the electricity generated by Turkish National Grid, the project boundary is defined as the Turkish National Grid. This includes the project site and all power plants connected physically to the national grid and excludes the off-grid power plants. Please see the diagram below:

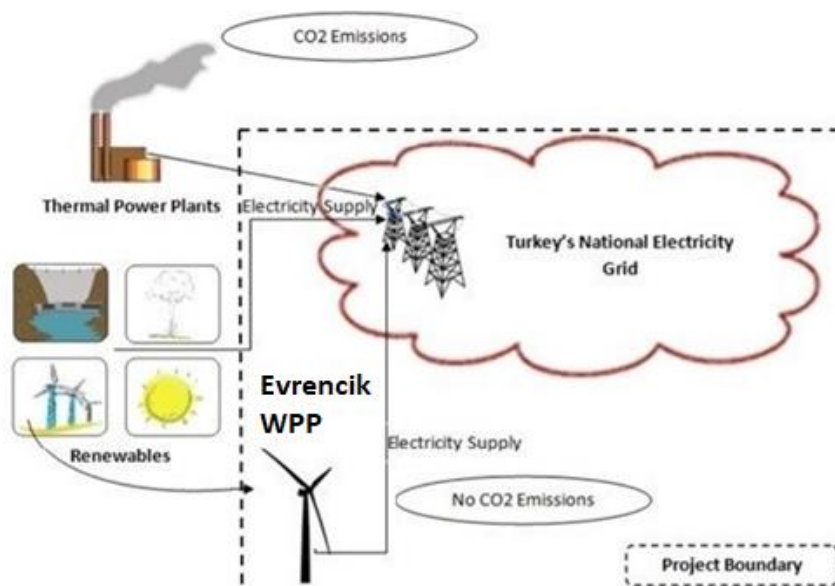


Figure 3. Project Boundary

3.2.2 Carbon reservoirs and GHG sources

Source or reservoir	GHG	Included (Yes/No/Optional)	Justification
Baseline CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity.	CO ₂	Yes	Main source. The dominant emissions from power plants are in the form of CO ₂ , therefore CO ₂ emissions from fossil fuel fired power plants connected to the grid will be accounted for in baseline calculations.
	CH ₄	No	Minor emission source. Excluded for simplification.
	N ₂ O	No	Minor emission source. Excluded for simplification.
Project Emissions as a result of Project Activity	CO ₂	No	Minor emission source. Excluded for simplification.
	CH ₄	No	Minor emission source. Excluded for simplification.
	N ₂ O	No	Minor emission source. Excluded for simplification.

3.2.3 Time limits and analysis periods

As per BCR Standard v3.3 Section 10.5, “renewable quantification period may be at most seven years and shall be renewed at least five, for a maximum total length of 42 years”. As a result, the project timeframe corresponds to a 7-year period for quantifying GHG emission reductions.

3.2.3.1 Project start date

The start date of the project activity is 14/10/2020, which is the commissioning date of the first turbine that result in reductions/removals of GHG emission begins.

3.2.3.2 Quantification period of GHG emission reductions/removals

The first quantification period is for 7 years, from 14.10.2020 to 13.10.2027, including both dates.

3.2.3.3 Monitoring periods

The first monitoring period of the project will cover the dates between 14.10.2020 to 31.03.2024. Subsequent monitoring periods are planned to occur every 2 years.

3.3 Identification and description of the baseline or reference scenario

According to ACM0002 (Version 2022.0), if the project activity is the installation of a new grid-connected renewable power plant, the baseline scenario is the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources.

As it may be seen in Figure 43., The development of Turkey's installed capacity by primary energy resources between the years, 2009-2019⁸, the electricity generation has mainly been done by fossil fuel fired power plants in Turkey. Total Installed electricity generation capacity in Turkey has reached 91,267 megawatts (MW) as of 2019. As having a share of 8.32%, wind power projects have an installed capacity of 7,591.2 MW.

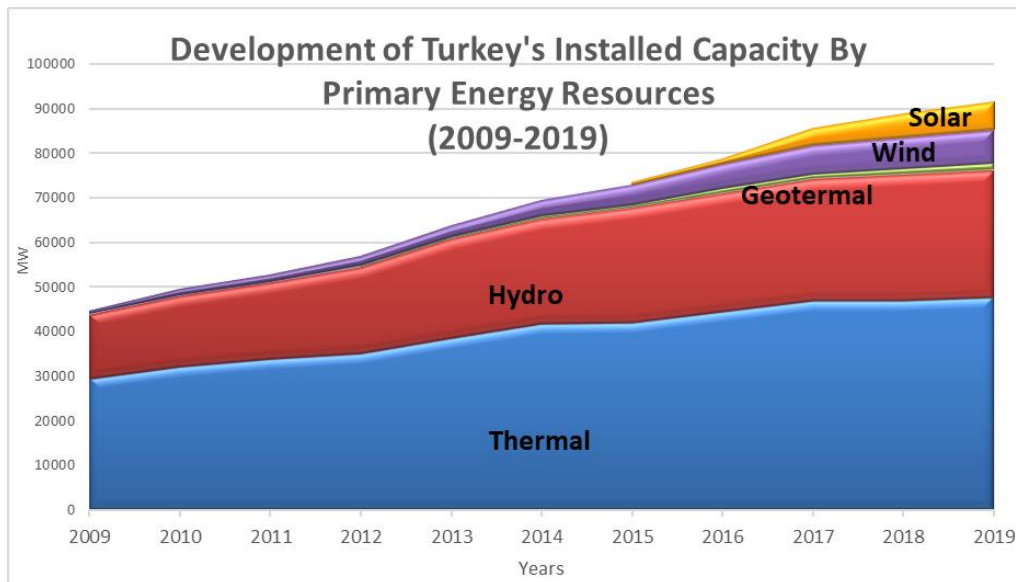


Figure 4. The development of Turkey's installed capacity

Table 32 shows the comparison of renewable electricity generation share in Turkey total electricity generation and the distribution of the renewable energy resources within this share between the years of 2009 and 2019. It's obvious that the renewable electricity generation has doubled during this period. Hydro has still the biggest share with 67.15%,

⁸ Turkish Electricity Transmission Corporation, 2020: <https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri>

whereas solar and wind have the portions of %6.99 and 16.43%, respectively. Geothermal and biomass have the smallest portions with 6.77% and 2.66%, respectively.

Table 332. Comparison of Renewable Electricity Generation Share In Turkey Total Electricity Generation, 2009-2019

YEARS	HYDRO	GEOTHERMAL	WIND	SOLAR	BIOMASS	RENEWABLE SHARE IN TOTAL GENERATION %
2009	94.25%	1.14%	3.92%	-	0.69%	19.6%
2019	67.15%	6.77%	16.43%	6.99%	2.66%	43.5%

In reference to 5-year capacity projection⁹, it is clear that fossil fuels will remain the main sources for electricity generation through until 2024. Fossil fuels will continue to dominate the market. Hydro will account for 15% of the mix whereas all non-hydro renewable combined (geothermal/ biomass/ solar/ wind) will only account for 11% of all electricity generation capacity. This projection is consistent with continuing fossil fuel dependent characteristics of Turkish electricity sector.

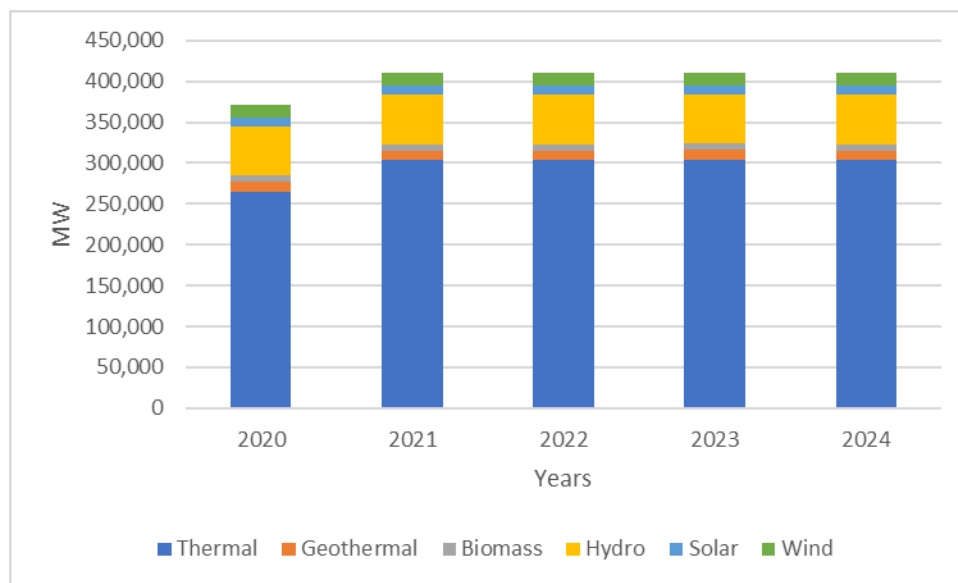


Figure 5. 5-year capacity projection

⁹ <https://webapi.teias.gov.tr/file/abeac87d-3abc-4532-9cf4-d6f3a9d34c17?download>

The latest updated data for Operating, Build and Combined Margin Emission Factors have been published by the Ministry of Energy and Natural resources on 18.03.2024. The Ministry has calculated the factors as using the “Tool to calculate the emission factor for an electricity system version 07.0”. Since it’s the latest available data, published by the Ministry, these factors have been considered.

Calculation of the Operating Margin Emission Factor

It’s been published as 0.7279 tCO₂/MWh by the Ministry of Energy and Natural Resources.¹⁰.

Calculation of the Build Margin Emission Factor

It’s been published as 0.3541 tCO₂/MWh by the Ministry of Energy and Natural Resources.¹¹.

Calculating of the Combined Margin Emission Factor

It’s been published as 0.56345 tCO₂/MWh by the Ministry of Energy and Natural Resources.¹².

¹⁰ [Turkish National Grid Emission Factor Information Form published by Turkish Ministry of Energy and Natural Sources. Since the link containing this form cannot be reached from some IP addresses, this form has been shared with verifier. Please see;](https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%99Fikdi%C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Formu.pdf)
https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%99Fikdi%C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Formu.pdf

¹¹ [Turkish National Grid Emission Factor Information Form published by Turkish Ministry of Energy and Natural Sources. Since the link containing this form cannot be reached from some IP addresses, this form has been shared with verifier. Please see;](https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%99Fikdi%C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Formu.pdf)
https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%99Fikdi%C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Formu.pdf

¹² [Turkish National Grid Emission Factor Information Form published by Turkish Ministry of Energy and Natural Sources. Since the link containing this form cannot be reached from some IP addresses, this form has been shared with verifier. Please see;](https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%99Fikdi%C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Formu.pdf)
https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%99Fikdi%C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Formu.pdf

3.4 Additionality

According to Biocarbon’s “Additionality Guidelines v1.3”, “Project holders in sectors other than AFOLU, such as energy, transport, and waste, shall use the Tool provided by the Executive Board of the Clean Development Mechanism (CDM – UNFCCC).”

For demonstrating the additionality of the project, CDM Methodological Tool “Tool for the demonstration and assessment of additionality, v07.0.0” is used.

Step 1- Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a: Define alternatives to the project activity:

The project owner is a well-known company in the power sector and active in generation, wholesale and trading and distribution of electricity. The alternatives are defined related to the investor as per footnote 7 of the version 7.0.0 of the additionality tool:

- 1) The project activity taken without VER or ACR: The investment is not financially attractive and comprises potential risks as described below. Therefore, this alternative is not realistic.
- 2) Building a new power plant utilizing other renewable resource: The Electricity Market License Regulation gives priority to local resources with low environmental impact to generate electricity and therefore other renewable resources are considered as alternatives to the proposed project.
- 3) No activity: In case no project activity is taken, the same amount of electricity will be generated by the existing grid to supply the increasing demand of the country. This alternative is the same as baseline scenario, which is described above as electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

Outcome of Step 1a) The only realistic and credible scenario is that the same amount of electricity will be generated by the existing grid, which is the same as baseline scenario.

Sub-step 1b: Consistency with mandatory laws and regulations:

All alternatives to the project activity are in compliance with the existing laws and regulations which are described below in Table 34.

Table 443. Existing Laws and Regulations

Relevant Laws	Number/ Enactment Date	Aim and Scope
Environmental Law ¹³	Nr. 2872 / 11/08/1983	The approval is requested for power plants from Ministry of Environment and Forest as Electricity License Regulation requests project to be in line with the environmental law.
Electricity Market Law ¹⁴	Nr. 4628 / 03/03/2001	Regulating procedures of electricity generation, transmission, distribution, wholesale, retail for legal entities. Two regulations issued under the law; one for generation licence and the other for market price balancing and conciliation.
Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy ¹⁵	Nr. 5346 / 18/05/2005	Aims to extend the utilization of renewable energy for electricity generation and identifies method and principles for power generation from renewable resources in an economical and conservative manner as well as certification of the electricity generated from renewable resources.
Energy Efficiency Law ¹⁶	Nr. 5627 / 02/05/2007	Identifies method and principles for industry, power plants, residential buildings and transport to imply necessary measures for energy efficiency during electricity generation, transmission, distribution and consumption.

¹³ <https://www.mevzuat.gov.tr/MevzuatMetin/1.5.2872.pdf>

¹⁴ <https://www.mevzuat.gov.tr/MevzuatMetin/1.5.4628.pdf>

¹⁵ <https://www.mevzuat.gov.tr/MevzuatMetin/1.5.5346.pdf>

¹⁶ <https://www.resmigazete.gov.tr/eskiler/2007/05/20070502-2.htm>

Outcome of Step1b: The only realistic scenario is the supply of same amount of electricity from the existing grid, which is in compliance with the laws and regulations.

Step 2 - Investment analysis

The investment analysis below aims to show that “the project activity is not the most economically and financially attractive”.

Sub-step 2a - Determine appropriate analysis method

There are three options for investment analysis method:

- Simple Cost Analysis
- Investment Comparison Analysis and
- Benchmark Analysis

As the project gains revenue from the sale of generated electricity, Simple Cost Analysis is not applicable. Investment Comparison Analysis is also not applicable as no alternative investment is point at issue. Therefore, Benchmark Analysis will be used for the evaluation of the project investment.

Sub-step 2b - Option III-Apply benchmark analysis

For the purpose of benchmark analysis Project IRR ~~before~~-after tax has been chosen as the indicator.

There are no available benchmarks for wind power plant projects in Turkey. The credibility of a particular project is evaluated on the basis of several factors including cost recovery period, risk of postponed commissioning and credibility of the project owner.

Local Commercial Lending Rates

As the tool implies local commercial lending rate is appropriate benchmarks for a project IRR, therefore it could be chosen as a benchmark.

The lending rates for medium term investments are provided by Turkish Development Bank (TKB) to State Planning Organization.

State Planning Organization publishes “Main Economic Indicators” on a monthly basis. The lending rates for January-October 2019 have been given in Table-54.

Table 54. Lending and Deposit Interest Rates¹⁷

Turkish Development Bank (TKB) Interest Rates for Credits		
Year	Month	Medium Term Investment Rate (%)
2019	1	26.3
	2	26.3
	3	26.3
	4	26.3
	5	26.3
	6	26.3
	7	26.3
	8	26.3
	9	21.5
	10	19.0

¹⁷ Lending And Deposit Interest Rates by Development Investment Bank of Turkey (https://www.sbb.gov.tr/wp-content/uploads/2020/07/13-faiz_orani-1.xls)

The investment decision was taken in April 2019. Therefore, the interest rate for April is 26.3% which reflects the banker's expectations for a similar investment.

Sub-step 2c - Calculation and comparison of financial indicators

The following table summarizes the financial figures for the project operation:

Table 665. Summary of financial data

Parameter used for financial analysis	Unit	Value	Source
Expected Electricity Generation	MWh/yr	430,000 518,400	Generation License
Total Investment	EUR USD	104,120,555.43	IRR Spreadsheet
Operational Cost	USD EUR/year/WT G	30,000,000 – 50,000,000	IRR Spreadsheet
Revenues	USD/year	24,946,811 30,869.09 1 (avr. for the investment period)	IRR Spreadsheet
Electricity tariff	USD/MWh	2020 – 2025: 94 (73 + 21) 2025 – 2030: 73 After 2030: 53 52.97	Tariff Regulation for Renewables: https://www.mevzuat.gov.tr/MevzuatMetin/1.5.5346.pdf Feed in Tariff list by EMRA, 2022: https://seffaflik.epi.as.com.tr/transpare

			ncy/piyasalar/gop/ptf.xhtml
Depreciation Period	Year	10	Depreciated economic assets, Turkish Revenue Administration
Income Tax Rate	%	20	Tax Regulation for 2016, <i>(Summary list of Ernst & Young has been used)</i>
Technical Lifetime	Year	25	Default values indicated in “Tool to determine the remaining lifetime of equipment” (Version 01)

The Project Internal Rate of Return (IRR) after tax for the project is calculated as 15.4939% without the ER revenue.

The revenue acquired from the operation of the power plant is not financially attractive to do the investment. Therefore, it is contended that the VACC revenues are required to make the project more financially attractive.

Sub-step 2d - Sensitivity analysis

The sensitivity analysis is applied in order to show that investment decision is not the most attractive alternative financially.

- Investment Cost
- Operating Cost
- Electricity Sales revenue

For a range of $\pm 10\%$ fluctuations in parameters above as advised in “Tool for the demonstration and assessment of additionality”, Table 76 below has been obtained.

Table 76. Sensitivity Analysis for the Project IRR

IRR w/o Carbon Revenue	-10%	-5%	5%	10%
Investment Cost	17.8592%	16.6456%	14.4443%	13.4930%
Operational Cost	16.0946%	15.7993%	15.1814.85%	14.8729%
Electricity Revenue	12.6805%	13.744.09%	16.817.028%	18.2663%

The project IRR becomes 18.2663% with a 10% rise in sales of electricity and 17.9285% with a 10% decrease in investment costs. As a result, the project could be competitive either a rise in price of electricity occurs or the investment cost decrease.

The investment cost is not likely to decrease as it is fixed with the contract. On the other hand, the cost may increase due to the unexpected expenses, i.e., contingency, faced by the project. Still, the sensitivity analysis has been carried out within the range (-10%)-(10%) deviation. In addition, the operational cost is fixed by the contract based on electricity generation; therefore, change in the operational cost is not expected. In conclusion, the above benchmark and accompanying sensitivity analyses reveal the fact that no alternative scenario, with or without VACC revenues, can make the project pass the benchmark IRR expectation. Therefore, the project is not financially attractive without VACC revenues.

Step 3: Barrier analysis

This step is not implemented for the project.

Step 4: Common practice analysis

Sub-step 4a. Analyze other activities similar to the proposed project activity

According to the requirements of common practice:

Projects are considered similar if they are in the same country/region and rely on a broadly same technology, are of similar scale and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing.

According to latest statistics published EMRA, there are 249 wind power projects started commercial operation before the project design document before the start date of the project activity.

Sub-Step 1: Calculate applicable capacity or output range as +/- 50% of the total design capacity or output of the proposed project activity:

Since the installed capacity is 129.6 MW, the total capacity of power plants which will be included in the analysis will be between 64.8 MW – 194.4 MW.

Sub-Step 2: Identify similar projects (both CDM and non-CDM) which fulfill all of the following conditions:

- a) The projects located in applicable geographic area;
- b) The projects apply the same measure as the proposed project activity;
- c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;
- d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas as the proposed project plant,
- e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;
- f) The projects started commercial operation before the project design document is published for global stakeholder consultation or before the start date of the proposed project activity, whichever is earlier for the proposed project activity.

Regarding the conditions:

-Applicable geographical area has been selected as Turkey.

-Wind energy projects have been selected regarding the same energy source type of projects.

-The selected plants deliver the same service (electricity generation).

The applicable output range has been determined from Electricity Production License Database by EMRA for 2020 which is the latest available year before the start date of the project activity.

Table 887. Operational Wind Energy Power Plants Within the Scope of Common Practice

Project	Installed Capacity (MW)
Güney-1 RES	70.00
Göktepe RES	114.20
Bozüyük RES	90.00
ATAKALE RES	119.80
VİZE-2 RES	75.00
Uşak RES	114.30
Çatalca RES	104.20
Soğanlı RES	99.80
Soma RES	120.00
Gülpınar RES	160.00
Saros RES	138.00
Tatlıpınar RES	120.20

Bağlar RES	100.00
Maslaktepe RES	68.40
Edincik RES	77.40
Hasanoba RES	76.00
Bergres RES	69.95
Evrencik RES	129.60
Ömerli RES	100.00
Ulu RES	120.00
Sibelres RES	80.00
Geyve RES	129.80
Üçpınar RES	108.60
Fatma RES	70.00
Yahyalı RES	92.85
Denizli RES	91.00
Kuşadası RES	103.50
Kangal RES	128.00
Balabanlı RES	96.80

Kocatepe RES	88.00
Albay Çiğiltepe RES	172.60
Cerit RES	90.00
Zonguldak RES	120.00
Killik RES	85.00
Aliğa RES	120.00
Geycek RES	168.00
Şah RES	105.00
Bandırma RES	87.00
Aksu RES	80.00
Balıkesir RES	142.50
Poyraz RES	66.90
Kıyıköy RES	99.45
Şamlı RES	126.50
Gökçedağ RES	150.60

Sub-Step 3: Within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number Null.

When projects registered as carbon reduction projects and projects under validation are excluded, the new list entails ~~31~~ projects which are using renewable energy as a source. Satisfying the steps 2 and 3, Nall is ~~31~~.

Step 4: Within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number Ndiff.

There is no difference in the technology applied in the proposed project activity. Ndiff=~~20~~

Step 5: calculate factor $F=1-Ndiff/Nall$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity

- $F = 1 - \frac{20}{31} = 0.35$
- $Nall - Ndiff = 31 - 20 = 11$

The proposed project activity would be a common practice only both of the following conditions apply.

$F > 0.2$ and $Nall - Ndiff > 3$

Outcome of Step 5:

Since ~~$F = 0.33$~~ and $Nall - Ndiff = 11$ the project activity is **not common practice and therefore the project is additional.**

3.5 Uncertainty management

Emission reduction calculations of the project were made according to the guideline in ACM0002 ~~v21~~v22.0. As per the methodology, the calculations should be based on a conservative approach and the monitoring parameters should be described clearly. In accordance to this, the monitoring parameters are described in Section 17.

The emission factor used in emission calculations is calculated and published every year by the Turkish Ministry of Energy and Natural Resources. The latest updated data for Operating, Build and Combined Margin Emission Factors have been published by the Ministry of Energy and Natural resources on 18.03.2024. The Ministry has calculated the factors as using the “Tool to calculate the emission factor for an electricity system version

07.0". Since it's the latest available data, published by the Ministry, these factors have been considered.

Calculation of the Operating Margin Emission Factor

It's been published as 0.7279 tCO₂/MWh by the Ministry of Energy and Natural Resources.

Calculation of the Build Margin Emission Factor

It's been published as 0.3541 tCO₂/MWh by the Ministry of Energy and Natural Resources.

Calculating of the Combined Margin Emission Factor

It's been published as 0.6345 tCO₂/MWh by the Ministry of Energy and Natural Resources.

Another parameter used in emission calculations is the electricity generated by the power plant. The electricity generated in the power plant is measured by main and backup meters at the sub-station. Both meters are jointly inspected and sealed in order to be protected from interference by any of the parties. Authorization of recording and servicing of meters is controlled by the local distribution company.

TEİAŞ is performing remote reading of the meters and monthly power meter readings are the basis for monitoring net electricity fed into the grid. EPIAŞ records will be used as the source of net generated electricity value and meter reading forms or OSF forms issued by TEİAŞ will be used for the crosscheck.

The website of EPIAŞ (<https://cas.epias.com.tr/cas/login>) is accessible to Project owner with their unique user ID and password. Once accessed, the Project owner is able to call electricity generation and consumption reports of their own projects. The same reports are used by the Project owner for invoicing TEİAŞ. The electricity generation data is reported on a monthly basis.

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

3.6 Leakage and non-permanence

According to ACM0002 [v24v22.0](#), there is no risk of leakage and/or non-permanence in wind power plants.

3.7 Mitigation results

3.7.1 Eligible areas within GHG project boundaries (AFOLU sector projects)

Not applicable since the project is not an AFOLU project.

3.7.2 Stratification (Projects in the AFOLU sector)

Not applicable since the project is not an AFOLU project.

3.7.3 GHG emissions reduction/removal in the baseline scenario

Baseline Emissions

The baseline emissions are to be calculated as follows:

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

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)

$EF_{grid,CM,y}$ = 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”(tCO₂/MWh)

For greenfield power plants, quantity of net electricity generation is:

$$EG_{PJ,y} = EG_{facility,y}$$

Where:

$EG_{PJ,y}$ = 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)

$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)

Calculation of Combined Margin

Operating, Build and Combined Margin Emission Factors of the Turkish National Grid have been published by the Ministry of Energy and Natural Resources on 18.03.2024. The

Ministry has calculated the factors using the “Tool 07: Tool to calculate the emission factor for an electricity system v07.0”. Since it’s the latest available data, published by the ministry, these factors have been considered.

Calculation of the Operating Margin Emission Factor

It’s been published as **0.7279 tCO₂/MWh** by the Ministry of Energy and Natural Resources.

Calculation of the Build Margin Emission Factor

It’s been published as **0.3541 tCO₂/MWh** by the Ministry of Energy and Natural Resources.

Calculating of the Combined Margin Emission Factor

It’s been published as **0.6345 tCO₂/MWh** by the Ministry of Energy and Natural Resources.

The combined margin is calculated ex-ante and has been fixed for the crediting period.

$$\begin{aligned} BE_y &= EG_{\text{facility},y} \times EF_{\text{grid},CM,y} \\ &= 518,4430,000 \times 0.6345 \\ &= 328,924,272,835 \text{ tCO}_2\text{e / year.} \end{aligned}$$

Project Emissions

As it is stated in ACM0002 [v21v22.0](#), renewable energy power generation project emissions considered 0.

$$PE_y = 0$$

Leakage

In accordance with the ACM0002 [v21v22.0](#), leakage is taken as zero since the project is a new power plant.

$$LE_y = 0.$$

3.7.4 GHG emissions reduction/removal in the project scenario

According to ACM0002 [v21v22.0](#) methodology, emission reductions related to project activities is estimated as follows:

$$ERy = BEy - PEy - LEy$$

where:

ERy = Emission reductions in year y (tCO₂/yr)

BEy = Baseline emissions in year y (tCO₂/yr)

PEy = Project emissions in year y (tCO₂/yr)

LEy = Leakage emissions in year y (tCO₂/yr)

$$ERy = BEy - PEy - LEy$$

Equation (2)

$$ERy = 328,924 - 272,835 - 0 - 0$$

$$ERy = 328,924 - 272,835 \text{ tCO}_2$$

<u>Year</u>	<u>GHG emission reductions/removals in the baseline scenario (tCO_{2e})</u>	<u>GHG emission reductions/removals in the project scenario (tCO_{2e})</u>	<u>GHG emissions attributable to leakages (tCO_{2e})</u>	<u>Estimated Net GHG Reduction/Removals (tCO_{2e})</u>
<u>14.10.2020 – 31.12.2020</u>	71,191	0	0	71,191
<u>01.01.2021 – 31.12.2021</u>	328,924	0	0	328,924
<u>01.01.2022 – 31.12.2022</u>	328,924	0	0	328,924
<u>01.01.2023 – 31.12.2023</u>	328,924	0	0	328,924
<u>01.01.2024 – 31.12.2024</u>	328,924	0	0	328,924
<u>01.01.2025 – 31.12.2025</u>	328,924	0	0	328,924

<u>01.01.2026 – 31.12.2026</u>	<u>328,924</u>	<u>0</u>	<u>0</u>	<u>328,924</u>
<u>01.01.2027 – 13.10.2027</u>	<u>257,732</u>	<u>0</u>	<u>0</u>	<u>257,732</u>
<u>Total</u>	<u>2,302,467</u>	<u>0</u>	<u>0</u>	<u>2,302,467</u>
<u>Annual Average</u>	<u>328,924</u>	<u>0</u>	<u>0</u>	<u>328,924</u>

The emission reductions of the project were calculated using "ACM 0002 v22.0" and "Tool 07: Tool to calculate the emission factor for an electricity system v07.0". Since these methodologies are compatible with ISO14064-3:2019. The mitigation results achieved as a result of the project activity are verifiable within the framework of ISO 14064-3:2019.

Year	GHG emission reductions/removals in the baseline scenario (tCO_{2e})	GHG emission reductions/removals in the project scenario (tCO_{2e})	GHG emissions attributable to leakages (tCO_{2e})	Estimated Net GHG Reduction/Removals (tCO_{2e})
14.10.2020 – 31.12.2020	59,051	0	0	59,051
01.01.2021 – 31.12.2021	272,835	0	0	272,835
01.01.2022 – 31.12.2022	272,835	0	0	272,835
01.01.2023 – 31.12.2023	272,835	0	0	272,835
01.01.2024 – 31.12.2024	272,835	0	0	272,835
01.01.2025 – 31.12.2025	272,835	0	0	272,835

01.01.2026– 31.12.2026	272,835	0	0	272,835
01.01.2027– 13.10.2027	213,783	0	0	213,783
Total	1,909,844	0	0	1,909,844
Annual Average	272,835	0	0	272,835

4 Compliance with Laws, Statutes and Other Regulatory Frameworks

The project is not enforced by any laws or regulations. Applicable laws and regulations are listed below:

- Electricity Market Law (Enacted on 30/03/2013)
- Law on Utilization of Renewable Energy Resources for the Purpose of Generation Electricity (Enacted on 18/05/2005)
- Energy Efficiency Law (Enacted on 02/05/2007)
- Environment Law (Enacted on 25/11/2014)
- Forest Law (Enacted on 08/09/1956)

5 Carbon ownership and rights

5.1 Project holder

Individual or organization	Sekans Enerji Limited ŞTİ.
Contact person	Sıla Duran
Job position	General Manager
Address	Emniyet Evleri District, Eski Büyükdere Street, No: 1/1 Aparment No: 1Bo4 Kağıthane/İstanbul, Türkiye
Phone number	=

Email	sila@sekansdanismanlik.com
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5.2 Other project participants

Individual or organization	Evrencik Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi – Legal Owner of the Project
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Contact person	Halil İleri
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Job position	Authorized Signatory
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Address	Dumlupınar OSB District, Açelya Street No:2 Osmangazi/Bursa, Türkiye
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Phone number	+90 224 225 55 50
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Email	halil.ileri@edincikres.com
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5.3 Agreements related to carbon rights

The project activity has been developed and operated by ~~project holder~~[the legal owner](#), Evrencik Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi ~~and-~~ [Carbon ownership and rights are only assigned to the project holder](#) ~~Evrencik Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi~~[Sekans Enerji Limited STİ.](#)

5.4 Land tenure (Projects in the AFOLU sector)

Not applicable since the project is not an AFOLU project.

6 Climate change adaptation

~~Evrencik WPP contributes to climate change adaptation by generating electricity from wind energy, which is a renewable, clean and sustainable source. The project activity reduces the country's reliance on fossil fuels in electricity supply in this manner.~~[According to BCR Standard v3.4:](#)

“Project holder shall carry out actions related to climate change adaptation, demonstrating that these are derived from the GHG Project activities and so the project holder shall demonstrate that they:

(a) consider one or more of the strategic lines proposed in the National Climate Change Policies and/or focuses aspects outlined in the regulations of the country where the project is implemented;

(b) improve conditions for the conservation of biodiversity and its ecosystem services, in the areas of influence, outside the project boundaries; i.e., natural cover on environmentally key areas, biological corridors, water management in watersheds, among others;

(c) implement activities that generate sustainable and low-carbon productive landscapes;

(d) propose restoration processes in areas of specific environmental importance;

(e) design and implement adaptation strategies based on an ecosystem approach;

(f) strengthen the local capacities of institutions and/or communities to take informed decisions to anticipate negative effects derived from climate change (recognition of conditions of vulnerability); as well as to take advantage of opportunities derived from expected or evidenced changes.”

Evrencik WPP contributes to climate change adaptation as written below:

(a) Türkiye aims to increase renewable energy sources in primary energy consumption by 20.4% by 2030¹⁸. The establishment of Evrencik WPP contributes to this goal. Also, Evrencik WPP contributes to the emission reduction NDC declared within the Paris Agreement by generating renewable energy and reducing Türkiye’s emissions in electricity generation.

(b) Regarding impact on ecological life in Project area, Ornithological and Ecological Evaluation Report¹⁹ was prepared. Within the scope of the study, the observations made in projects site and its vicinity. The scientific data obtained from the observations and research carried out for different reasons in the past periods were

¹⁸ <https://iklim.gov.tr/db/turkce/dokumanlar/turkiye-cumhuriyeti--8230-102-20230512125223.pdf>

¹⁹ Akdeniz University Faculty of Science Biology Department, May 2013

also used. The fact that the facilities within the scope of project activity are located in a very small area there won't be any negative impact on the breeding ecology of any species.

(c) For the landscape of the Project area, in support of field observations, face-to-face interviews were conducted with the local residents living in the project area, and extensive literature reviews were also carried out

(d) There is no protection priority in terms of vegetation and plant species spreading in the area. Considering the areas where the turbines are installed, the feeding and sheltering habitats are far away from the project activity. There are no sensitive or naturally protected areas within the project site and around 10 km.

(e) No local endemic or rare species specific to the area were encountered in the project site. It's been reported that no negative impact was considered by the project activity.

(a)(f) Within the scope of the National Rural Development Strategy²⁰, Türkiye aims to increase the employment of citizens living in rural areas. The establishment of Evrencik WPP and providing local employment contributes to this goal of the country.

7 Risk management

The project holder assessed the risks related to the implementation of the project activity in terms of environmental, financial and social aspects and mitigation measures have been taken for both construction and operation phase of the project. Identified risks and mitigations are listed in the table below in accordance to the BCR's Permanence and Risk Management Tool v1.1:

Risk Category	Identified Risks	Mitigations
Environmental	Ecosystem Protection	Regarding impact on bird and bats carcasses and nests, Ornithology Report was prepared and it's been reported that no negative impact was considered.

²⁰ <https://www.tarimorman.gov.tr/TRGM/Belgeler/UKKS-Strateji-Belgesi.pdf>

	Wastewater Generation	Wastewater produced by employees during operation is collected in an impermeable septic tank and later they are periodically transferred to wastewater treatment plant.
	Solid Waste Generation	Domestic wastes are properly stored and dispose in accordance with the Waste Management Regulation.
	Hazardous Waste Generation	Oil wastes will be handled appropriately in closed containers and transported by licensed transporters to the licensed processing and disposal facilities.
	Noise Pollution	A Noise Impact Assessment was conducted, and it was concluded that no negative impact was considered.
Financial	Potential Power Price Changes	In Turkey, a fixed feed-in-tariff is applied for renewable energy power plants for the first 10 years. This prevents renewable power plants from being negatively affected financially in case electricity prices change negatively.
Social	Occupational Accidents	All employees receive Occupational Health and Safety training every year. There are warning signs at the power plant against situations that may threaten occupational safety. Within the measures taken, the

		possibility of occupational accidents has been minimized.
	Negative impacts on locals	<p>During the construction phase of the project, negative effects on the local people regarding the land dispute were prevented by complying with expropriation laws and by keeping in constant communication with the citizens affected by the project site.</p> <p>There is no discrimination based on language, religion, race, or gender among the employees working at the power plant. Any potential negative effects to employees are prevented by complying the Labor Law.</p>

7.1 Reversal Risk

The project will be operated properly throughout its technical lifetime. Periodic maintenance of the equipment in the power plant is carried out regularly.

The main and backup meters, through which the electricity generation will be monitored, are regularly checked by TEİAŞ and calibrated every 2 years. The values read on these meters are monitored every hour, and in case of any inconsistency in the values read on the main and backup meters, the distribution company intervenes immediately, and the problem is resolved. Within this action plan, there is no possibility that the emission calculations made by the power plant will be wrong.

Any operational risks have been minimized by adhering to relevant laws and regulations and applying routine maintenance activities.

7.1.1 Loss Event Report

If an event occurs that will cause loss or reduction of VCCs, a report regarding this situation will be prepared and submitted within a year.

8 Sustainable development safeguards (SDSs)

The impact of the project activity on environmental and social aspects is shown below based on BioCarbon's SDS Tool v1.0.

Environment

1. Land use: Resource Efficiency and Pollution Prevention and Management

- During the construction phase of the project, negative effects on the local people regarding the land dispute were prevented by complying with expropriation laws and by keeping in constant communication with the citizens affected by the project site.
- Domestic wastes are properly stored and disposed of in accordance with the Waste Management Regulation.
- Wastewater produced by employees during operation is collected in an impermeable septic tank and later they are periodically transferred to wastewater treatment plant.
- Oil wastes will be handled appropriately in closed containers and transported by licensed transporters to the licensed processing and disposal facilities.

2. Water

Due to the nature of the project activity, it does not cause any harm to the surrounding water resources. How to dispose of wastewater is shown in the section above.

3. Biodiversity and Ecosystems

Regarding impact on bird and bats carcasses and nests, an Ornithology Report was prepared, and it's been reported that no negative impact was considered.

4. Climate Change

Evrencik WPP contributes to climate change adaptation by generating electricity from wind energy, which is a renewable, clean and sustainable source. The project activity reduces the country's reliance on fossil fuels in electricity supply in this manner.

Social

1. Human Rights

a. Labor and Working Conditions

Employee rights in Turkey are protected by the Labor Law. According to the Labor Law:

- Forced labor and child labor is prohibited.
- The employer is responsible for the safety of employees and the workplace. In this context, employees of power plants, which are classified as very dangerous workplaces, are required to receive OHS training every year.
- Every employer is obliged to give its employees the rights written in the Labor Law.

b. Gender Equality and Women Empowerment

Project Holder does not discriminate against gender during recruitment. There is no gender discrimination in relations with the local people.

c. Land Acquisition, Restrictions on Land Use, Displacement, and Involuntary Resettlement

During the construction phase of the project, negative effects on the local people regarding the land dispute were prevented by complying with expropriation laws and by keeping in constant communication with the citizens affected by the project site. No local people were forcibly displaced due to the project activity.

d. Indigenous Peoples and Cultural Heritage

There was no damage to the cultural heritage and no harm to indigenous people due to the project activity.

e. Community Health and Safety

Hazardous and domestic wastes generated by the project activity, which may harm the environment and the health of the local people if not disposed of properly, are disposed of properly in accordance with the Waste Management Regulation, thus preventing any harm to the health of the local people.

Areas that would threaten the safety of local people are surrounded by fences. There are warning signs in areas where there may be a safety hazard.

2. Corruption

There is no misuse of funds, fraudulent reporting, conflict of Interest, lack of transparency, weak regulatory oversight, lack of accountability mechanisms, environmental permitting corruption and subcontractor corruption in project activity.

3. Economic Impact

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

9 Stakeholder engagement and consultation

The promotion of the Evrencik WPP project was made on 10/05/2022 with the participation of the local people and the representatives of the relevant institution in Evrencik Village of Vize Town, in Kırklareli Province.

The project was introduced to the local people and the questions of the participants were answered.

The announcement letters were put up on the public places and presented in the mukhtar's office. The meetings comprised of presentation that includes the Project information and record of comments. To ensure the communication of the meeting, project brochures were shared with the heads.

Agenda:

- Introduction of Project Representatives
- Introduction of the project activity
- Assessment of Impact of Project on Sustainability
- Q&A Session and Feedbacks

Local stakeholders were also informed on environment and social impacts on SDG elements of the project during the meetings. [In total, 11 people participated in the meeting. The stakeholders filled out impact assessment forms regarding the project a ctivity.](#)

It is important for the Project Owner to monitor the on-going stakeholder engagement process to ensure that consultation and disclosure efforts are effective, and stakeholders delivering grievances have been meaningfully consulted throughout the process. Therefore, Stakeholder Engagement Plan is executed by the Project Owner. The contact

information of the plant responsible exist 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 be received directly by the project owner and appropriate contributions or improvements are made to the local community.

9.1 Summary of comments received

Local people were employed during construction and are being employed during operation. Contribution to local economy and lead to improvement in living standards were also supported by the stakeholders. There was no negative comment from the participants during the meeting.

9.2 Consideration of comments received

The contact information of the plant responsible was shared with the stakeholders and it was stated that the project owner and local community would always be in touch. Additionally, the participants were informed about the ongoing grievance process.

10 Sustainable Development Goals (SDGs)

The project is expected to contribute SDG 7, 8 and 13.

- **Goal 7 Affordable and Clean Energy**

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 by fossil fired power plants.

The project contributes to the following target 7.2. and following indicator 7.2.1.

- **Goal 8 Decent Work and Economic Growth**

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.

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

The project contributes to the following targets 8.5.; 8.8.and following indicators 8.5.2.; 8.8.1.

- **Goal 13 Climate Action**

The project contributes to improve the environmental situation in the region and in the country as avoiding fossil fuel-based electricity will enhance the air quality and help to reduce the adverse effects on the climate. Through renewable technologies and wind-based electricity sustainable and climate friendly development is promoted. While emission reduction is realized, technology transfer is also realized as benefitting from wind energy.

The project contributes to the following target 13.3. and following indicator 13.3.2.

11 REDD+ Safeguards (For REDD+ projects)

Not applicable.

12 Special categories, related to co-benefits (optional)

Not applicable.

13 Grouped projects (if applicable)

Not applicable.

14 Other GHG program

The project had a submission for Global Carbon Council on 3 June 2022 and a request for registration on 15 May 2023, however, it was decided to abandon this submission and move on to registration for BCR. Since there is no de-registration procedure in GCC yet, the submission has not been officially canceled, but there will be no registration request within this submission and this submission will be officially canceled when GCC's de-registration procedure is published.

Evrencik Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi hereby confirms that Evrencik Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi will not seek to issue any GHG instruments under the Global Carbon Council for the crediting period for which we will request VCC through the BioCarbon Registry.

15 Double counting avoidance

No GHG related environmental credits are applied to the Turkish power sector. Also, the “Evrencik WPP” is not included in an ETS or other GHG trading mechanism. Since an ETS is not implemented in Türkiye, an emission reduction cap has not been enforced for any sector. As an ETS is not implemented in Türkiye, no double-counting risk exists for Türkiye and this project

This information is confirmed in the no-double counting declaration by Evrencik Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi.

If any such risk of double counting exist in Türkiye, the Project Holder (Evrencik Rüzgar Enerjisinden Elektrik Üretim Anonim Şirketi) shall retire eligible units equal to the quantity of VCCs [in accordance to BCR’s Avoiding Double Counting \(ADC\) Tool v2.0.](#)

16 Monitoring plan

The Project Owner will be responsible for the overall management of the monitoring procedures including recording, data collection and storage. The project owner is also responsible for the administration of the data, setting up a carbon team who is responsible for monitoring all data required to estimate emission reductions. The emission reductions based on these monitored data will also be calculated by the Project Owner.

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 between the electricity supplied and consumed by the project and shall be taken into account for emission reduction calculations.

Four power meters are installed at the grid interface of the project. Two of them are the main meters, and the other two power meters are back-up meters of the main meters for cross-checking. Serial numbers of main power meters are 9420198 for TR-A and 9420200 for TR-B. Serial numbers of back-up meters are 9420199 for TR-A and 9420201 for TR-B. All meters are jointly inspected and sealed in order to be protected from interference by any of the parties.

~~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 in order to be protected from interference by any of the parties.~~

-

The capacity of the transmission line connected is 154 kV, the accuracy class for main power meters have been defined in the Communiqué for Power Meters as 0.5S class. The back-up meters have the same accuracy class of 0.5S. The calibration will be implemented in accordance with the related standard procedures (IEC-EN 62053-22 and 62053-23) by either Turkish Electricity Transmission Corporation (TEIAS) or the provider company in the name of TEIAS. The meters are calibrated every ten years. Additionally, the meters are tested every two years

~~The capacity of the transmission line connected is 154 kV, the accuracy class for main power meters have been defined in the Communiqué for Power Meters as 0.2S class. The back-up meter has the same accuracy class of 0.2S. The calibration will be implemented in accordance with the related standard procedures (IEC-EN 62053-22 and 62053-23) by either Turkish Electricity Transmission Corporation (TEIAS) or the provider company in the name of TEIAS. The meters are calibrated every ten years. Additionally, the meters are tested every two years~~²¹.

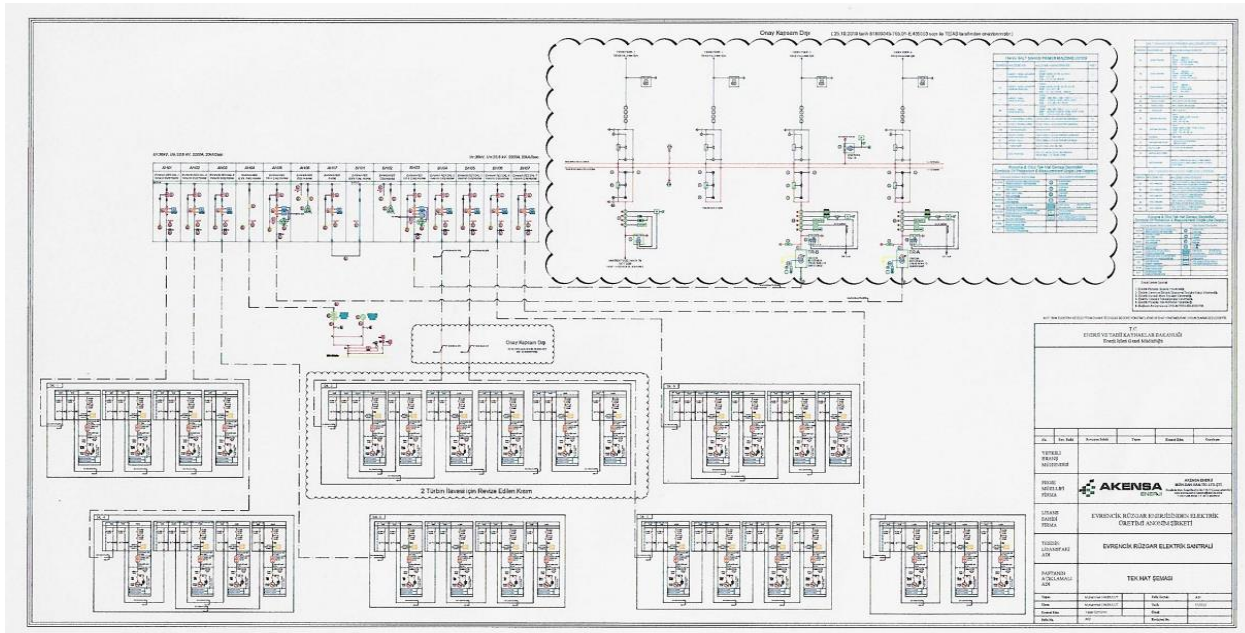


Figure 6. Single Line Diagram

²¹ Please see Clause 9:
[Measuring instruments directive](#)

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

TEİAŞ is performing remote reading of the meters and monthly power meter readings are the basis for monitoring net electricity fed into the grid. EPIAŞ records will be used as the source of net generated electricity value and meter reading forms or OSF forms issued by TEİAŞ will be used for the crosscheck.

The website of EPIAŞ (<https://cas.epias.com.tr/cas/login>) is accessible to Project owner with their unique user ID and password. Once accessed, the Project owner is able to call electricity generation and consumption reports of their own projects. The same reports are used by the Project owner for invoicing TEİAŞ. The electricity generation data is reported monthly basis.

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

Data and Parameters fixed during the crediting period

Data / Parameter	$EF_{grid,CM,y}$
Unit	tCO ₂ / MWh
Description	Combined Margin Emission Factor of the Turkish National Grid. It's been published by Turkish Ministry of Energy and Natural Sources for 2021 on 18/03/2024.
Source of data	Turkish Ministry of Energy and Natural Sources. See: https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evr eVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%9Fikli% C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Form u.pdf

Value applied	0.6345
Justification of choice of data	Official data published by Host Country's Ministry of Energy and Natural Sources.
Purpose of Data	Calculation of baseline emissions.
Comments	The emission factor is fixed ex-ante; thus, no monitoring and recalculation of the emissions factor during the crediting period is required

Data / Parameter	$EF_{grid,OM,y}$
Unit	tCO ₂ / MWh
Description	Operating Margin Emission Factor of the Turkish National Grid. It's been published by Turkish Ministry of Energy and Natural Sources for 2021 on 18/03/2024.
Source of data	Turkish Ministry of Energy and Natural Sources. See: https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evr eVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%9Fikli%C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Form u.pdf
Value applied	0.7279
Justification of choice of data	Official data published by Host Country's Ministry of Energy and Natural Sources.
Purpose of Data	Calculation of baseline emissions.

Comments	The emission factor is fixed ex-ante; thus, no monitoring and recalculation of the emissions factor during the crediting period is required
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Data / Parameter	$EF_{grid,BM,y}$
Unit	tCO ₂ / MWh
Description	Build Margin Emission Factor of the Turkish National Grid. It's been published by Turkish Ministry of Energy and Natural Sources for 2021 on 18/03/2024.
Source of data	Turkish Ministry of Energy and Natural Sources. See: https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evr eVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%9Fikli% C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Form u.pdf
Value applied	0.3541
Justification of choice of data	Official data published by Host Country's Ministry of Energy and Natural Sources.
Purpose of Data	Calculation of baseline emissions.
Comments	The emission factor is fixed ex-ante; thus, no monitoring and recalculation of the emissions factor during the crediting period is required

Data and Parameters monitored

Data / Parameter	EG _{PJ,y}					
Unit	MWh/yr					
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y					
Source of data	Meters					
Value applied	The annual electricity fed to the grid is estimated as 430,000 518,400 MWh					
Justification of choice of data	<p>The net electricity value supplied to the grid is continuously measured by on-site power meters and recorded monthly. EPIAŞ (which is an association of TEİAŞ) records provide the exact electricity value delivered to the grid. These values are cross-checked with the on-site meter records.</p> <p>The generation data is recorded by two metering devices continuously. ISVM (Electricity fed to the grid) and UECM (Electricity consumed from the grid) are measured. Net generation is calculated by subtracting UECM from ISVM.</p>					
Monitoring Frequency	Monthly					
Monitoring Equipment	Meter	Brand	Type	Class	Serial No	
	Main-1	EMH	LZQJ-XC	0.5S	9420198	
	Main-2	EMH	LZQJ-XC	0.5S	9420200	

	Backup- 1	EMH	LZQJ- XC	0.5S	9420199	
	Backup- 2	EMH	LZQJ- XC	0.5S	9420201	
	<u>Evrencik WPP / TR-A</u>					
	<u>Parameters</u>		<u>Main Meter</u>		<u>Spare Meter</u>	
	<u>Brand</u>		EMH		EMH	
	<u>Type</u>		LZQJ-XC		LZQJ-XC	
	<u>Location</u>		On-site		On-site	
	<u>Serial Number</u>		9420198		9420199	
	<u>Accuracy</u>		0.5S		0.5S	
	<u>Latest Test Date</u>		09/07/2020		09/07/2020	
	<u>Evrencik WPP / TR-B</u>					
	<u>Parameters</u>		<u>Main Meter</u>		<u>Spare Meter</u>	
	<u>Brand</u>		EMH		EMH	
	<u>Type</u>		LZQJ-XC		LZQJ-XC	
	<u>Location</u>		On-site		On-site	

	Serial Number	9420200	9420201
	Accuracy	0.5S	0.5S
	Latest Test Date	09/07/2020	09/07/2020
Purpose of Data	Calculation of baseline emissions. To assess to contribution to SDG7.		
QA/QC	<ul style="list-style-type: none"> • 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 under the responsibility of TEİAŞ. Since TEİAŞ meters are sealed by distribution company the project proponent cannot intervene with the devices. • The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import 		
Comments	-		

Data / Parameter	ER _y
Unit	tCO ₂ /yr

Description	<p>Emission reductions by the project activity in year y (t CO₂/yr)</p> <p>In accordance with ACM0002, Version 2+22.o, baseline emissions include CO₂ 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 CO₂ emission factor for grid connected power generation in year y.</p>
Source of data	<ol style="list-style-type: none"> 1. Meters 2. Turkish Ministry of Energy and Natural Sources. See: https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evr eVe%C4%Boklim/%C4%BoklimDe%C4%9Fi%C5%9Fikli%C4%9Fi/TUESEmisyonFktr/Belgeler/TUESEF_Bilgi_Form u.pdf
Value applied	272,835328,924
Justification of choice of data	<ol style="list-style-type: none"> 1. The net electricity value supplied to the grid is continuously measured by on-site power meters and recorded monthly. EPIAŞ (which is an association of TEİAŞ) records provide the exact electricity value delivered to the grid. These values are cross-checked with the on-site meter records. 2. Official data published by Host Country's Ministry of Energy and Natural Sources
Monitoring Frequency	Monthly
Purpose of Data	<p>Calculation of baseline emissions.</p> <p>To assess to contribution to SDG13.</p>

QA/QC	The QA/QC procedure for the EG _{Pj,y} parameter will be applied the same for this parameter.
Comments	-

Data / Parameter	Number of Employment
Unit	Number
Description	Number of people permanently working for the operation of the project
Source of data	Social Security System (SGK) records
Value applied	11
Justification of choice of data	Checking the employment records to confirm the number of employment
Monitoring Frequency	Annually
Purpose of Data	To assess to contribution to SDG8.
QA/QC	N/A
Comments	-

Data / Parameter	Quality of Employment
Unit	Number of training provided

Description	Number of OHS and job-related training provided to the employees
Source of data	Training Record
Value applied	At least one training per year
Justification of choice of data	<p>OHS training is provided to all employees working at the power plant. It is mandatory to provide OHS training to employees at least once a year.</p> <p>Certificates of OHS training will be stored in the site area during the operation period.</p> <p>According to “Regulation on the Procedures and Principles of Employee’s OHS Training” in official gazette No. 28648 on 15/05/2013, it is responsibility of PO to provide regular OHS trainings to employees.</p> <p>In addition to OHS trainings, the project owner provided job-related training the employees.</p>
Monitoring Frequency	Each monitoring period.
Purpose of Data	To assess to contribution to SDG 8.
QA/QC	N/A
Comments	-

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NOTE: This Project Document (PD) shall be completed following the instructions included. However, it is important to highlight that these instructions are complementary to the BCR STANDARD, and the Methodology applied by the project holder, in which more information on each section can be found.